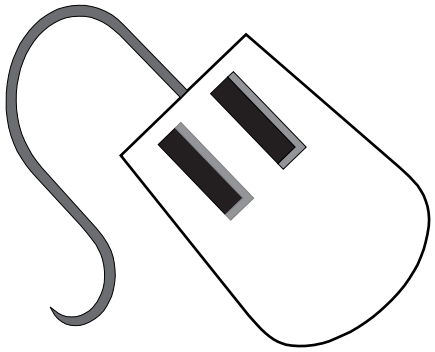


CHAPTER 12
Issues

INTRODUCTION

Identifying current issues in technology is a constantly evolving process. The issues of today will be solved by tomorrow's technology. Moreover, the essence of lifelong learning can be readily applied to issues in technology. Thus identifying current issues in technology is an issue in itself. As a classroom teacher, you will confront many issues related to technology that will rely on your ability to develop meaningful solutions. This chapter presents many technology-related issues that teachers encounter every day. Current issues covered in this chapter are legal issues, ethical issues, social issues, and other current issues. Some "issues" have emerged because of the current technologies and some have been around much longer than the current push for technology in schools.

Case Study

Mrs. Gonzales likes to supplement her instruction with visual aids (e.g., PowerPoint presentations, digital images, Inspiration) and often tries to use a CD-ROM full of clipart images she bought with her own money to enhance her presentations. Today, she was unable to find an image for her lesson on dissecting a frog. She thought it was important that she had relevant images so that her students would get the proper overview before cutting into their own frog specimens. Fortunately, Mrs. Gonzales was able to remember a tip she received from another teacher for finding images on the Internet. She visited *http://images.google.com* and was able to search for and find many images of frogs in various stages of dissection. The dilemma she faced was that she was not sure she was free to use the images she found or whether she would be violating copyright laws. What would you do?

Legal Issues

Copyright and Fair Use

Copyright is a term used to describe the protections given to authors, musicians, and artists and others who create products for their original work. The current copyright laws were written in 1976 to ensure that the individuals who create the work have ownership over their works (see *http://www.copyright.gov/* for the US Government Copyright office. This site has much information written for the general public). What this means to you in the classroom is that you need to get permission if you are going to copy a product you find.

Educators rely on the various resources they can find. Most teachers have the students' interest in mind when they choose to use a resource in their classroom. The teacher may have taped a really good PBS television series to show in an American history class each year. Or, the teacher might have found the perfect image on the Internet to use in a PowerPoint presentation for current and future lectures. Both of these scenarios are in violation of the Copyright laws. You cannot tape shows off of television to show in your classroom year after year. And, just because you can find images freely available for viewing on the Internet does not give you permission to then copy the image to use again and again. This chapter will discuss a concept called **fair use** and the fair use guidelines will give you some parameters for what copyrighted works you can use and how you can use them.

Under certain circumstances, called **fair use,** people can commit minor violations of the Copyright law if they are doing so for criticism, comment, news reporting, **teaching,** scholarship, or research (See Sidebar). This means that depending on the circumstances, the classroom teacher can use small portions of copyrighted works without obtaining permission to use the copyrighted materials (see Figure A). Now, fair use does have some

Examples of What Can Be Copied?

- A chapter from a book (never the entire book).
- An article from a periodical or newspaper.
- A short story, essay, or poem. One work is the norm whether it comes from an individual work or an anthology.
- A chart, graph, diagram, drawing, cartoon or picture from a book, periodical, or newspaper.
- Poetry
  —Multiple copies of a poem of 250 words or less that exist on two pages or less or 250 words from a longer poem.
- Prose
  —Multiple copies of an article, story or essay that are 2,500 words or less or excerpts up to 1,000 words or 10 percent of the total work, whichever is less.
- Illustrations
  —Multiple copies of a chart, graph, diagram, drawing, cartoon, or picture contained in a book or periodical issue.

Figure A Some Examples of Fair Use for Teachers Copyright and Computer Software

Sidebar

. . . the fair use of a copyrighted work . . . for purposes such as criticism, comment, news reporting, **teaching (including multiple copies for classroom use),** scholarship, or research, is not an infringement of copyright. In determining whether the use made of a work in any particular case is a fair use the factors to be considered shall include—

(1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes;
[This applies to how you intend to use the copyrighted works—e.g., for the classroom and not commercially]

(2) the nature of the copyrighted work;
[This applies to the type of work that is copyrighted—e.g., is it creative work? factual work?]

(3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and
[This applies to how much of the copyrighted work you intend to use—e.g., a small amount is more likely to be okay than a larger portion]

(4) the effect of the use upon the potential market for or value of the copyrighted work.
[This applies to how your use might impact the ability of the copyright holder to make money on the work(s)—e.g., does your use hurt the creator from making money?]

More to consider:

- You are permitted to use the works that qualify for fair use in the classroom setting only and an online class is likely treated the same way as a traditional classroom, though you should check with your school to be sure.
- Give credit to the copyright holder and the copyright notice ©.
- Use the copyrighted materials no more than 1 time . . . Beyond the first year you must receive permission from the copyright holder.
- When in doubt, use caution. Limit any fair use to small amounts (e.g., no more than 10% of images from a site and no more than 15 total).
- These rules apply to your students as well (e.g., student projects, presentations).

For more details visit: *http://www.copyright.gov/circs/* (#21—Reproductions of Copyrighted Works by Educators and Librarians)

flexibility, which is not unlike most laws on the books, and the lack of specificity creates confusion for most practitioners who do not have time to figure out all of the intricacies of the law. In fact, the law does not provide the specific parameters of how the law gets interpreted and enforced. This is largely being left to the courts; however, ignorance of the law can still get a teacher and school into legal trouble.

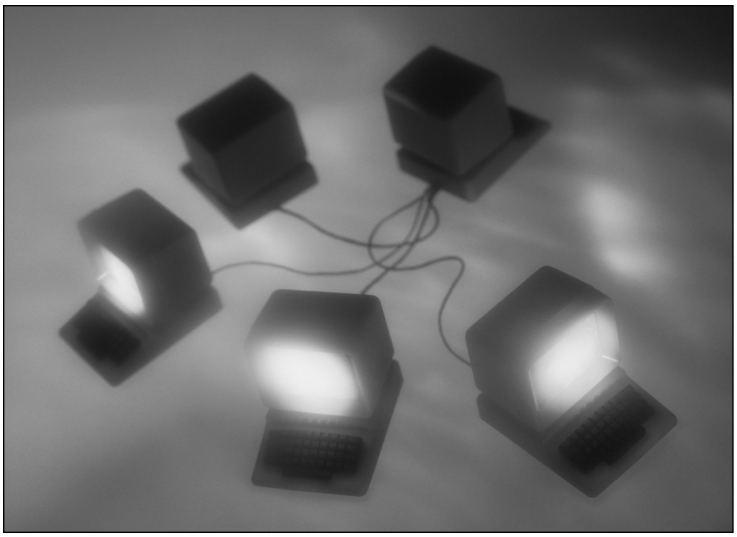
Copyright and Computer Software

Copyright laws also apply to computer software. Software piracy is a growing problem and software publishers are becoming more aggressive in how they pursue individuals breaking the law and copying software. Most software requires the user to agree to an End-User-License-Agreement (EULA) prior to installing the software on a computer. When software is purchased, the software is really being licensed to the end user with the software itself remaining the property of the author or publisher. The individual is merely being allowed to use the software in accordance with the EULA. This license agreement will typically explain that the software can be installed on only one computer. Sometimes, the EULA will allow the end-user to install the software on one desktop machine and 1 laptop machine or any number of other options. Each EULA should be read and understood to avoid breaking the law even though the natural tendency is to just click "Okay."

Individuals and schools will typically purchase a software license that is catered to their particular needs and budgets. The various software licenses are: A) Single-user, B) Multiple-user, C) Network license, and D) Site license.

A **single-user license** is common for individuals. This license allows the individual to install the software on only one computer, but there are some exceptions. Purchasing software using a single-user license for many computers is the most expensive way to buy software because other purchasing methods allow for a bulk-rate discount. A more cost effective method of purchasing software for many computers is called a **multiple-user license.** The multiple-user license might be more appropriate for a classroom that has 5 computers (or more). This is similar to buying bulk at the grocery store in that the extra product comes at a discount. The school agrees to purchase 5, 10, 20, or more copies of a particular software package and the vendor agrees to give the school a discount. This helps schools to equip more computers with the software and to save money on the cost per machine. A **network license** works similar to the multiple-user license in that the school is purchasing more than 1 copy; however, the network license allows the schools to install software on a network server and the license specifies the number of other computers that can open the software at any given time. So, if the network license allows 10 machines to run the software, the first ten machines that open the particular application will be able to use it and any other computers that attempt to open the software will not be allowed to do so until one of the existing machines closes the application. This is a nice solution for schools that want multiple copies to be used in many different locations at varying times. The final license is called a **site license.** This is another cost effective method of software licensing and is often the most cost effective when installing software on most machines in an organization (e.g., a school). The site license ensures that every machine at a location will get necessary software installed. For example, many schools find it wise to purchase a site license for necessary software like Microsoft Office or a particular e-mail application or grade book software that is common across the district.

Understanding the various licenses and how to best use them is important for schools. Violating the license agreements can result in a school paying heavy fines. So, buying one copy and trying to install it on many machines might seem like a cheap solution; albeit, illegal, the fines for being caught doing this can far exceed the amount that they school would have paid to buy a site license or network license.



File Sharing

Naptser was the first large scale use of the Internet for sharing music illegally. The site grew to 60 million visitors in just a few short years. People flocked to Napster because they could get free music in the form of MP3 files and they did this by sharing files with each other. The site was easy to use and convenient for a great many folks. Napster was also found to be violating copyright laws and was forced to shut down because this music sharing was not legal. This did not stop many people from seeking alternative solutions to Napster. Gnutella is a newer system of file sharing that skirts the law, for the time being, because the file sharing network does not run through a centralized server like Napster did. The courts could shut down a centralized server(s), but newer file sharing systems are created so that users who are sharing files are doing so from each other and not though the company website.

Some people will use special software to develop an open or closed network of computers that has a purpose of sharing files, even beyond music. These networks can be used for positive and beneficial purposes. For example, a group might set up a file sharing network as they work on a group project so that the latest files related to the project are available to everyone in the group. Other networks might share files that are freely available in the public domain. Unfortunately, many of these file sharing networks are developed for the sole purpose of sharing files illegally, like Napster was. People can use these file sharing networks to share movies, software, music, and more.

The music industry has been cracking down on people who abuse these networks to share music with fines ranging into the thousands of dollars. Even though the process of sharing files can be easy, many of the files are still being shared in an illegal manner and this type of sharing should be avoided. Schools and perpetrators can receive great fines and jail time for stealing music, software, movies, and other copyrighted works. Individuals can received a $250,000 fine and up to 3 years in prison for violating copyright laws using a file sharing network. Schools can also be fined into the hundreds of thousands of dollars for copyright infringement.

Internet Filters

Schools are legally obligated to protect students from inappropriate content while the students are online. The Children's Internet Protection Act (CIPA) stipulates that all public schools and libraries install software and/or hardware to help ensure that children do not view inappropriate content while using the Internet. Most schools and libraries have installed filtering systems (e.g., hardware or software). These filtering systems work in many different ways. A filter can use a list, which contains the addresses of inappropriate sites having offensive content in them. The filter works by blocking these sites from the computer(s). Another filtering system might work just the opposite by keeping

a list of all of the approved sites that can be visited. These two types of filters require much human interaction and time. Some other filters look for keywords (e.g., inappropriate words) and sites with a large percentage of photo and many can even try and examine photo names on the pages for inappropriate and r-rated type names.

Ethical Issues

Privacy

The Internet has gained much prominence in educational settings. Many students and teachers are creating their own website these days, which are great ways to share resources and communicate. The Internet is a valuable tool for self-publication meaning that one person can post a website that is viewable by hundreds of millions of people. The benefits are many; however, the dangers are readily apparent as well. Teachers need to ensure that great care is taken to protect student privacy. In fact, the **Children's Online Privacy Protection Act** was a law passed to help protect students while online.

The responsibility of protecting student privacy online is summed up by understanding that teachers should never post images of students, names, or other identifying information on the Internet without prior parental permission. Even with permission, a teacher should take precautions from releasing information about a student beyond a first name. Releasing the name of a child in a certain class could create a safety issue for that child. Most schools will have an Acceptable Use Policy that will address this issue and the classroom teacher should understand and follow these rules.

The same care should be taken when using software to record and share student grades and other personal data. Students should only be able to see their own records (e.g., grades). You cannot identify a student by the student's school ID number or social security number either. You should take care to use software that can display only the individual student's records to the student and the parents of the child.

Plagiarism

The issue of plagiarism existed well before the computer and the Internet emerged in schools. The problem has been exasperated because of newer technologies. Students now have access to hundreds of millions of resources and various cheat sites on the Internet. No classroom teacher can check every paper or project submitted to ensure the work is original, but there are tools developed to help teachers tackle the problem. Unfortunately, most of the tools cost money. One site is called *turnitin.com*. A site like this will keep a large database of online papers and websites so that a classroom teacher

Case Study

Mr. Johnson noticed some higher quality work in one particular paper from a student who did not typically use the vocabulary used in this paper. Mr. Johnson suspected that the student might have plagiarized much of the content of the paper; unfortunately, his school did not subscribe to an online plagiarism resource like *plagiarism.com.* But, Mr. Johnson already had another strategy up his sleeve as he opened up his browser and went his favorite search engine, Google. He did a search for one sentence in the paper to see if it matched any of the billions of sites being indexed by Google. To ensure that the specific sentence was searched for, Mr. Johnson used quotations around the sentence. Sure enough, the sentence matched with a website. Upon visiting the site, Mr. Johnson was able to discover that about 1/3 of the paper had been copied directly from the website.

can have student papers checked against the materials in the database to ensure that the work is not plagiarized. This service is very fast and easy to use.

Spam

Spam is a term given to unsolicited emails that are typically "junk mail" sent to many people trying to sell some product. Some people consider spam to be unsolicited advertisements while other people consider any impersonal e-mail forwards (e.g., jokes, pictures, stories, chain letters) to be spam as well. A common theme among most definitions is that spam is an unwanted e-mail.

Avoiding Spam can be nearly impossible, but you can use strategies to help avoid getting spam. When you buy things from online vendors, they will collect information about you. This same concept applies to online services (e.g., gaming sites, subscription sites, news sites) and any site that asks you for an e-mail address. Many of these vendors or online sites will create lists of e-mail addresses, which are often sold to people who send spam. One way to try to avoid getting spam in your main e-mail account is to sign up for a free online e-mail account (e.g., Hotmail) and only use this online e-mail account for purchases on the Internet. This helps keep your school/business account from being sold to spammers. You will still get spam sent to your online e-mail account, but you can easily delete mass quantities of spam with most online e-mail services and your main e-mail account will largely remain free from bulk quantities of spam. The best way to avoid spam is to be very careful about giving out your e-mail address. Read the privacy agreement that is provided by most sites that ask for your information. They should tell you whether they would share any of your information with other people or businesses. Sometimes they even have options that allow you to determine whether your information is shared.

Social Issues

Perhaps the most apparent social issue that many teachers face today related to technology is an issue called the **digital divide.** The digital divide is the gap between those students who have access to computers at home and those students who do not. Another

digital divide is emerging that represents the gap between those students who have high speed access to the Internet, those students who have slower (dial-up) access, and those students who do not have any access to the Internet. While computers are appearing in more and more classrooms, the access divide is still very much an issue for many students.

A digital divide used to exist between schools that were able to provide student access to the Internet, but this divide has shrunk as the government has made grants available to schools that were without; however, the gap in the homes is still apparent. In fact a recent government report indicates that, 99% of schools now had access to the Internet and that 92% of individual classrooms had access (ed.gov, 2002: *http://www.ed.gov/news/pressreleases/2003/10/10292003a.html*)

A classroom teacher may not be able to overcome the digital divide alone, but the teacher can be cognizant of the types of homework given that require a computer or Internet access. One strategy is to allow classroom time for work that requires access to the Internet and to then give a different assignment for homework. A teacher can also work to ensure that students who are not getting practice with technology at home are also not being neglected at schools. A teacher can help students make great strides in learning and using new technologies if the teacher is willing to use and encourage the use of new technologies in the curriculum.

If a teacher is interested in trying to bridge the digital divide in a community, the government provides a toolkit that can help to achieve this goal. This site is *http://www.ed.gov/Technology/tool_kit.html*.

Other Current Issues

Security

Computer security goes far beyond making sure computers are not stolen. Computers also have to be protected from vandalism, from computer viruses, and from being accessed by people who are not supposed to access the computers.

All technology in schools needs to be protected from theft. The high cost of new technologies makes it especially lucrative to thieves. Many schools still use computer labs where many computers are available for classroom use. These rooms should have extra security to help protect these machines. However, many schools will also have computers in the various classrooms as well. As a teacher, you will be responsible for the technology in your room and you should take steps to ensure that your computers are kept safe from theft.

Perhaps more costly than thievery is the cost of vandalism. Vandalism occurs when computers are left unattended and unsupervised. Students can vandalize intentionally

Computer Lab Rules

Students are responsible for using equipment in a professional manner and in accordance with the Acceptable Use Policy.

Labs & Equipment

1. Absolutely NO drinking or eating in the computer labs.
2. Report all system problems to the teacher, computer lab assistant, or coordinator on duty. Do NOT attempt to repair or tamper with equipment.
3. Do NOT remove, rearrange, disconnect, or deface any equipment.

Figure B Sample Portion of Lab Rules

(e.g., sticking a pencil or pen in the CD-ROM slot) or unintentionally (e.g., spilling a pop on the keyboard). The best strategy for preventing vandalism is to ensure that students are not left alone with computers. Another strategy that can help is to post rules for using computers (see Figure B). These rules can act as a reminder to students that they are expected to treat the machines with care.

While theft and vandalism are easily preventable by locking equipment up and supervising the equipment when it is being used, another security threat is not as overt. Some people choose to do harm to other computers by hacking into the machines or by sending special computer programs designed to wreak havoc (e.g., a computer virus).

SUMMARY

Legal issues related to technology in education can be the most costly to ignore. Copyright violations can cost schools over $100,000. Teachers can also be found guilty of copyright violations so this is not a topic to take lightly. Fortunately, fair use guidelines do provide educators with some exceptions or minor adjustments to the copyright laws, though care should be taken to understand the fair use guidelines to avoid breaking the law. Copyright issues apply to software and most software publishers provide different licenses to save money in buying the product. Rarely do End-User-License-Agreements give an individual permission to install software on more than 1 or 2 computers, so teachers and individuals should take care to read the End-User-License-Agreement that accompanies their software.

Ethical issues pertain to plagiarism and privacy. The Internet and other new technologies provide the means for students to cheat and plagiarize. Teachers can employ strategies to help stop plagiarism, but these methods require the teacher to remain diligent to fighting this kind of cheating. Teachers also have the responsibility of protecting students identities while they are online and when posting student work to a school website. No student should ever be identified in name or by a photo unless parents have agreed to allow this, typically in the form of an Acceptable Use Policy.

The digital divide is probably the most glaring social issue related to technology. There are two kinds of divides that teachers deal with in the typical classroom: 1) the gap

between those students who have access to computers at home and those students who do not, and 2) the gap between those students who have high speed access to the Internet, those students who have slower (dial-up) access, and those students who do not have any access to the Internet.

Finally, many other issues exist that are related to technology from computer security issues to e-mail spam and other online issues. You can work in your school and district to help ensure that current issues do not become problematic. Developing rules and policies and being aware of various issues are some of the steps you can take to help ensure a thriving educational environment that takes advantage of current technologies.

Discussion Questions

1. Fair use guidelines have flexibility in how they are interpreted. Provide some general parameters for how you can use copyrighted works in your classroom.

2. How do you feel about the fair use doctrine? Do you think it should be more liberal towards educators (taking away potential money for producers, but helping educators) or is the current law about right? How would you change fair use so that it is fairer to all parties?

3. What are strategies you can use to fight plagiarism?

4. What are the various kinds of digital divide that exist?

5. How does the digital divide affect students? How do we, as educators, make a difference in the digital divide? Are there any current initiatives to lessen the gap between those who have technology and those who do not?

6. What different types of security risks threaten school computer systems? How can you minimize these risks?

Key Terms

Copyright: This is a term used to describe the protections given to authors, musicians, and artists and others who create products for their original work.

Digital divide: The gap between those who have access to technology and those who do not. This gap can also represent the gap between those who have access to a broadband Internet connection versus those with dial-up or without any Internet connectivity.

Fair use: Some individuals, including teachers, can commit minor violations of the Copyright law if they are doing so for criticism, comment, news reporting, teaching, scholarship, or research.

Software license: When individuals and/or schools purchase software, the software is not actually owned by the end user; rather, this end user is being granted a license to use the software according to the End-User-License-Agreement.

Spam: This is a term given to unsolicited e-mails that are typically "junk mail" trying to sell some product.

Extension

1. How do you feel about the fair use doctrine? Do you think it should be more liberal (taking away potential money for producers, but helping educators) or is the current law about right? How would you change fair use so that it is more fair to all parties?
2. How does the digital divide affect students? How do we, as educators, make a difference in the digital divide? Are there any current initiatives to lessen the gap between those who have technology and those who do not?
3. Read the End-User-License-Agreement for some of the software you own. Do you find any stipulations that are surprising to you? Are you breaking the conditions on any of the agreements?

Websites

Copyright

The United States Copyright Office
http://www.copyright.gov/

The Copyright Clearance Center. This is where you can go to get permission to reproduce copyrighted works.
http://www.copyright.com/

Privacy

The Children's Online Privacy Protection Act
http://www.ftc.gov/ogc/coppa1.htm

Teacher's resource for privacy issues
http://www.ftc.gov/kidsprivacy/teachers.htm

Plagiarism

Plagiarism resource
http://www.georgetown.edu/honor/plagiarism.html

Digital Divide

The National Center for Education Statistics. You can search for the current data about technology in schools and related demographics.
http://www.nces.ed.gov/

Computers for Learning government website
http://www.computers.fed.gov/Public/home.asp

PBS series on the digital divide with teachers brochures and resources.
http://www.pbs.org/digitaldivide/learning.html

Acceptable Use Policies

Acceptable Use Policies
http://www-ed.fnal.gov/lincon/issue_aup.shtml

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Toolkit for bridging the digital divide in your community. U.S. Department of Education, Office of Educational Technology. Available online at *http://www.ed.gov/Technology/tool_kit.html*

U.S. Copyright Office. Available online at *http://www.copyright.gov/* (particularly, circular #21— Reproductions of Copyrighted Works by Educators and Librarians available online at *http://www.copyright.gov/circs/circ21.pdf*)