Excerpted from

Digital Citizenship in Schools
Second Edition

Mike Ribble

Each day the world is becoming increasingly digital/ Your students begin to use more and more technology devices at home and in the classroom. But, are they prepared to be good digital citizens? Just as you teach your students the rules of society, it is imperative that you teach them the rules of the digital world, and how to be safe and responsible with technology. Mike Ribble shows you how in, *Digital Citizenship in Schools, Second Edition*.

Chapter 2, excerpted below, is an introduction to the nine elements of digital citizenship. Each element is defined, explained, and then followed up with examples of appropriate and inappropriate use. Ribble also brings awareness to issues around each element and also provides key words and website resources. These elements provide the framework for the rest of the book.

CHAPTER 2

The Nine Elements of Digital Citizenship

The nine elements of digital citizenship were identified after evaluating hundreds of articles, books, and news broadcasts related to technology use, misuse, and abuse. These nine elements focus on today's issues, though they have the flexibility to accommodate technology changes in the foreseeable future.

A Flexible Framework

The elements provide a framework for understanding the technology issues that are important to educators. They should be used to identify current areas of need in a school or district technology program, as well as emerging issues that may become increasingly important in coming years.

During the research process, I found that although some groups were talking about digital citizenship issues (the Motion Picture Association of America and Junior Achievement have both looked closely at digital copyright, and the University of Pittsburgh has focused on service learning), nowhere could I find was there a systemic review of all the different areas of digital citizenship covered in this book. This is why I believe that this conceptualization of digital citizenship is so important: instead of focusing on a single issue, I address the topic as a whole.

ESSENTIAL QUESTIONS

When reading through the themes, ask yourself these probing questions:

- Which of these issues most need to be addressed in my school or district?
- What issues will my school or district need to address in the next two to four years?

Answers to these questions will help identify which of the elements should be discussed first as areas of need.

In this chapter, each of the nine elements is defined and explained, and then further clarified with examples of appropriate and inappropriate behavior. I offer suggestions on recognizing a given element in the school or classroom and then provide scenarios that reinforce the concepts and behaviors involved.

I've also included some links to websites. These are provided as a place to start your own research; because websites often disappear without notification, because new and often better information gets posted, and because information on a site may not be updated regularly, the information included here may not fit your situation exactly. In addition, I've provided a list of keywords and phrases in each of the elements. Educators need to create a search strategy and use these keywords (as well as others they determine). Doing this will allow for flexibility for the future.

The nine elements provide a lens that technology leaders can use to focus their understanding of digital citizenship issues. Students are already using these technologies; now, school leaders and teachers need to provide them with resources for using them appropriately.

ELEMENT 1

Digital Access

DEFINITION: *Full electronic participation in society*

Technology provides opportunities for large numbers of people to communicate and interact very quickly. However, not everyone has access to all the tools of this new digital society. Because of socioeconomic status, disabilities, and physical location (among other factors), these opportunities are not equally available to all students or teachers.

Groups that are disenfranchised by lack of technology access include families who do not have the financial ability to have technology in the home, school districts that have too few computers for their students (while others have more than enough), and rural schools that lack access to high-speed Internet connections. Educators need to evaluate the use of computers within their schools. Do all students have access throughout the day to technology?

Teachers also need to encourage technology use in their classrooms. In schools where a majority of students do not have access to technology in the home, additional opportunities such as open computer labs, evening access to school libraries, and extracurricular activities should be offered to make up the difference.

Schools and districts need to be aware that some families may not have access to technology on a regular basis. When student information is provided online (e.g., through a parent portal of a student information system or forms on a website), be aware that not all will be able to access the information. When moving to online opportunities, (e.g., student enrollment online) other options such as kiosks, community centers, or open labs may be necessary.

ESSENTIAL QUESTIONS

Does everyone in your school have equal opportunities as far as technology use is concerned?

Do all students have the opportunity to be involved in a digital society?

There are other groups, such as special needs students, who might benefit from the use of technology but who do not have adequate access to the special tools designed for their use. Special needs students require special equipment to make the technology more accessible to them, and districts rarely have an adequate budget to acquire them. Schools and districts should ask themselves, "Are we preparing our students for a future with technology?" If this is a priority (and it should be), then planning for greater access for all students is a necessity.

Schools have been purchasing technology for years, but many schools still have inadequate resources. Even students who enjoy high-quality access at school may not be technologically literate enough to prepare for a future work world filled with technology. A study by the U.S. Department of Education in 2002 showed that only 41% of African American and Hispanic students were using a computer in the home compared with 77% of white students (Mark, 2003). The disparity between those who do and those who do not have access to technology in America is widening, but the issue is not simply a matter of race or socioeconomic status. This is also evident in a 2006 telecommunications report by the U.S. Government Accountability Office (2006), which showed that only 28% of U.S. households had high-speed access, with the rate in rural areas much lower than that of urban neighborhoods because of the need to be within three miles of a central office.

In the recent years the technology trends of minority groups (especially among people of color) have shown marked gains in Internet and broadband adoption. According to the Pew Internet & American Life Project, there has been almost a doubling of Internet use by users who are black or Latino (Smith, 2010b). While the numbers have improved, these groups still lag behind their white counterparts. One area where minorities tend to outpace whites is the ownership and use of cell phones. These groups tend to use many more of the

capabilities of cell phones (e.g., text messaging, social networking sites, and the Internet) than do whites (Smith, 2010a). As the trend begins to move more and more to mobile devices, there is a new opportunity for access by individuals and groups. Access will be an issue that will most likely need to be addressed in the very near future, and schools will need to decide whether and how they should become part of this equalization process.

Teachers and administrators need to understand that technology will be important to the future of all students, not just a chosen few. By being more aware of these access issues, schools can explore and advocate for meaningful initiatives such as one-to-one computing (in which all students are given access to a computer) or BYOD—"bring your own device" (where students can bring their devices from home to use in the classroom). Some communities have even gone so far as to provide wireless connections for all members of the community.

Digital Access Issues

- Equitable access for all students
- Accommodations for students with special needs
- Programs for increasing access outside schools

Examples of Inappropriate Digital Access

- Schools ignore or overlook the digital needs of disenfranchised groups (e.g., not viewed as important).
- Teachers fail to accommodate students who do not have access to technology.

Examples of Appropriate Digital Access

- District administrators work toward providing technology opportunities for all students within their schools.
- Technology leaders provide technology to students for use in school and out, such as a one-to-one laptop program.

Digital Access Keywords

- digital divide
- technology and the disabled
- technology access
- technology and minority groups
- digital dirt road divide

Digital Access Scenario

Urban School District's technology coordinator, Mr. Jones, and the school superintendent, Mr. Smith, want to streamline their information gathering efforts. They would like to have parents complete all school forms online.

Inappropriate. Mr. Jones and Mr. Smith send the new policy out to all parents, notifying them that paper forms will no longer be used. They explain that paper copies will not be distributed because the required forms are readily accessed on the school district's website. A number of parents bitterly complain because they do not have regular access to computers. Mr. Jones and Mr. Smith are puzzled because it seems to make the process easier and faster.

Appropriate. Mr. Jones and Mr. Smith discuss requiring parents to complete information online. They conduct a survey to determine how many parents have computer access at home. When reviewing the results, it is clear that students belonging to some minority groups have fewer opportunities to access these resources than other groups. Mr. Jones and Mr. Smith conclude that keeping forms on the school district website is a positive step forward, but that they should keep both options—electronic and paper. They begin to strategize about ways to make technology available to all groups in their school district.

What could make a difference. When using technology, leaders should think about their student population. Some schools may have a large population of technology users, while others may not. They should not forget to consult parents and other community members before requiring that something be done exclusively online.

Web Resources for Digital Access

Public Broadcasting Report on the Digital Divide (archive):
www.pbs.org/teachers/learning.now/digital_divide/

UCLA's The Digital Divide: A Resource List:
www.gseis.ucla.edu/faculty/chu/digdiv/

U.S. Department of Education Reports on the Digital Divide:
www2.ed.gov/Technology/digdiv.html

ELEMENT 2

Digital Commerce

DEFINITION: *The electronic buying and selling of goods*

Digital commerce is often the most difficult element of digital citizenship for educators to address in the classroom. Teachers may believe it is not their responsibility to teach students to be informed, careful consumers (except in certain business courses). However, online purchasing has become an important factor in students' lives. According to Harris Interactive, in 2009 America's youth ages 8–24 (Generation Y) spent $220 billion online. Digital commerce plays a large role in students' lives, so they need to understand all aspects of these online transactions.

Learning to become an intelligent consumer is an important aspect of good citizenship. Unfortunately, it is not uncommon for students to go online and purchase items without thinking about the consequences. Often, the consequences extend beyond accumulation of debt. For example, not knowing how and where to buy items online can leave kids vulnerable to Internet scams and identity theft. If teachers hope to prepare students for the rest of their lives, digital commerce is an important issue that needs to be addressed.

ESSENTIAL QUESTIONS

Are students aware of the opportunities as well as the problems associated with purchasing items using digital technology?

Should students be made more aware of how to purchase goods and services through digital formats?

Students use Internet resources to learn about items they want to purchase, and (increasingly) to buy those items directly online. This practice has been steadily increasing over the last decade. In the Pew Internet & American Life Project report Social Media and Young Adults, nearly half (48%) of online teens purchase books, clothing, or music online (Lenhart, Purcell, Smith, & Zickuhr, 2010). Even with the increase of online purchasing, all Internet users need to learn to be discerning online customers. Many are unsure about how to shop for the best deal, and many more do not know about the hazards of providing sensitive information (such as credit card numbers, bank numbers, or other personal data) to insecure sites. Because using online tools, mobile technology, and social networking to purchase items is rapidly becoming the norm, students should be taught to understand this process.

Digital commerce may not seem to be a particularly important issue for teachers and technology leaders, but it is keenly important for their students. One of the goals of education is to create educated members of a society, thus this is an important skill. Anyone who is actively working, playing, or purchasing items online is a member not only of a digital community but of an economic community as well.

Students need to understand that their actions online can follow them throughout their life (e.g., ruining their credit by running up large credit card debt). If teachers are to help prepare their students to be good citizens, they need to prepare them for interacting in a digital economy.

Digital Commerce Issues

- Online buying through commercial sites, auction sites, and other Internet locations
- Online selling through auction sites and other Internet locations
- Media subscriptions and purchases made through media software such as iTunes
- Buying and selling "virtual merchandise" for online games

Examples of Inappropriate Digital Commerce

- Students purchase goods online without knowing how to protect their identity (leaving them open to identity theft).
- Students fail to realize that poor online purchasing practices lead to poor credit ratings.

Examples of Appropriate Digital Commerce

- Students become informed consumers so they can safely purchase items online.
- Students spend the time to research what they want to purchase, then take the time to identify "safe" sites with the best prices.

Digital Commerce Keywords

- online shopping
- online auction policies
- technology and identity theft
- technology and credit issues

Digital Commerce Scenario

Liz is using the Internet to buy decorations for the homecoming dance. She is unsure of what exactly she is looking for, but wants something that looks nice. She has a limited budget, and she is not really sure what quality decorations might cost.

Inappropriate. Liz finds many decoration options when searching the Internet but none are in her price range. Finally, she finds a website where many of the decorations are 50% less than what she has found on other websites. She immediately puts in an order without researching the company or determining whether her information is secure on that website.

Appropriate. Liz discusses online shopping with her friends and teachers before making a purchase online. They advise her to spend some time researching online merchants and making sure they are secure and legitimate before buying anything from them. She finds a website where the decorations are 50% less than what she sees at other websites. After some research, however, she realizes that this website does not belong to a reputable company. More important, they do not have a secure website for payments. She finds some decorations that are a little more expensive from another company's website. They have a good reputation, with high ratings from previous users. Liz completes her purchase without any complications.

What could make a difference. By interacting with others and discussing the appropriate way to shop online, this student can find what she is looking for and buy it from a reputable dealer. Too often, users just stop at the first site that looks like it will fulfill their needs. To protect against identity theft, users also need to be aware of who can see their information online.

Web Resources for Digital Commerce

Surfing the Net with Kids:
www.surfnetkids.com/go/safety/186/safe-online-purchasing-practices/

Get Safe Online:
www.getsafeonline.org/nqcontent.cfm?a_id=1121

ELEMENT 3

Digital Communication

DEFINITION: *The electronic exchange of information*

Cell phones, social networking, and texting have changed the way people communicate. These forms of communication have created a new social structure governing how, when, and with whom people interact.

Digital communication provides users with instant access to others on an unprecedented level. Many businesses prefer using email over a phone call because email provides a record of the message. But there are consequences to this built-in record-keeping feature. Users forget that even though they may delete a message it is usually stored on a server or is backed up for future review. This means users need to think about what they say when using email. This is the same for many other communication methods like texting and social networking sites: even after the information is deleted it continues to "live on" in cyberspace. Any of these technologies can be used inappropriately. Too often, people send emails, texts, or posts without considering who might see them or how they might be interpreted. It is easy to write the first thing that comes to mind and then send it before considering the long-term consequences. In some situations speaking to someone face-to-face can solve a situation faster than multiple emails or other communication methods.

Cell phones allow for mobile personal communication. Many parents now believe their children must have a cell phone—they want to be able to reach their children at all times (Selingo, 2004). But many teachers and administrators see cell phones at school as a major distraction and catalyst for behavioral problems. This is a significant issue for schools and for society in general. Cell phone technologies provide many advantages and freedoms, but we need to weigh that freedom against the responsibility that comes with it, and carefully consider how we teach that responsibility.

Educators face difficult decisions concerning the use of these digital communication technologies in their schools. Cell phones, texting, and social networking can be seen as inappropriate in schools. But are they? The question is, how do these communication methods fit in an educational setting? What positive outcomes do they enable? What potentially negative effects must be mitigated, and how? With these many communication methods, what kind of "digital footprint" (information provided in cyberspace about someone) is being left behind? If these technologies are banned in schools, what message does that send to our students who have access to these devices outside of school? Sites and districts need to assess the extent of the educational values these communication methods and devices provide. Once technology leadership teams determine those values (if any), they also need to decide how to teach students appropriate use of this technology.

ESSENTIAL QUESTIONS

Do I use email, cell phone, texting, and social networking technologies appropriately when communicating with others?

What rules, options, and etiquette do students need to be aware of when using digital communication technologies?

Is there a need to be in contact with other people all the time? Do users understand what is appropriate when communicating with other technology users? These are questions that parents, teachers, and administrators need to work together to answer. These technologies are inherently neither good nor bad—it's only use that makes them so—so there is no universal solution to these questions. Digital citizenship provides the framework to help decision makers in schools, sites, and districts to better understand and address these questions.

Digital Communication Issues

- Email
- Cell phones
- Personal video calls (Skype)
- Instant messaging
- Text messaging
- Blogs
- Wikis
- Social networking

Examples of Inappropriate Digital Communication

- Students text during class time.
- Students use text messaging and email shorthand for class assignments when asked to give complete answers.
- Students use text messaging to cheat on tests.

Examples of Appropriate Digital Communication

- Students and teachers use digital communication devices when they will not interrupt what is going on in the school or classroom.
- Digital communication technologies such as social networking sites are used to support student activities in the classroom, such as sharing ideas or writings with others.
- Teachers use blogs to inform parents of classroom activities.

Digital Communication Keywords

- appropriate email use
- texting issues
- cell phone etiquette
- choosing technology communication models

Digital Communication Scenario

Mrs. Baxter, a language arts teacher, explores new, innovative ways for students to write essays in class. She finds a website that describes how teachers can use blogs to help students post their thoughts and ideas on the web. She decides to set up a blog for her students.

Inappropriate. Mrs. Baxter tells her students to navigate to her blog website and record their ideas. She describes the assignment as diary-like writing. After a couple of days, she finds inappropriate postings (e.g., discussions of boyfriends and girlfriends), but she cannot identify the authors. After a week, she shuts down the blog and decides that blogging was a bad idea.

Appropriate. Mrs. Baxter speaks to her class about the process of blogging. She illustrates examples of suitable comments and emphasizes the importance of appropriate use. After a couple of weeks, the students are responding almost every day, and they are coming to class with more in-depth questions that relate to concepts being discussed in class.

What could make a difference. Teachers need to research the use of technology before using it in their classrooms. Just hearing about something that someone else has used in class does not always mean that it will work. Teachers should check around and ask questions about what the technology can and can't do.

Web Resource for Digital Communication

Additional research can be found on many topic areas related to digital communication at the Pew Internet research site: www.pewInternet.org

ELEMENT 4

Digital Literacy

DEFINITION: *The process of teaching and learning about technology and the use of technology*

One of the most important aspects of technology is understanding how that technology works so that it can be used in the most appropriate manner. Although many agree this is important, it is often overlooked. How many people were "taught" how to use a cell phone while they are in the cellular store or kiosk? This is becoming even more of an issue for education. Technology-infused learning is becoming more commonplace every year and is becoming as transparent as the chalkboard and pencil. However, teaching how to use technology appropriately has not kept pace. Learning with technology does not always include instruction on appropriate and inappropriate use. Too often, the focus is on learning the technology itself, with little time given to discussing what is or isn't appropriate.

ESSENTIAL QUESTIONS

Is enough time devoted to learning how to use the technology tools in the classroom?

How can students use digital technologies to take best advantage of the educational opportunities available to them?

Schools have more technology than ever before. According to Duncan's (2010) National Educational Technology Plan, the tools needed by students are moving beyond the computer, laptop, netbook, or smartphone to the cloud. As these technologies move away from the tools we have known, it will become even more important for users to understand how laptops, smartphones, and tablets can be part of their school's curriculum.

Even when digital technologies are readily available, too often teachers have not had adequate professional development on how to use the technology. As a result, teachers have few ideas or plans on what they could do with it in their classrooms (beyond typing papers or doing Internet searches). Teachers need time to learn how to use technology to stimulate student learning. Teachers and districts need to become partners in providing appropriate technology resources. The school's and the district's information technology staffs need to work together to identify appropriate tools for the classroom. What's more, many educators continue to use outmoded concepts and practices in teaching students. In response, students are leaving traditional educational institutions and choosing more innovative ways to learn, which include online learning. Some districts with large numbers of students leaving have been forced to implement their own distance education programs.

With new technologies at their fingertips, students are asking for new ways to learn. Educators should be encouraged to look at alternative ways of presenting information that can engage these students. Schools and districts have the opportunity to create a new age of education and the time begins now.

Digital Literacy Issues

- Learning the digital basics: browsers, search engines, download engines, and email
- Evaluating online resources (determining the accuracy of content on websites and wikis, assessing the trustworthiness and security of online vendors, recognizing phishing attacks, and so on)
- Exploring and developing online learning modes and distance education

Examples of Inappropriate Digital Literacy

- Students choose alternative educational opportunities because their school or district does not offer online classes or a distance education program.
- Teachers do not provide resources and materials that students can get from digital sources (e.g., blogs, websites, podcasts).

Examples of Appropriate Digital Literacy

- Students take online courses (or mixed delivery—part face-to-face, part online) that are designed to keep them interested in the material.
- Teachers use digital technologies in new and innovative ways, such as creating content for the web that can be accessed by students away from the classroom.

Digital Literacy Keywords

- technology education
- online education
- learning computer hardware/learning software
- understanding technology

Digital Literacy Scenario

John is a sophomore at North High School. John is not interested in sitting in a classroom all day to hear boring lectures about information that he does not care about. He enjoys working on his computer at home doing creative projects such as digital animation.

Inappropriate. John decides to drop out of high school and just spend his time creating animation on a freelance basis. After awhile he gets tired of looking for freelance work and tries to get a job as a computer programmer. John keeps getting rejected, not because of his skills, but because he does not meet the companies' basic educational standards.

Appropriate. John talks to his parents about his disillusionment and frustration in attending school. He and his parents meet with the high school counselor, who tells them about a new online school the district is creating. The counselor tells John that he can work at his own pace from his computer and can finish his class work from home, allowing him to continue creating animation in his free time.

What could make a difference. Students need to understand that certain technology skills are critical when entering the work world—just "liking" technology is not enough. We all need to understand how a given technology works and how to use it appropriately.

Web Resources for Digital Literacy

Center for Digital Education:
www.centerdigitaled.com

Center for Media Literacy:
www.medialit.org

Consortium for School Networking:
www.cosn.org

Mid-continent Research for Education and Learning:
www.mcrel.org/topics/EducationalTechnology

Scenarios for Teaching Internet Ethics:
www.uni.illinois.edu/library/computerlit/scenarios

U.S. Department of Education—Office of Educational Technology:
www2.ed.gov/about/offices/list/os/technology/

ELEMENT 5

Digital Etiquette

DEFINITION: *The electronic standards of conduct or procedure*

Responsible digital behavior makes every user a role model for students. Students watch how others use a technology and assume if others can use it in that manner, so can they. The problem with teaching digital technology is that few rules have been established for the proper use of these devices. The proliferation of new technologies has created a steep learning curve for all users. Some users are more adept and in tune than others, and those who lag behind often do not understand the subtle rules that have emerged among early adopters.

ESSENTIAL QUESTIONS

Are students aware of others when they use technology?

Do students realize how their use of technology affects others?

In the past, it was up to parents and families to teach basic etiquette to their children before they reached school. The problem with the new technologies is that parents have not been informed about what is appropriate and what is not. Very often, parents and students alike are learning these technologies from their peers or by watching others use the technology. School technology teams are in a better position to teach kids appropriate digital etiquette.

This can be a difficult process for both students and their parents. Behavior that may be considered poor digital etiquette by older users may be viewed very differently by students. According to a Cingular Wireless survey on mobile phone etiquette, 39% of users said they would answer a ringing phone while having a face-to-face conversation (Greenspan, 2003). In the past, it was polite to excuse oneself from a conversation before doing something else, but today those rules have been bent almost to the breaking point. And with new uses of the technologies (such as texting and social networking) it makes the process even more difficult.

When students see adults using technologies inappropriately, they assume that this is how they should act. This leads to more inappropriate technology behavior. This cycle must be broken soon, as more technologies are coming along and making this process even more difficult. The new technology tools can be seen on TV and in movies, and their use has become mainstreamed. With the lens of digital citizenship, people can evaluate their own technology use, as well as technology use by others. A good digital citizen seeks out feedback from others to evaluate their use of technology, and then makes personal adjustments based on this feedback.

As members of a digital society, we are asked to do what is best for the larger group. To do this, we must think about how our technology use affects others. Good digital citizens respect others and learn ways to use technology courteously and effectively.

Digital Etiquette Issues

- Using technology in ways that minimize the negative effects on others
- Using technology when it is contextually appropriate
- Respecting others online: not engaging in cyberbullying, flaming, inflammatory language, and so forth

Examples of Inappropriate Digital Etiquette

- Students use cell phones to text in class on topics that are not class-related.
- Students communicate on a social networking site without knowing the rules or responsibilities.

Examples of Appropriate Digital Etiquette

- Students work with their teachers to understand what information can be shared from their cell phones or netbooks and when it is appropriate to do so.
- When communicating in a chat room, users learn the rules of the group before becoming involved in the conversation.

Digital Etiquette Keywords

- technology etiquette
- netiquette
- Acceptable Use Policies (AUP)

Digital Etiquette Scenario

Mr. Sheridan, a high school principal, is expecting an important phone call from the superintendent's office this evening. However, he also expected to attend the school play.

Inappropriate. When entering the auditorium, Mr. Sheridan begins to talk to several parents and forgets about the impending phone call. During the play, his cell phone rings loudly. Parents and students begin looking at Mr. Sheridan as he struggles to answer his phone. Because he is flustered by the call, he begins the conversation before he exits the auditorium.

Appropriate. Knowing he does not want to disturb the performance, Mr. Sheridan puts his cell phone on vibrate. In the middle of the second act, the phone vibrates. Mr. Sheridan quickly leaves the auditorium and conducts the conversation in a private location.

What could make a difference. By training ourselves to think about how technology might affect others, we can start to make better decisions. We also need to give others the permission to provide us with constructive criticism on how we use our own digital technology.

Web and Print Resources for Digital Etiquette

WiseGeek—What is Cell Phone Etiquette?:
www.wisegeek.com/what-is-cell-phone-etiquette.htm

National Science Foundation—Ethics and Computing:
www.nd.edu/~kwb/nsf-ufe/

Phoneybusiness.com—Mobile Etiquette:
http://phoneybusiness.com/etiquette.html

A good collection of essays on the ethics and use of technology is Deborah G. Johnson and Helen Nissenbaum's book, *Computers, Ethics & Social Values*, (2006).

ELEMENT 6

Digital Law

DEFINITION: *The electronic responsibility for actions and deeds*

The Internet has made it easy to post, locate, and download a vast array of materials. Indeed, this ability to share information easily is one of the strengths of the Internet. However, users often do not consider what is appropriate, inappropriate, or even illegal when posting or accessing information on the Internet. Users often remark, "We did not think it was wrong—all we were doing was sharing information." The issues of intellectual property rights and copyright protection are very real, and have very real consequences for violations.

These issues were brought to the forefront when the Recording Industry Association of America (RIAA) fined students and others for downloading music illegally (Wired News, 2003). This action caused some technology users to think twice about what is appropriate and illegal for online file sharing. However, in 2009 a three-year compilation of 16 countries by the International Federation of the Phonographic Industry (IFPI) found that 95% of music files were illegally shared (IFPI, 2009). Ironically, a 2003 survey conducted by Ipsos (a market research company) for Business Software Alliance indicated that two-thirds of college faculty and administrators said it is wrong to download or swap files while less than one-quarter of students felt the same way (CyberAtlas, 2003).

ESSENTIAL QUESTIONS

Are students using technology the way it was intended?

Are students infringing on others' rights by the way they use technology?

Should students using digital technologies be accountable for how they use digital technologies?

The new digital technologies are bringing with them a whole new realm of issues that most likely were not imagined by their creators. Often these issues arise from unforeseen and unintended uses of the new technology. For example, the issue of sexting (the taking and sharing of sexually explicit materials, such as nude or semi-nude pictures) has become huge for teens. If the participant is under the age of 16, this can be considered child pornography even if the sender is a willing participant or has sent a self-portrait. If this material is received by a phone (or other device), the person who owns the device can be criminally charged for just having the material (even if that person didn't want it in the first place). Whoever sends the pictures to others can be arrested for the distribution of child pornography (again, even if underage persons take and send pictures of themselves). Conviction for one of these crimes can ruin someone's reputation permanently, and will require that the person register as a sex offender. Each state and country is different, but many have already passed such laws. Even if the laws in your area do not yet cover sexting as a crime, the recipients (or sender) may be in an area where such laws do apply.

Helpful Tip

The legal aspects of student technology use can be a major concern for school administrators. Technology leaders and teachers need to provide resources to help administrators make good decisions. Likewise, teaching students how to make good choices helps not only the students, but the school administrators. Students need to realize that what they do today may affect them in the future.

There will always be people who do not follow the rules of society and who engage in activities that run counter to the ideals of society as a whole. In this regard, digital society is no different. As such, consequences are being established for those who act as inappropriate digital citizens—users who steal others' information, hack into servers, create and release viruses, and so on. As new laws are being drafted, it is important that digital citizens help to decide how to address these activities as they occur. If members of the digital society do not provide information to help determine these good-citizenship policies, the laws passed by politicians will not reflect a good understanding of digital society.

Laws related to technology use are becoming more of an issue for school districts. Even though issues may occur outside the school walls or not on school computers, the effects may still need to be addressed during the school day. Administrators need to provide teachers and students with resources and guidance on what is legal and illegal.

They also need to determine whether their technology rules and policies are supported legally. Digital citizenship helps all technology users become more aware of the legal ramifications of technology use.

Digital Law Issues

- Using file-sharing sites
- Pirating software
- Subverting Digital Rights Management (DRM) technologies
- Hacking into systems or networks
- Stealing someone's identity
- Sexting and sharing of illicit photos

Examples of Illegal Technology Use

- Students download copyrighted music from social networking or file-sharing sites (e.g., Kazaa).
- Students scripting (using computer code) to bypass firewalls or other network protection.

Examples of Legal Technology Use

- Students understand what can be downloaded without charge and what is considered copyrighted material and should be paid for.
- Students inform an adult of others sharing nude or semi-nude photographs (sexting).

Digital Law Keywords

- technology copyright laws
- Person-to-Person software (P2P)
- software piracy

Digital Law Scenario

Patrick keeps himself very busy. He goes to school, plays on the football team, and has a part time job. Tonight Patrick's boss has asked him to work a little later, and he does not get home until 11 p.m. He realizes that he has a paper due the following morning for his English class. He sits down at his computer and thinks about the time he will need to put into getting a good grade on the paper. He goes to the Internet to do some research and finds the exact information that he needs. All he has to do is copy and paste the information.

Inappropriate. Patrick decides to copy the information from the website and quickly finish the paper. He hands in the paper to his English teacher the next day. The teacher reminds the class that she is using the site TurnItIn.com to check papers for plagiarism. Because Patrick copied the information word for word, he is sure he will be caught.

Appropriate. Patrick decides to work on the paper and cite the source from the website. Because the assignment was rather lengthy, he talks to the teacher before class to explain his situation. The teacher gives Patrick an extra day to finish his paper.

What could make a difference. Teachers must carefully explain to students that, although the Internet is a good source of information, material should not to be taken from it without citing the source. Students need to know that some websites are not as credible as others, and need to be careful of the information they find. Students should look at several sources to confirm the information they find.

Web Resources for Digital Law

The Free Expression Policy Project—Media Literacy: An Alternative to Censorship:
www.fepproject.org/policyreports/medialiteracy.html

Law Research—Internet Law:
www.lawresearch.com/practice/ctwww.htm

Ethics in Computing—Technology and Ethics:
http://ethics.csc.ncsu.edu/basics/

United States Department of Justice—Computer Crime & Intellectual Property Section:
www.cybercrime.gov

ELEMENT 7

Digital Rights and Responsibilities

DEFINITION: *Those requirements and freedoms extended to everyone in a digital world*

When discussing the membership within a group, people often note that certain rights or privileges come with membership in that group. When someone is given membership rights, there is an assumption that the person will act in accordance with the rules that govern that group. This is true for digital society as well, in which membership allows users to use digital content while enjoying certain protections. In the digital world, users should expect that if they post information to a site (whether it is a poem, a picture, a song, or some other form of original research or creative expression), others will enjoy it without vandalizing it, passing it off as their own, or using it as a pretext to threaten or harass.

ESSENTIAL QUESTIONS

What rights and responsibilities do students have in a digital society?

How do we make students more aware of their rights and responsibilities when using digital technologies?

Being a full member in a digital society means that each user is afforded certain rights, and these rights should be provided equally to all members. Digital citizens also have certain responsibilities to this society; they must agree to live according to the parameters that are mutually agreed upon by members. These boundaries may come in the form of legal rules or regulations, or as acceptable use policies. In a perfect world, those who partake in the digital society would work together to determine an appropriate-use framework acceptable to all. The alternative is to have laws and rules thrust on them.

Helpful Tip

Use scenarios to help draw attention to what is happening in the school and classroom. Encourage students to provide examples of technology use and discuss what might be considered appropriate or inappropriate.

Through the guiding principles of digital citizenship, we offer a means to achieve appropriate behavior in a digital society. This is not just pie-in-the-sky idealism. Some technology companies including Google already adhere to basic good-citizenship tenets, such as "do no harm." If schools are to help form a strong digital citizenry, then such values need to be taught to students, as they will be the next generation of digital technology users. Now is the time to provide a structure for technology use for a digital society. Digital citizenship can help create the framework, but school technology teams will have to come together to determine how their organizations will handle unsociable digital behavior. Students need to be given a clear understanding of the behavior that is required of them to be members of the digital society.

When creating or publishing anything, students should be allowed to protect those works (or not) as they see fit. Digital citizens should have the right of ownership of their work. They should also have the right of free speech in the truest sense: If they wish to make their creations freely available to the entire world, they should be allowed to do so.

Rights and responsibilities are sometimes difficult to define. Users need to understand the difference between what is possible for the individual and what should be done for the good of the group. By adhering to the structure of digital citizenship, the vast majority of users will enjoy the benefits of digital technology because they will understand that there can be rights in a society only if there are also responsibilities.

Digital Rights and Responsibilities Issues

- Following acceptable use policies and using technology responsibly both inside and outside school
- Using online material ethically, including citing sources and requesting permissions
- Using technology to cheat on tests and assignments
- Reporting cyberbullies, threats, and other inappropriate use

Examples of Inappropriate Digital Rights and Responsibilities

- Students use material from the Internet without properly citing the source.
- Students violate their school's AUP because they view it as unfair.

Examples of Appropriate Digital Rights and Responsibilities

- Students cite websites or other digital media sources when using information for class projects.
- Educators inform students of their rights when using digital technologies, but also instruct them on their responsibilities.

Digital Rights and Responsibilities Keywords

- understanding technology rules
- helping others online

Digital Rights and Responsibilities Scenario

Mrs. Jones is the principal of the local high school. Her technology coordinator, Mr. Young, comes to Mrs. Jones and indicates that he sees students accessing pornographic websites. Mr. Young says that he has a demo of an inexpensive web filter that could be used to solve the problem.

Inappropriate. Mrs. Jones agrees that students need to be prevented from accessing these inappropriate sites at school. She tells Mr. Young to purchase the software and put it on the network. A month later, a teacher comes to Mrs. Jones and says that students are unable to access specific research sites on the Internet. The teacher has spoken to the technology coordinator, who says that Mrs. Jones approved the purchase of the software without informing the staff. Several teachers are upset because their students are working on legitimate projects, but access to critical sites is being blocked.

Appropriate. Mrs. Jones asks the technology coordinator to gather information about this web filter as well as other options that could be implemented. She indicates that this information will be brought to the school's technology committee for discussion and approval. Mrs. Jones puts this issue on the next month's agenda for discussion. At the meeting, the technology committee recommends the software purchase as well as staff development for everyone who will be affected by the web filter.

What could make a difference. School administrators, technology committee members, and faculty need to work together to educate students effectively on digital rights and responsibilities. By discussing the issues, all sides can understand why decisions are made. This approach can also generate new ideas for supporting digital citizenship in the classroom.

Web Resources for Digital Rights and Responsibilities

National Educational Technology Plan:
www.nationaledtechplan.org

Partnership for 21st Century Skills:
www.p21.org

Privacy Rights Clearinghouse:
www.privacyrights.org

ELEMENT 8

Digital Health and Wellness

DEFINITION: *Physical and psychological well-being in a digital technology world*

Students need to be aware of the physical dangers inherent in using digital technology. According to Alan Hedge, director of the Human Factors and Ergonomics Research Group at Cornell University, "… carpal tunnel syndrome isn't the only injury to worry about when working at a computer" (Manjoo, 2003, para. 10). Eyestrain and poor posture are not uncommon in digital technology-related activities.

Too often, technology safety concerns relate only to the security of equipment and not the physical well-being and security of students. Sometimes computers are set on tables that are too high or too low for younger users. Adults should not hope that students will simply adapt to the surroundings, nor should they think that students will stop using a given digital device before it causes problems.

ESSENTIAL QUESTIONS

How can students be physically affected by technology?

Are students aware of the physical dangers that can accompany the use of digital technology?

How else can someone become injured using technology?

In addition to the physical dangers, another aspect of digital safety that is receiving more attention is the topic of "Internet addiction." It's a double-edged problem: Not only do users become dependent on the online experience, but they may also irreparably harm themselves physically. Taken to its extreme, Internet addiction can cause both psychological as well as physical problems. This is an issue that is being recognized around the world. Some addiction experts are finding that the withdrawal symptoms associated with Internet addiction are similar to those of alcoholics.

To prevent various technology-related physical injuries, educators need to encourage students to use technology in a responsible way. Making sure that all computer workstations are ergonomically sound is one way to protect students from long-lasting problems related to technology use. But even beyond the physical aspects, adults need to be aware of the amount and type of technology used by students.

Digital Health and Wellness Issues

- Using proper ergonomics and avoiding repetitive motion injuries
- Becoming addicted to the Internet or to video games and withdrawing from society

Examples of Inappropriate Digital Health and Wellness

- Administrators and teachers ignore the possible harmful physical effects of technology on students.
- Teachers do not model proper ergonomics when using technology.

Examples of Appropriate Digital Health and Wellness

- Technology leaders learn how to promote health and wellness with technology.
- Teachers model digital safety in their classrooms and expect their students to do the same.

Digital Health and Wellness Keywords

- technology addiction
- technology and good health
- computer ergonomics

Digital Heath and Wellness Scenario

Rob, a junior at Anyschool High, has enjoyed using the computer since fifth grade. When he entered high school, his parents purchased a laptop for him. Rob is able to take it to school and use it in his room; he can work on it wherever he wants. Rob uses his computer several hours a day in awkward positions. Lately, he has been noticing pain in his lower arms and wrists. At first, the pain wasn't bad; now, it has become increasingly painful to use his keyboard.

Inappropriate. Rob does not tell his parents because he knows that they will take him to the doctor. He is afraid the doctor may want him to decrease the amount of time he spends on the computer and will tell his mom to restrict his computer privileges.

Appropriate. Rob is concerned about losing computer privileges because he is sure that keyboarding is causing his physical pain. He decides to tell his mother about the pain anyway, and she takes him to the doctor. The doctor indicates that there is some inflammation but no major damage. The doctor teaches Rob a set of exercises to avoid repetitive stress syndrome that he can use while at home or school. Rob models these techniques to his computer teacher. The computer teacher decides to have students in class practice these exercises during class.

What could make a difference. The physical and psychological aspects of using technology should not be overlooked. As students start to use digital technologies at ever-younger ages, parents and teachers need to be aware of health issues that might occur. By keeping these issues in mind, teachers and parents can identify and resolve problems earlier.

Web Resources for Digital Health and Wellness

The Center for Internet Addiction Recovery:
www.netaddiction.com

Computer Ergonomics for Elementary Schools:
www.orosha.org/cergos/

University of Nebraska–Lincoln Engineering Electronics Shop—Computer Related Repetitive Strain Injury:
http://eeshop.unl.edu/rsi.html

U.S. Department of Labor—Computer Workstations Checklist:
www.osha.gov/SLTC/etools/computerworkstations/checklist.html

ELEMENT 9

Digital Security

DEFINITION: *The electronic precautions to guarantee safety*

As more and more sensitive information is stored electronically, a correspondingly robust strategy should be developed to protect that information. At the very least, students need to learn how to protect electronic data (e.g., using virus protection software, erecting firewalls, and making backups).

The idea of protecting what we have should not be foreign to anyone. We put locks on our doors, mount smoke detectors in our homes, and install security systems designed to protect our families and possessions. As a repository of personal information, a personal computer should have as many (if not more) security features as the home that surrounds it. Why should anyone go to the trouble of installing these additional protections? Because technology intruders do not break in through the front door—they hack in through your Internet connection. Any computer that does not have virus protection (with up-to-date virus definitions) is vulnerable. Any computer connected 24/7 to the Internet without firewall protection is defenseless against a snooper on the prowl. Having a wireless network without encryption is tantamount to offering free access to any and all comers.

ESSENTIAL QUESTIONS

How do students protect their technology in a digital society?

How can students be taught to protect themselves and their equipment from harm?

More often than not, security faults occur not because of flaws in the equipment but because of the ways people use it. We give away our passwords without thinking of the consequences. We do not take the time to speak to our children about the possible dangers of meeting people on the Internet. Young people often view strangers on the

Internet as potential friends they have not yet met (Gross, 2009). Too often, students correlate their social status in the digital world with the number of online "friends" they have linked to their Facebook or MySpace pages.

Many hackers are very good at what they do. Professional-looking *phishing* (using an email or other message to try to get a user to send sensitive information to a hacker) programs ensnare users every day. It is up to users to be diligent in protecting their information.

Protecting one's equipment is not just a personal responsibility—it also helps protect the community. By keeping virus software up-to-date, for example, viruses will not get passed along to infect others as easily. However, digital security goes beyond protecting equipment. It includes protecting ourselves and others from outside influences that might cause harm.

Digital Security Issues

- Protecting hardware and network security
- Protecting personal security: identity theft, phishing, online stalking
- Protecting school security: hackers, viruses
- Protecting community security: terrorist threats

Examples of Inappropriate Digital Security

- Teachers or students fail to maintain current software updates or patches that protect their computers from viruses and exploitation.
- Students fail to protect their identity when using email, social networking, or text messaging.

Examples of Appropriate Digital Security

- Users take the time to make sure their virus protection and firewalls are properly updated and configured to protect personal information.
- Teachers and parents talk to students about the dangers of providing information to anyone over the Internet.

Digital Security Keywords

- technology protection
- spyware/adware
- data backup
- firewall
- technology disaster protection

Digital Security Scenario

Adam's school provides email accounts to all students. Adam is afraid that he might forget his password and writes it down in his notebook. One day during class he is called to the counseling office. He leaves his books in class and goes to the office. When he gets back, he sees his notebook open to the page with his password.

Inappropriate. Not thinking anything about it, Adam gathers his books and goes to his next class. The next day, he is called to the office to see the assistant principal, who informs him that another student has reported receiving a threatening email from his account. The student receiving the email did not know Adam and was not sure why he had sent the email. Adam tells the assistant principal that he did not send the email and that someone else must have his password.

Appropriate. Adam is concerned that his notebook was open to the page with his password. He immediately goes to a computer, logs in, and changes his password. Adam decides that he needs to keep his password in a more secure location.

What could make a difference. Students need to be aware that their password is the key to their digital identity. Students should understand that leaving passwords and other personal information out where others can see them might allow others to use their accounts for inappropriate behavior. Passwords should be kept in secure places or memorized to keep them safe.

Web Resources for Digital Security

Center for Safe and Responsible Internet Use:
http://csriu.org

Educational CyberPlayGround:
www.edu-cyberpg.com/schools

Educator's Guide to Computer Crime and Technology Misuse:
www.uni.uiuc.edu/~dstone/educatorsguide.html

Understanding the Elements

The nine elements of digital citizenship are not simple, stand-alone issues. They relate to each other in a dizzying variety of ways. To help teachers and technology leaders better understand how these different elements interconnect, they have been grouped into three categories based on their immediacy to the typical school environment. These categories combine the elements that:

- directly affect student learning and academic performance,
- affect the overall school environment and student behavior,
- affect student life outside the school environment.

When digital citizenship is framed in this manner, teachers and technology leaders can approach it in a way that can have an immediate effect on their school's or district's use of digital technologies (see Figure 2.1).

So where should schools begin? How do technology leaders and teachers decide what to work on first? The first priority of any digital citizenship program will depend entirely on what is currently in place in the district or school. If a school has issues with basic knowledge of new technologies (such as texting or social networking) perhaps student learning and academic performance will be a priority. If a school is having issues with cyberbullying, maybe the priority will be on the overall school environment and student behavior. If students are exhibiting physical or psychological problems related to overuse of technology, then perhaps the initial focus of the program should be on student life outside the school environment.

A Closer Look at Technology in Schools

For another model for technology use in schools, see Gerald Bailey's article "Technology Leadership: Ten Essential Buttons for Understanding Technology Integration in the 21st Century" (1996).

Technology leaders should discuss which elements of digital citizenship should receive highest priority in their districts. Elements that appear to be less important today still need to be identified and understood, even if not set as high priorities. New technologies bring problems that educators cannot foresee; for example, when text messaging technology was added to cell phones, educators did not immediately see any problem with it until students began sharing test answers. Technology leaders need to be constantly vigilant to new, emerging uses of technology, and have a thorough understanding of the nine elements of digital citizenship.

Some topics related to digital citizenship are so important that they should be explored and integrated into educational lessons. In Sections II and III of this book, lesson plans and activities are provided that explore each of the nine elements of digital citizenship. These lesson plans and activities are designed to help technology leaders begin their exploration of digital citizenship.

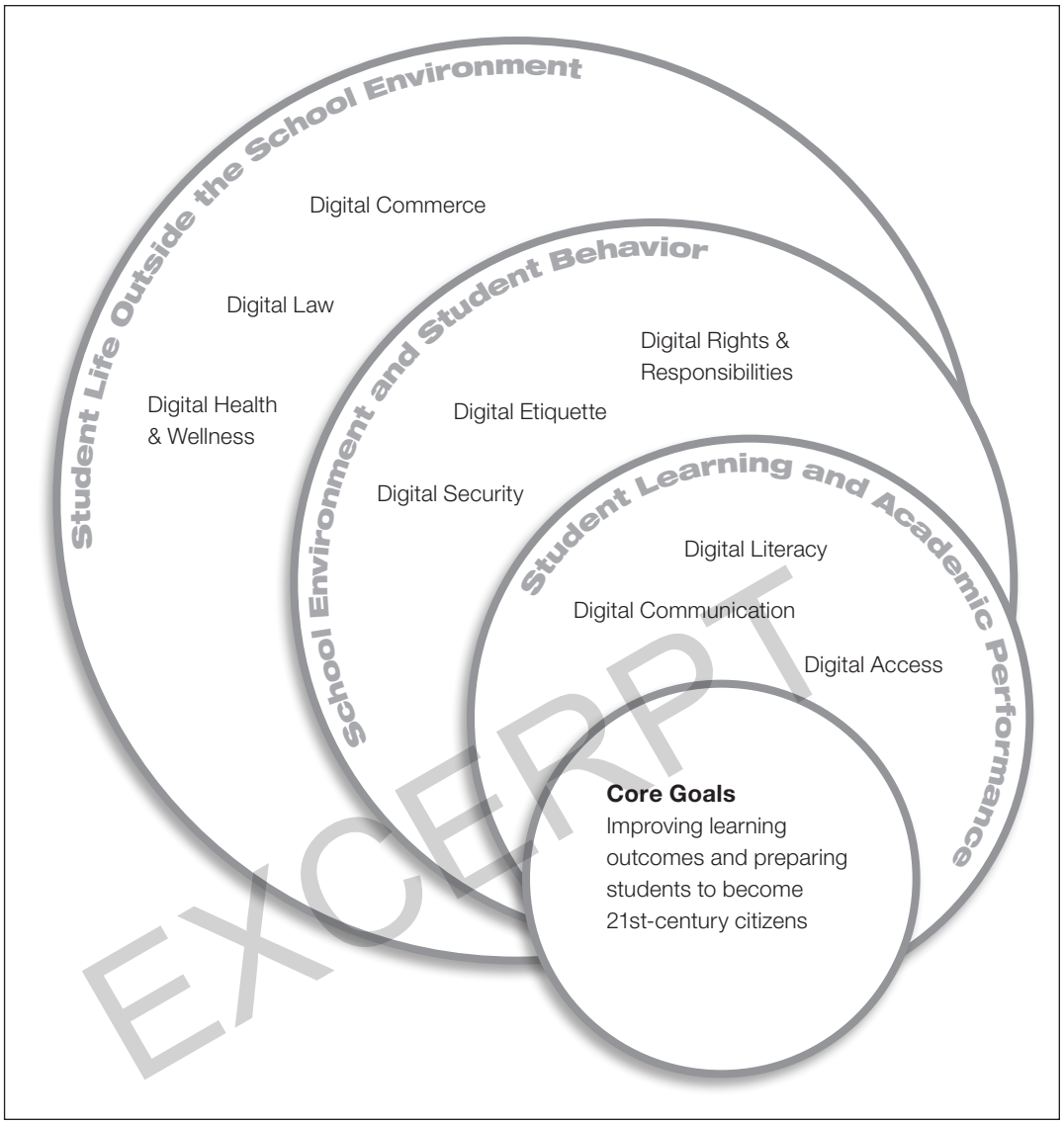

Figure 2.1 Model of how the elements of digital citizenship relate and connect.

Because technology is becoming ever more accessible and students are using these technologies more frequently (both in school and out), technology leaders must continually assess and determine their priorities in terms of digital citizenship. The nine elements of digital citizenship and these three categories should help technology leaders not only relate better to these new technologies and enjoy their benefits, but help all of us realize that there is much we do not know and much we have left to learn.

Mike Ribble has served as a classroom biology teacher, a secondary school administrator, a network manager for a community college, and a university instructor. He received a doctorate in educational leadership from Kansas State University. He is also the author of *Raising a Digital Child* (ISTE 2009).

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