Feature

Digital Citizenship

Addressing Appropriate Technology Behavior

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Subject: Appropriate technology use

Grades: K–12 (Ages 5–18)

Standards: *NETS•S* 2; *NETS•T* VI; *NETS•A* VI (http://www.iste.org/standards/)

Supplement: http://www.iste.org/LL/

Recently, the popular press has pointed to increasing evidence of misuse and abuse of emerging technologies in U.S. schools. Some examples include using Web sites to intimidate or threaten students, downloading music illegally from the Internet, plagiarizing information using the Internet, using cellular phones during class time, and playing games on laptops or handhelds during class. How can we address these issues?

ISTE's National Educational Technology Standards (NETS) give us a starting point. The standards for students, teachers, and administrators all address social and ethical issues. For example, NETS for Students 2: Social, Ethical, and Human Issues, covers three very broad areas:

1. Students understand the ethical, cultural, and societal issues related to technology.
2. Students practice responsible use of technology systems, information, and software.
3. Students develop positive attitudes toward technology applications that support lifelong learning, collaboration, personal pursuits, and productivity.

All three of these areas are very important and help form students' technological development.

However, ISTE created these standards to guide in-school behavior. With increasing reports of student misuses of technology, student behavior in and out of school has become an issue for educators. They must prepare students to be members of a digital society or digital citizens. In this article, we discuss nine areas of digital citizenship and provide strategies for teachers to employ and teach appropriate behavior. Next month, we provide questions and answers to help technology coordinators and administrators implement digital citizenship.

A Definition of Digital Citizenship

Digital citizenship can be defined as the norms of behavior with regard to technology use. As a way of understanding the complexity of digital citizenship and the issues of technology use, abuse, and misuse, we have identified nine general areas of behavior that make up digital citizenship.

1. *Etiquette:* electronic standards of conduct or procedure
2. *Communication:* electronic exchange of information
3. *Education:* the process of teaching and learning about technology and the use of technology
4. *Access:* full electronic participation in society
5. *Commerce:* electronic buying and selling of goods
6. *Responsibility:* electronic responsibility for actions and deeds
7. *Rights:* those freedoms extended to everyone in a digital world
8. *Safety:* physical well-being in a digital technology world
9. *Security* (self-protection): electronic precautions to guarantee safety

Digital citizenship speaks to several levels of responsibility for technology. Some issues may be of more concern to technology leaders while others may be of more concern to teachers. Topics within digital citizenship are wide and varied, so you will need to use these topics as a "buffet" and take what you need, realizing that the other themes are there.

Examples and Strategies

Etiquette. Digital behavior makes everyone a role model for students. The problem with teaching digital technology is not all the rules have been written about uses for these devices. As new technologies have proliferated, users have not had the opportunity to "catch up" with all of their uses. Some rules or policies are assumed, while others have been created by an individual user or group. According to a 2003 Cingular Wireless survey of users and mobile phone etiquette, 42% in the South Atlantic region of the United States said they would answer a ringing phone while having a face-to-face conversation. (***Editor's note:*** Find this and other resources mentioned in this article on p. 11. The online supplement contains further resources on the issues addressed here.) When students see adults using technologies inappropriately, they can assume it is the norm. This leads to inappropriate technology behavior on the part of students.

Inappropriate Etiquette

- Students use handhelds or instant messaging (IM) to send non-class-related messages back and forth in class.

Strategies

- Follow rules and policies established by the school or district for appropriate technology use.
- Use case studies or scenarios (such as those included in the paper "Steal This Test!" posted on our Digital Citizenship site) to illustrate appropriate and inappropriate ways of using technology.
- Model appropriate uses of technology in and out of the classroom.

Communication. Cell phones, IM, and e-mail have changed the way technology users communicate. These forms of communication have created a new social structure of who, how, and when people interact.

Inappropriate Communication

- Students use cellular phones as the new "digital clique" to exclude other students, for example, excluding

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certain students from their cellular phone books.
- Students use IM and e-mail shorthand in class assignments. Using poor grammar and inappropriate slang or abbreviations can lead to bad habits in formal writing.

Strategies
- Model good use of electronic communication (e.g., sending messages that are to the point, avoiding shorthand when it is not appropriate).
- Encourage students to use digital communication, but correct them when they are doing something inappropriate.
- Use e-mail in situations where short responses are most appropriate.
- Use cell phones for learning purposes (e.g., accessing information in real time).

Education. Technology-infused teaching is becoming more commonplace every year. Technology in the classroom is becoming as transparent as the chalkboard and pencil. However, teaching how to use this technology has not grown accordingly. Technology-infused teaching does not always include teaching about appropriate and inappropriate uses of technology.

Inappropriate Education
- Students use cell phones or handhelds to get test/quiz answers from other students.
- Teachers do not teach students how technology can be used to find credible resources and materials.

Strategies
- Create activities and exercises that allow students to use PDAs to retrieve, store, and share information in a responsible fashion.
- Encourage students to come up with new and alternative uses for the Internet and digital technologies (e.g., IM or online discussion boards).
- Provide learning opportunities in different technology modes (e.g., Web sites, chat rooms, course management systems).
- Teach information literacy (e.g., identifying, accessing, applying, and creating information) by using technology-infused projects.

Access. Technology provides many opportunities for large numbers of people to access and use alternative forms of communication. But not everyone has the ability to use or access the tools in the new digital society. Often these opportunities are only available to a small group of students, even though the price of technology is rapidly dropping and access to technology is greater than ever before. The disparity of who does and does not have access to technology in America is widening. A 2003 report by the U.S. Department of Education showed that only 41% percent of Blacks and Hispanics were using a computer in the home compared to 77% percent of Whites.

Inappropriate Access
- Schools ignore or overlook the digital needs of disenfranchised groups.
- School districts do not provide specialized technologies for special populations (e.g., unavailable because of "lack of funds").
- Teachers fail to accommodate students who do not have access.
- Teachers "shy away" from assignments that require technology for fear that students do not have access.

Strategies
- Explore Web sites and materials to learn more about accessibility issues. The World Wide Web Consortium, SNOW, and the Special Needs and Technology page are good places to start.
- Identify students who have special needs or circumstances and explore ways to accommodate their technology needs (e.g., assistive technology). SERI's Special Needs and Technology Resources page can help you identify technology tools.
- Advocate the creation of Web sites that enable everyone to have equal access both in language and structure.
- Advocate for technology access for all students irrespective of disabilities. For example, either adhere to the World Wide Web Consortium's guidelines for Web site creation or ask that those in your school or district who create Web pages adhere to these guidelines.
- Provide time for students to use school technology to work on assignments.
- Allow students to work together on assignments (i.e., pair students with no or limited access to technology with others who have significantly greater access).

Commerce. Online purchasing is rapidly becoming the norm, and students need to understand this process. According to the *E-Commerce Times* report "There's Money in Teen Web Surfers," 29% of teens research products on the Internet before purchasing them in stores. If our goal is to produce literate citizens, then a discussion of digital commerce is important.

Inappropriate Commerce
- Students purchase goods online without knowledge of how to protect their identity (identity theft).
- Students fail to realize the consequences of poor online purchasing practices (e.g., impulse buying). Although poor purchasing practices are common to face-to-face and electronic exchanges, students are at greater risk online because of ease of access, unscrupulous sellers, and targeted maketing.

Strategies

- Engage students in a dialogue about using technology to purchase goods and services.
- Engage students in a discussion about good and bad experiences of purchasing goods online.
- Ask students to read comparison shopping Web sites such as CNET or AddALL to analyze comparative shopping strategies.
- Teach students about the dangers of identity theft and how to protect themselves.

Responsibility. At an early age, students found it easy to locate and download material from the Internet. However, they have not learned what is appropriate or inappropriate, legal or illegal when using the Internet. For example, a 2003 Business Software Alliance report indicated that two-thirds of college faculty and administrators say it is wrong to download or swap files while fewer than one-quarter of students at the same colleges say it is wrong. Recently, the Recording Industry Association of America (RIAA) filed suit against students and others for downloading music illegally. This action has caused technology users to think twice about what is appropriate and legal.

Inappropriate Responsibility

- Students download illegal MP3 music from sites.
- Students copy material off the Internet for class projects without giving credit to the author.

Strategies

- Use materials from Junior Achievement to illustrate the cost of illegal downloading from the Internet.
- Open a dialogue on students' feelings regarding their material being downloaded without permission.
- Discuss with students the school's codes of conduct as well as specific laws as they relate to illegal use of technology and the consequence/cost for the breaking those rules/laws.
- Begin discussion on student perceptions of ethical/unethical technology use.
- Discuss fair use and copyright laws.

Rights. When creating or publishing anything digitally, students have the same copyright protection as any other content creators.

Inappropriate Rights

- Schools do not protect the rights of users working with school technology.
- Students violate school acceptable use policies (AUPs) because they view them as unfair.

Strategies

- Teach faculty about student digital rights.
- Teach students about their digital rights.
- Engage the school community in discussion of why school and district policies regarding technology exist.
- Provide students with information about appropriate and inappropriate use of technology in school.
- Engage students about the differences between rights in school and outside school when using technology.

Safety. Students need to be aware of the physical dangers that are inherent in using technology. Carpal tunnel syndrome is one (though not the only) such danger. Eyestrain and poor posture are not uncommon in technology-related activities. Educators need to encourage students to use technology in a responsible way to prevent various physical injuries. Having proper ergonomics can help protect students from long-lasting problems related to unsafe use of technology.

Inappropriate Safety

- Teachers are unaware of possible negative physical effects of technology on students.
- Teachers do not teach ergonomics when using technology.

Strategies

- Explore Web sites (e.g., UCLA's ergonomics site) to learn new ways for using technology safely.
- Make sure that rooms are well lit, and provide appropriately sized furniture for the technology use.
- Make students aware of the long-term physical effects of certain technology use.

Security. As more and more sensitive information is stored electronically, a corresponding strategy to protect that information must be created. Students need to learn how to protect electronic data (e.g., virus protection, firewalls, off-site storage). Protecting one's equipment is not only a matter of personal responsibility but also necessary for protecting the community (e.g., keeping one's virus software up to date). However, digital security goes beyond protecting equipment. It includes protecting ourselves and others from outside influences that would do us physical harm.

Inappropriate Security

- Students and educators assume there is no need to protect electronic data.
- Students and faculty fail to maintain current software updates or patches on their home computers that protect us from viruses
- Students do not protect their identities while using e-mail, chat, or IM.

Strategies

- Contact organizations (e.g., i-SAFE America) to obtain materials about

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protecting online users.
- Research what your school does to provide protection from possible outside digital harm.
- Teach students to back up data and protect their equipment from damage.
- Teach students how to conduct regular checks for viruses or other software intrusions using approved software. The National Cyber Security Alliance stated that 67% of broadband users don't have properly installed and securely configured firewalls.

Conclusion

Digital citizenship has become a priority for schools that see technology integration as a major teaching and learning strategy for preparing students to live and work in the 21st century. Using the NETS to help understand how technology should be used in the curriculum and applying digital citizenship to help define students' behavior will facilitate the development of well-rounded, technology-savvy students.

As the years pass and new digital technologies appear, a framework of codified principles will be harder to create. Society will need guidance on how to act with respect to technology. Laws will be enacted, but they will not be enough. Groups and organizations (including schools) have created rules and AUPs, but they, too, fall short. There has been no universal agreement on how we should act in relation to digital technologies. Will reaching an agreement be easy? Quite the opposite; it will be very difficult to come to a consensus on how everyone will deal with digital technology. We must begin somewhere, and because the schools encompass our future, this is where the discussion begins. In his 1975 book *Fifty-Four Landmark Briefs and Arguments of the Supreme Court of the United States,* U.S. Supreme Court Justice Thurgood Marshall helps place the importance and urgency of teaching digital citizenship in proper perspective:

> Education is not the teaching of the three R's. Education is the teaching of the overall citizenship, to learn to live together with fellow citizens, and above all to learn to obey the law.

Resources

Reports

Business Software Alliance. (2003). Internet piracy on campus. Available: http://www.bsa.org/customcf/popuphitbox.cfm?ReturnURL=/resources/loader.cfm?url=/commonspot/security/getfile.cfm&PageID=2396&CFID=88560&CFTOKEN=87295225.

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National Cyber Security Alliance. (2003). Fast and present danger: In-home study on broadband security among American consumers. Available: http://www.staysafeonline.info/press/060403.pdf

Ribble, M. S., & Bailey, G. D. (n.d.). *Steal this test!* Available: http://coe.k-state.edu/digitalcitizenship/CompassArt.pdf.

U.S. Department of Education, National Center for Education Statistics. (2003). *Computer and Internet use by children and adolescents in 2001.* Available: http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2004014

Web Sites

AddALL: http://www.adall.com
CNET.com: http://www.cnet.com
i-SAFE America: http://www.i-safe.org
Junior Achievement's Digital Citizenship materials: http://www.ja.org/programs/programs_supplements_citizenship.shtml
Mike Ribble and Gerald Bailey's Digital Citizenship Site: http://coe.ksu.edu/digitalcitizenship/
SERI's Special Needs and Technology Resources: http://www.seriweb.com/tech.htm
SNOW: http://snow.utoronto.ca/technology/products/
Special Needs and Technology: http://www.educationnews.org/special_needs_and_technology.htm
UCLA Ergonomics: http://ergonomics.ucla.edu/
World Wide Web Consortium: http://www.w3.org

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This is a supplement to "Digital Citizenship" by Mike Ribble et. al.

Further Resources

General

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Lessig, L. (1999). *Code: And other laws of cyberspace.* New York: Basic Books.

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Etiquette

Batista, E. (2003). New privacy menace: Cell phones? *Wired.* Available: http://www.wired.com/news/business/0,1367,57692,00.html.

Jackson, M. (2003, March 2). Turn off that cellphone. It's meeting time. *New York Times.* Available: http://www.nytimes.com/2003/03/02/business/yourmoney/02EXLI.html?ex=1063339200&en=3c1c4fad2b3a67ba&ei=5070. (***Editor's note:*** You must register at the *New York Times* Web site to access these articles. Registration is free.)

Communication

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Education

Cyber bullies target girl. (2003). Available: http://news.bbc.co.uk/1/hi/england/nottinghamshire/2933894.stm.

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Mackenzie, H. (2003). Stay home, highland laddie. *Wired.* Available: http://www.wired.com/news/culture/0,1284,59678,00.html.

Toppo, G. (2003, August 11). Who's watching the class? Webcams in schools raise privacy issue. *USA Today.* Available: http://www.usatoday.com/usatonline/20030811/5396054s.htm.

Access

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Security

Foderaro, L. W. (2003, Sept. 5). Man charged with raping girl he met on Internet. *New York Times.* Available: http://www.nytimes.com/2003/09/05/nyregion/05NET.html?th.

Fryer, W. A. (2003). A beginner's guide to school security. *Technology & Learning, 24*(2), 9.

Play It Cyber Safe: http://www.playitcybersafe.com/