CHAPTER 6

Personal Computers and the Internet

Entry-Level and Advanced 1 Health Educator Competencies Addressed in This Chapter

Responsibility I: Assess Individual and Community Needs for Health Education
Competency A: Access existing health-related data.

Responsibility II: Plan Health Education Strategies, Interventions, and Programs
Competency G: Assess factors that affect implementation.

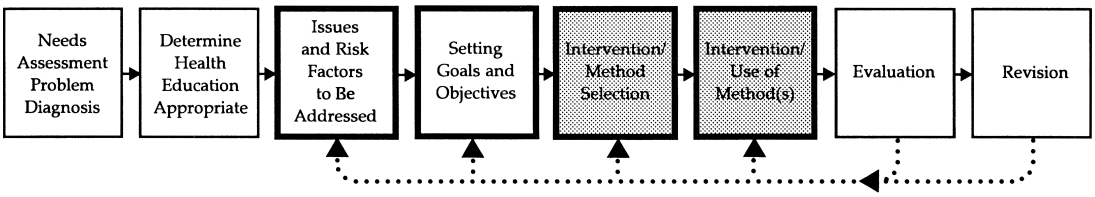
Responsibility III: Implement Health Education Strategies, Interventions, and Programs
Competency A: Initiate plan of action.
Competency B: Demonstrate a variety of skills in delivering strategies, interventions, and programs.
Competency C: Use a variety of methods to implement strategies, interventions, and programs.

Responsibility VI: Serve as a Health Education Resource Person
Competency A: Use health-related information resources.
Competency C: Select resource materials for dissemination.

Responsibility VII: Communicate and Advocate for Health and Health Education
Competency B: Apply a variety of communication methods and techniques.

Note: The competencies listed above, which are addressed in this chapter, are considered to be both entry-level and Advanced 1 competencies by the National Commission for Health Education Credentialing, Inc. They are taken from *A Framework for the Development of*

Method Selection in Health Education



Heavy-bordered boxes indicate subjects addressed in this text; shaded boxes indicate subjects(s) of current chapter.

Competency Based Curricula for Entry Level Health Educators by the National Task Force for the Preparation and Practice of Health Education, 1985; *A Competency-Based Framework for Graduate Level Health Educators,* by the National Task Force for the Preparation and Practice of Health Education, 1999; and *A Competency-Based Framework for Health Educators—The Competencies Update Project (CUP)*, 2006.

OBJECTIVES

After studying this chapter the reader will be able to:

- Describe the development and importance of technology in health education.
- List the uses of a personal computer in the health education profession.
- Describe the components and process of evaluating websites.
- Correctly cite a source of information retrieved from a website.
- Describe the components and process of properly using chat rooms.
- Describe the uses of distance education in health education.
- Locate the email addresses of health educators using the Health Education Directory Internet Resource (HEDIR).

KEY ISSUES

Internet access
Evaluating websites
Citing web sources
Netiquette
PCs and health education
Distance learning
Virtual reality
Chat rooms
Forums
Blogs

The above listing of commonplace terms now used daily is perhaps evidence of the most explosive technological advances of the 20th century—almost limitless access to information through the use of personal computers and the Internet. Not long ago, searching for information about any subject usually involved a trip to a local library and a walk through the dusty stacks of books, hoping that the volume in question had not already been borrowed by another inquisitive patron. Although libraries today still fulfill an important role as providers of the printed word, even these institutions have altered their focus to utilize Internet access. According to a 2007 national survey of U.S. libraries, at least 99.1% of libraries provide online services to the public (Bertot, McClure, & Jaeger, 2007). Universally, vast numbers of individuals seeking information of all types turn, as a matter of course, to their personal computers and literally search the world for answers to their questions. The explosion of personal computer usage in the United States is an indicator of habits changed forever. In the mid-1980s only about 8% of Americans had a personal computer in their home, but by 2004 that number had increased to nearly 65% (International Telecommunications Union [ITU], 2006). It is estimated that there are over a billion personal computers in use around the world. In addition to personal computer ownership, computer experts estimate that approximately one-third of Internet users log on using either a laptop, handheld personal digital assistant (PDA), or smart phone using WIFI broadband or other cell phone networks (Horrigan, 2007). Perhaps most important for health ed-

ucators is the statistic that nearly 53.5% of those individuals accessing the Web are seeking information related to health issues (Diaz et al., 2002).

Caveat Emptor

Although the Internet gives us the opportunity to access a wealth of current, accurate, state-of-the-art data, we can also be confronted with just the opposite . . . outdated, inaccurate, biased, controversial, and often unfounded information. Anyone who has access to the Internet can develop a website, and although many people assume information published on the Web to be accurate, the mere existence of a site means nothing with regard to legitimacy or objectivity. Many websites provide information that is vague as to its source or authorship. Some sites are blatantly biased; others appear to be legitimate but carry subtly prejudicial messages.

The Internet is a multibillion-dollar marketing tool, so users should be aware of the potential association between information and commercially marketed products. What makes the Internet unique with regard to legitimacy of information is that there is no screening device between the site developer and the user. Research or academic libraries, for example, have developed mechanisms whereby journals, books, and other resources have already been evaluated for inclusion in the library as legitimate resources. When you search for information on any given topic in such a library, any index or database that you access has been developed by a scholarly organization with an eye to maintaining strict standards of accuracy and legitimacy. No such screening device exists on the Internet; therefore, the user is exposed to an incredible diversity of material, often ranging from the sublime to the ridiculous. Clearly this is a case of *caveat emptor,* or buyer beware!

Objective: After reviewing the case study, the reader will explain how the principle of *caveat emptor* applies to Robyn's experience using Internet information.

Case Study: Robyn

Robyn has been asked to facilitate a prenatal workshop for a community group of expectant mothers. Robyn has been extremely busy lately, feeling overwhelmed with the numerous projects with which she has been involved. As the evening of the workshop date arrives, she has not yet pulled together materials for her presentation. Racing against time, Robyn decides to perform a rapid Internet search for relevant resources. Her search results in a myriad of sites, of which she selects a few that look the most promising and interesting. Hastily making photocopies of the information, Robyn heads to her workshop. The session begins well, with introductions, an explanation of the purpose of the workshop and the dissemination of the first Internet-generated handout—a discussion about diet during pregnancy. Robyn's growing confidence is abruptly punctured as an astonished and increasingly irate participant loudly notes that the author of the handout was a doctor who had lost his license to

practice medicine for promoting his own diet plan that was judged to be unsafe and, in two instances, potentially fatal. Robyn, obviously shocked, stammers an apology and quickly moves on to another handout, fervently hoping that lightning won't strike twice! (See Case Studies Revisited page 247.)

Questions to consider:

1. What steps could Robyn have taken to avoid this problem?
2. Whose responsibility is it to assess the credibility of an Internet source?

The Feds Strike Back!

The Federal Trade Commission (FTC), the government watchdog organization responsible for monitoring, among other things, false claims developed by manufacturers and distributors of health and medical products, has created an innovative learning device. Instead of issuing boring, ineffective warnings about being fooled by unscrupulous "snake oil salesmen," the FTC has joined the game. In 1999 the FTC developed several bogus Web sites supposedly selling miracle cures and treatments like NordiCalite (weight loss), ArthritiCure (arthritis treatment), and Virility Plus (impotence) (see Figure 6-1). The screens describe the miraculous effects of the products and urge the consumer to purchase them immediately. When the consumer clicks on to the last screen to obtain the payment information, a screen explains that the Web site was developed by the FTC and is selling a nonexistent product. The site user is advised that many hundreds of Web sites exist that collect money without sending a product, sell products that have no medicinal or health value, and are being supported by false or exaggerated claims. This is an extremely innovative way to use the Internet to educate consumers about the dangers of purchasing from an unknown website.

According to *The Washington Post* (1999), the FTC visited about 800 sites over a 2-year period that contained questionable medical or health claims. The owners of these sites were sent an email warning that they were potentially violating federal law. When these same sites were rechecked some months later, approximately 62% were unchanged. Moreover, although the FTC charged 91 Internet sites with fraudulent advertising in a 4-year period, the number of new sites proliferates on a daily basis. This would seem to suggest that creating more educated and sophisticated consumers might be a more productive and effective route than legal action. The FTC advises consumers to beware of marketing that includes the following techniques (Meadows, 2006):

- Claiming the product will quickly cure a variety of ailments
- Using words such as "scientific breakthrough," "secret ingredient," or "ancient remedy"

Figure 6-1
The Federal Trade Commission Website

- Using impressive-sounding "medicalese" such as "thermogenesis" or "hunger stimulation point"
- Claiming the government, scientists, or the medical profession have conspired to suppress the product
- Including undocumented case histories or testimonials citing miraculous results
- Advertising the product as available from only one source or in limited supply
- Promise of no-risk or money-back guarantees

Evaluating Internet Sites

Assessing the credibility of an Internet site is an incredibly important concern given that millions of people are using the Web on a daily basis, and a high proportion of these users are seeking health-related information. Without some type of barometer, how do we evaluate the legitimacy and accuracy of information obtained from the Internet, and what types of issues should users consider? A list of such criteria was developed by Betsy Richmond (2000) of the McIntyre Library at the University of Wisconsin-Eau Claire; it is shown in Table 6-1.

Table 6-1 Ten Cs for Evaluating Internet Resources

Criteria	Explanation
1. Content	What is the intent of the content? Are the title and author identified? Is the document "juried"? Is the content "popular" or "scholarly," satiric or serious? What is the date of the document or article? Is the edition current? Do you have the latest version? (Is this important?) How do you know?
2. Credibility	Is the author identifiable and reliable? Is the content credible? Authoritative? Should it be? What is the purpose of the information, that is, is it serious, satiric, or humorous? Is the URL extension .edu, .com, .gov, or .org? What does this tell you about the "publisher"?
3. Critical thinking	How can you apply critical thinking skills, including previous knowledge and experience, to evaluate Internet resources? Can you identify the author, publisher, edition, and so on as you would with a "traditionally" published resource? What criteria do you use to evaluate Internet resources?
4. Copyright	Even if the copyright notice does not appear prominently, the material falls under the copyright conventions. Fair use applies to short, cited excerpts, usually as an example for commentary or research. Materials are in the public domain if this is explicitly stated. Internet users, as users of print media, must respect copyright.
5. Citation	Internet resources should be cited to identify sources used, both to give credit to the author and to provide the reader with avenues for further research. Standard style manuals (print and online) provide examples of how to cite Internet documents.
6. Continuity	Will the Internet site be maintained and updated? Is it now and will it continue to be free? Can you rely on this source over time to provide up-to-date information? Some good .edu sites have moved to .com, with possible cost implications. Other sites offer partial free use and charge fees for continued in-depth use.
7. Censorship	Is your discussion list "moderated"? What does this mean? Does your search engine or index look for all words, or are some words excluded? Is this censorship? Does your institution, based on its mission, parent organization, or space limitations, apply some restrictions to Internet use? Consider censorship and privacy issues when using the Internet. If you are working with young people, you need to apply some censorship.
8. Connectivity	If more than one user will need to access a site, consider each user's access and "functionality." How do users connect to the Internet, and what kind of connection does the assigned resource require? Does access to the resource require additional software, such as Adobe Reader or a media player?
9. Comparability	Does the Internet resource have an identified comparable print or CD-ROM data set or source? Does the Internet site contain comparable and complete information? (For example, some newspapers have partial but not full text information on the Internet.) Do you need to compare data or statistics over time? Can you identify sources for comparable earlier or later data? Comparability of data may or may not be important, depending on your project.
10. Context	What is the context for your research? Can you find "anything" on your topic—that is, commentary, opinion, narrative, statistics—and your quest will be satisfied? Are you looking for current or historical information? Definitions? Research studies or articles? How does Internet information fit in the overall information context of your subject? Before you start searching, define the research context and research needs and decide what sources might be best to successfully fill information needs without data overload.

Source: Richmond, B. (2000). *10 Cs for Evaluating Internet Resources*. Eau Claire, WI: University of Wisconsin, McIntyre Library (richmoeb@uwec.edu). Reprinted with permission.

NOTEWORTHY

Internet Example: Just Who *Is* Telling the Truth?

Access the Internet and go to http://healtheducation.jbpub.com/strategies. Follow the links to read *Ten Simple, Compelling Claims to Frame Arguments Against Drug Legalization* and *A Response to DEA Statements.*

You will find two entirely opposite views, with point-by-point rebuttals of established government arguments related to the issue of drug legalization. Which statements are true? How can the viewpoints be so different? Surely, a government (.gov) website is more credible than a private organization (.org) site? Check out the statements, and you be the judge. How could you best utilize information of this type that is seemingly so contradictory?

Another way to approach a critical evaluation of Internet sites is to examine how scholars evaluate print media and apply the same criteria to electronic information. Aleteia Greenwood (2008) developed six basic categories of such criteria: author and source, accuracy, currency, objectivity, coverage, and purpose. Greenwood's categories include a checklist of questions to help determine whether an electronic page is suitable. With Greenwood's permission, we will now present these (adapted) criteria:

1. **Author and source:** It is important to ask questions of authorship and source because often we are taught to believe that what we read in a magazine or book or on the Web is true. But this is not necessarily the case. If you cannot find an author or an organization connected to a website, be very, very suspicious. If no one is willing to stand behind the creation of the page, why should you believe what is written there? Even if you can find an organization or author, you still need to be cautious and make sure that the organization and/or author are who they say they are. This may include further research on a particular author or organization. Consider the following questions:
   - Is there an author of the work? If so, is the author clearly identified?
   - Are the author's credentials for writing on this topic stated?
   - Is the author affiliated with a credible organization?
   - Does the site or page represent a group, organization, institution, corporation, or government body?
   - Is there a link back to the organization's page or a way to contact the organization or the author to verify the credibility of the site (address, phone number, email address)?
   - Is it clear who is responsible for the creation and/or maintenance of the site or page?

   Authorship is perhaps the major criterion used in evaluating information. Is the author well-known in the field? Is the author a name that is recognized? If not, Kirk (1996) recommends you consider if:

- The author mentioned is referenced by an authority you trust.
- You arrived at the source (linked to it) from a trusted source.
- There is biographical information about the author—including the author's position, institutional affiliation, address, or a provided information link.

2. **Accuracy:** Unlike the world of traditional print where information undergoes a process of peer review, publications on the Web are not required to pass such rigorous review and revision processes. As a result, not all webpages are reliable. Documents can easily be copied and falsified or copied with omissions and errors—intentional or accidental. When using web resources, strive to review scholarly documents and peer-reviewed e-journals. These types of publications typically follow the review process of traditional print. When evaluating accuracy, consider the following:
   - Is this page part of an edited or peer-reviewed publication?
   - Can factual information be verified through footnotes or bibliographies to other credible sources?
   - Based on what you already know about the subject, or have checked from other sources, does this information seem credible?
   - Is it clear who has the responsibility for the accuracy of the information presented?
   - If statistical data are presented in graphs or charts, are they labeled clearly?
3. **Currency:** Some information is timeless; however, updating data is extremely important for many subjects, particularly the sciences where information may change quickly and drastically. One should evaluate the regularity with which the data are updated. The date showing the currency of a site is usually near the bottom of the page. If links to other webpages are not current, this is a fairly good sign that the site is not well-maintained. Evaluate the currency by considering the following:
   - When was the document originally created?
   - When was the site or page last updated, revised, or edited?
   - Are there any indications that the material is updated frequently or consistently to ensure currency of the content?
   - If there are links to other webpages, are they current?
4. **Objectivity:** Consider who is providing the information, because authors and publishers are rarely neutral. If advertisements are present, consider the possibility of a relationship between the content of the page and the advertising. Could there be a conflict of interest? Check other sources to verify the information. Look closely at how information is presented. Are opinions clearly stated, or is the information vague? It is acceptable for a page to present a biased opinion, but you—as the consumer of the information—should know what that opinion is. It should be clear, not hidden. Other questions to consider related to objectivity include:
   - Is the page free of advertising? If the page does contain advertising, are the ads clearly separated from the content?

- Does the page display a particular bias or perspective, or is the information presented factually, without bias?
- Is the view of the subject clear and straightforward?
- Does it use inflammatory or provocative language?

5. **Coverage:** Consider the completeness of the document. If there is any indication that the page is still under construction, it may be better not to use it, because aspects of the page and the information on it may change by the time it is finished. If you are looking at a webpage for which there is a print equivalent, check to see if the entire work is on the webpage. If it is a portion of the work, make sure that quotes have not been taken out of context or that information has not been misrepresented. Evaluate completeness by asking:
   - Is there any indication that the page is complete, or is it still under construction?
   - If there is a print equivalent to the webpage, is there clear indication of whether the entire work or only a portion is available on the Web?
6. **Purpose:** Consider why the webpage has been posted. If the primary purpose of the website is to sell a product, a more credible source should be considered. Perhaps the purpose of the electronic resources is to empower others with knowledge, skills, or to influence a person's attitude about a topic. One should consider how comprehensive the information provided is and remember to look at the page critically. If a page has a narrow focus, try to make sure that relevant information has not been left out. Consider the purpose by asking the following questions:
   - What is the primary purpose of the page? To sell a product? To make a political point? To have fun? To parody a person, organization, or idea?
   - Is the page or site a comprehensive resource, or does it focus on a narrow range of information?
   - What is the emphasis of the presentation: technical, scholarly, clinical, popular, elementary?

NOTEWORTHY **Seal of Approval**

Several organizations are trying to help with the evaluation of Internet sites. One notable example is the HONcode developed by the Health On the Net Foundation, which was established in 1996 after an international conference in Geneva on the medical use of the Internet. The code was developed to direct proper use of the Internet in sharing health information. A "seal" of approval was adopted for sites that comply with the standards. Although there are a significant number of adopters, even a brief look at Internet sources demonstrates only a small percentage of sites adhere to these rules. Visit their website at http://www.hon.ch.

Correctly Citing Web Sources

The Internet has become a major source of information and resources for many individuals who need to research specific topics. Although the library has historically been the first research "port of call" for most people, the speed, efficiency, and global nature of the Internet has revolutionized the way research is conducted. When using the Internet you are obligated to reference materials cited just as you would for any other source (see Figure 6-2). It is unethical and usually a violation of copyright law to use the work of another without proper citation. Professional researchers, scholars, and students are familiar with citing references from printed information such as journal articles, government publications, and books. However, citing information taken directly from websites sometimes is a relatively challenging endeavor, and although it is similar in nature to traditional referencing, there are a few noticeable differences. When citing a website or other address you should provide the usual information, as well as the date the site was accessed. Refer to the newest version of the style manual you are using for your paper or publication.

One of the most commonly used styles of references is that of the American Psychological Association (APA). The following are examples developed using the guidelines provided in the APA's *Publication Manual* (2001).

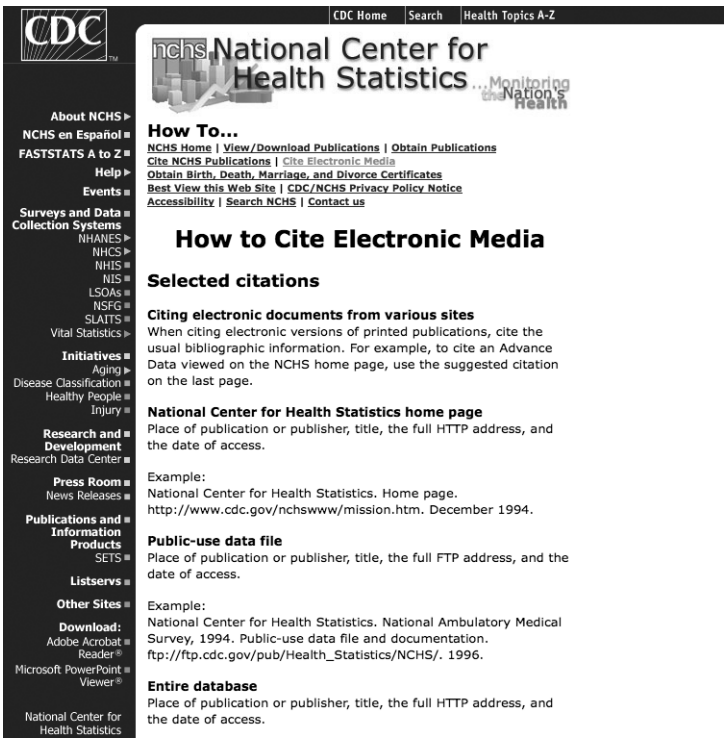


Figure 6-2
Electronic Resources Need to Be Cited

- **Journal article:**
  McNeill, E., & Eddy, J. (2005). Planning ADE: Implications from literature on student perspectives. *International Electronic Journal of Health Education*, *8*, 70–79. Retrieved September 16, 2008, from http://www.aahperd.org/iejhe/template.cfm?template=2005/mcneill.html
- **Newspaper article:**
  Yardley, J. (2008, September 15). Chinese baby formula scandal widens as 2nd death is announced. *New York Times*. Retrieved September 16, 2008, from http://www.nytimes.com
- **Abstract:**
  Andriole, D., Whelan, A. J., & Jeffe, D. B. (2008). Characteristics and career intentions for the emerging MD/PhD workforce. *Journal of the American Medical Association*, *300*(10), 1165–1173. Abstract retrieved September 1, 2008, from MEDLINE (PubMed) database.
- **Action alert posted by APA's Public Policy Office:**
  American Psychological Association. (2006, June 27). APA public policy action alert: Political tensions impact grant awards [Announcement posted on the World Wide Web]. Washington, DC: Author. Retrieved September 25, 2007, from http://www.apa.org/ppo/istook.html
- **World Wide Web pages:**
  National Institutes of Health. (n.d.). Retrieved August 23, 2008, from http://www.nih.gov/index.html

  There are a variety of interactive web tools designed to assist researchers in their efforts to credit sources appropriately. Many of these sites offer free access to software that can generate your citations in a designated format. Psych Web, operated by Dr. Russ Dewey, has an APA-style crib sheet that shows how to reference online resources:

Dewey, R. (2004). APA publication manual crib sheet. Retrieved August 15, 2008, from http://www.psychwww.com/resource/apacrib.htm

Public Domain in Health Education

A plethora of intellectual property is available to health educators from **public domain** sources. Information posted on most government websites is not owned or controlled by a specific entity; thus, it is considered in the public domain. Public domain information may be freely distributed and copied, but it is recommended that the source of the information be given appropriate acknowledgment. Keep in mind that you may discover materials such as illustrations, photographs, or other information resources on a public domain site that are contributed or licensed by private individuals, companies, or organizations; thus, they may be protected by U.S. and foreign copyright laws (National Library of Medicine [NLM], 2008).

When researching health-related data, it is a good practice to begin your search with sources that are recognized across the profession as credible sources. These include the sites of organizations such as:

- **National Institutes of Health (NIH):** http://www.nih.gov
- **Centers for Disease Control and Prevention (CDC):** http://www.cdc.gov
- **World Health Organization (WHO):** http://www.who.int/en

Additionally, you can explore sites that work in partnership to provide resources. For example, Partners in Information Access for the Public Health Workforce (http://phpartners.org/about.html) is a collaboration of U.S. government agencies, public health organizations, and health sciences libraries that provides access to selected public health resources on the Internet (NLM, 2008).

Technology in Health Education

Given that such revolutionary access to global information now exists, it is important to consider how this technology can be effectively incorporated as a tool of health educators. Certainly all health educators should have at least a rudimentary knowledge of computer usage, because most entry-level positions require such fundamental skills. Tasks that health educators might be expected to perform using this newer technology are as follows:

Using Handheld Devices (PDAs/ Smartphones)

- Texting
- Exchanging information between devices

Using Personal Computers

- Basic word processing functions, using programs such as Microsoft Word, that might range from simple reports to more complex activities such as newsletter or brochure development
- Data collection and recording with some type of spreadsheet software like Excel or SPSS
- Presentation preparation that might include charts, graphs, and presentation software such as PowerPoint (see Chapter 7)
- Utilizing health-related software, such as health risk appraisals or informational **CD-ROM** or **DVD**

Using the Internet

- Researching a topic to obtain the latest data
- Searching the Internet for websites that might provide differing viewpoints
- Searching specific websites for archival data
- Researching the application of methods by topic
- Reading or contributing to electronic professional journals. Many of these journals are good-quality, peer-reviewed publications that appear in an electronic format. In addition, many traditional health education journals are also accessible via the Internet (e.g., *American Journal of Health Behavior*).

Communicating via the Internet

This could be as basic as:

- Simple email messages
- Talking in a chat room
- Posting or reading messages on blogs, forums, or social networking sites

or something more elaborate like:

- Distance learning
- Videoconferencing
- Podcasting

The use of computer technology has certainly created exciting learning opportunities for classroom teachers, opening up new worlds to explore in addition to enhancing the more traditional modes of learning. Peck and Dorricot (1994) offer 10 reasons why classroom teachers should use technology in the classroom, presented in Table 6-2 with Steve Dorman's (1998) adaptation to the discipline of health education.

Table 6-2 Technology in the Classroom

Justification	Application to Health Education
#1 Students learn and develop at different rates.	One tenet of health education holds that the educator must consider the individual health and learning needs of the student. Use of technology in the classroom can facilitate this goal by evaluating and assessing the health needs of the user and starting the educational activity at an appropriate level for the learner. For example, many computer-based games and learning programs are able to assess the level of competence, record the playing history, and start the user at the appropriate level of the program.
#2 Graduates must be proficient at accessing, evaluating, and communicating information.	Living in the Information Age necessitates developing skills to access and evaluate health information. The average consumer is bombarded with information. Technology makes health information ever present. However, much of the information on the Internet, for example, is not evaluated and may be subject to error. Consumers must be able to access and evaluate the quality of information. Health educators, too, must be proficient in assessing, evaluating, and communicating health information as prescribed by the competencies of the entry-level educator.
#3 Technology can foster an increase in the quantity and quality of students' thinking and writing.	Technology opens avenues for study and exploration about health that until now would have required visiting a university campus or a major health center. The advanced information available allows the health education student to access an abundance of sources such as the Centers for Disease Control and Prevention (CDC), National Institutes of Health (NIH), and World Health Organization (WHO), which can stimulate advanced thinking about health issues and allow the student to develop more advanced solutions to health issues. Access to forums and listservs allows health education students to express themselves and to critique the expressions of others. HEDIR, the student HEDIR, and HLTHPROM are webforums that stimulate discussions and writings about health education related topics.
#4 Graduates must solve complex problems.	Technology allows students to explore complex health problems that would be difficult to simulate in a classroom without technology. For example, SimHealth, a computer game developed by the Markle Foundation, enables students to explore the impact of changes in government, health manpower, funding, taxation, and

(continues)

Table 6-2 Technology in the Classroom *(continued)*

Justification	Application to Health Education
	politics on the health of a local community. The average individual may take years to understand these complex relationships, yet this game presents them in a way that allows the user to grasp the dynamic impact they can have on health.
#5 Technology can nurture artistic expression.	Health-related graphic images such as those on the Visible Human Body Project give students access to visuals that previously were available only in the medical arena. These illustrations not only provide vital information about human anatomy, but also reveal the beauty of the human body in a way not seen before. In addition, with powerful software programs such as Freehand, Director Multimedia Studio, and 3D Choreographer, artistically inclined students can use technology to develop health-related computer activities, animations, and videos as class projects.
#6 Graduates must be globally aware and able to use resources that exist outside the school.	The Internet allows students inexpensive and instant access to health information around the world. Whether it is information about developments in biomedicine from the NIH, facts about disease transmission and epidemiology from the CDC, or late-breaking news on treatment and cures from the National Library of Medicine, the Internet allows the user access to this information found outside the walls of the school.
#7 Technology creates opportunities for students to do meaningful work.	Technology provides the conduit for individuals in the health and helping professions to contact difficult-to-reach populations. Many would listen to a mass communication message on television or other media, yet would not attend a public education lecture on the same topic. Health students can use technology to assemble highly creative venues for health information, which may indeed influence health behaviors. For example, students may be involved in video production, development of a computer-assisted instruction module on a health-related topic, or assembly of a dynamic set of webpages about a health issue.
#8 All students need access to high-level and high-interest courses.	Although the teacher should not rely on technology to supplant other stimulating forms of instruction or use technological application as a placating device for bored learners, technology can provide thought-provoking and stimulating avenues of study. CD-ROMs and DVDs, for example, provide the health education student with access to thousands of pictures of health-related issues and disorders.
#9 Students must feel comfortable with the tools of the Information Age.	The Information Age requires students to feel comfortable and proficient in accessing information about health by using technology. Students must feel capable and have a high level of comfort when interfacing with computers and technology formats to access health and other information.
#10 Schools must increase their productivity and efficiency.	Technology may help schools and teachers become more productive and efficient in health instruction. For example, electronic grading devices may give teachers more time to spend with students. Currently, several computer-based grade book programs are available for free downloading to an individual's computer. Local school-based electronic bulletin boards and email enable teachers to communicate easily with parents. CD-ROM technology allows teachers to implement learning stations in the health classroom, where students may engage in discovery learning at a pace on their level. Learners can be exposed to the basic facts about health by using technology, allowing the teacher to assist students with more complex tasks.

Source: Dorman, S. (1998). 10 reasons to use technology in the classroom. *Journal of School Health, 68*(1), 38–39. Reprinted with permission. American School Health Association, Kent, Ohio.

NOTEWORTHY **Health . . . the Internet . . . and Profit**

Former surgeon general C. Everett Koop, famous for his then-radical position on HIV education and crusading attitude against the tobacco industry, became an Internet millionaire. Shares in the company that Dr. Koop founded were offered for public sale on Tuesday June 8, 1999, and the former surgeon general's share acquired a value of $56 million! Dr. Koop is well known to most health educators. (Washington Post, 1999).

It seems apparent that technology applications are considered standard practice in the training of educators. The National Council for Accreditation of Teacher Education (NCATE) accreditation standards pertaining to technology preparation require teacher training programs to demonstrate a commitment to preparing candidates who are able to use educational technology to help all students learn (Beasley & Wang, 2001). This standard requires programs preparing school-based health educators to show how information technology is integrated throughout the curriculum including instruction, field experiences, and assessments (Dorman, 2001). These standards impact the way school health teachers are prepared, and in turn influence the preparation of community health educators as well.

Distance Learning and Health Education

Distance learning, or *distance education*, is a term that has been with us for many years, employed whenever educators work with students over some distance. Early examples were homework help via "ham" radio in Australia and states with isolated communities like those found in Wyoming and Alaska. Later, regular phone lines were used, sometimes one-on-one and at other times at designated centers, sometimes in groups with a speaker phone. Educational television programming was often part of the package.

For many years the state of Wisconsin operated an audio network. This two-way audio network on a wide range of topics allowed groups to use teleconference equipment or to interact using a phone. There were approximately 30,000 participants as of April 22, 1999.

The addition of the computer and the Internet has opened up new and exciting avenues for meeting communication needs in health education through distance education, continuing education, and professional development. Advances in technology have spurred the evolution of off-site learning from correspondence courses to interactive video and virtual learning via distance education (Mattheos, Jonnson, Schittek, & Attstrom, 2000). Generally when we refer to distance education today we are discussing Internet use, using any combination of tools and sometimes involving an entire course or

The abundance of personal computers and the Internet have made distance education a popular medium.

workshop. Many departments of health education and programs in public health are offering such courses or workshops today. Often they supplement traditional classroom courses with activities that require use of the Internet or offer Internet sites as sources of information.

Initially, technological problems limited the extensive use of the Internet for distance education by health educators—namely, slow speed of transmission, poor visual reception, bandwidth limitations on standard phone line capabilities, and high cost of quality hardware. All of these limitations have been overcome in most areas of the United States. Faster phone lines are available, and cable and other access points to homes are improving technical quality.

These limitations have been diminished with the enhancement of Internet speed, bandwidth capabilities, and increased accessibility of hardware devices. Sophisticated software such as Course Management Systems (CMS), Virtual Learning Environments (VLM), or Learning Management Systems (LMS) enable the student to become an active participant in the learning process by using capabilities like online chats, forums, testing, and submitting online text assignments. Along with the software, the course instructor can add a variety of tools (media) such as video lectures, Flash animations, podcasts, and videoconferencing to enhance the distance education student's experience. The addition of these tools and capabilities enables the student to take responsibility for the learning process and to determine the depth and breadth of exploration (McNeill & Eddy, 2005).

The growing demand for distance education is apparent. Student enrollments are escalating as students are shopping for education that meets their needs (Scott, Howell, Williams, & Lindsay, 2003). According to McNeill

and Eddy (2005), multiple factors contribute to the increased interest in distance education. These include:

- **Convenience:** Students have the ability to access courses from remote locations and to complete course requirements during nontraditional hours.
- **Cost:** Although many distance education courses appear to be more expensive when compared to the cost per course hour at a traditional university, the savings in time and ancillary costs often offset the difference in expenses. The elimination of traditional supplemental costs related to room and board, travel, parking, and extracurricular expenses can very well make distance education a more economical solution for many students.
- **Flexible learning:** Not only does the distance education student have the ability to work when he or she wants, but he or she also has control over the pace of learning. The advantage of being able to set one's own pace without having to wait for the "rest of the class" to reach the same level of mastery saves the learner time that could be better used improving areas of weakness or exploring related topics of interest.
- **Expanded opportunities:** Opportunities to enroll in courses both nationally and internationally enhance the learner's exposure to a more diverse educational experience. The distance education student has the ability to gain insight from leaders in the profession in the comfort of his or her own surroundings.

As the interest in instructional technology continues to escalate, it is not surprising that universities are attempting to reach new student markets by enhancing the quality of distance instruction. Successful distance education programs are clearly linked to the quality of instructional applications and the extent to which the courses and programs meet the unique problems, needs, and capacity of the target audience (McNeill & Eddy, 2005). Although there are many advantages associated with distance education, it is important to be conscious of designing courses with pedagogical perspectives in mind. The U.S. Department of Education, Office of Post Secondary Education (2006) has identified common indicators of quality in distance education programs. These indicators include the following characteristics:

- A clear mission that includes a strong rationale for the distance education program that correlates to the mission of the institution.
- Centralized development of curriculum and instruction by a content expert including:
  - Defined course scope and objectives
  - Guidelines of course development and review of instructional materials established
  - Inclusion of active learning techniques, such as the use of personal risk assessments and methods that utilize diverse ways of learning (e.g., discussion boards, chat rooms)
  - Inclusion of program evaluation and assessment

- Faculty support services including training, access to specialized resources, and technical support designed to implement a distance education course.
- Attempts to plan for sustainability by incorporating student, academic, and faculty services as integrated components of the program. These plans might include:
  - Student support services to accommodate special needs of the distance learner, like a technical support line
  - Strategic technology plans to ensure quality, institutional support, and resources
- Incorporated techniques for evaluation and assessment.

In addition to the aforementioned indicators, two other commonly cited recommendations for developing quality distance education programs are providing opportunities for student–teacher interactions and providing prompt feedback (Chaney, Eddy, Dorman, Glessner, Green, & Lara-Alecio, 2007).

Internet Media

A by-product of the explosive growth in technology is the development of new jargon related to technology applications. Each type of medium, all of which may be used in distance education, provides a unique opportunity to retrieve or distribute information. The following sections attempt to describe various forms of commonly used media and highlight their unique features.

Web Lectures

Lectures are oral presentations designed to enlighten individuals about a particular topic. A web lecture is unique in that it performs this same function using the computer screen. Web lectures can be taped prior to or as they are being delivered and then made available for future viewing.

Podcasts

Consumers today have become accustomed to getting what they want when they want it. A podcast allows consumers to directly download or stream content from digital media formats at their convenience. A unique feature of a podcast is that it has the ability to be syndicated, subscribed to, and downloaded automatically to mobile devices such as an iPod, iPhone, or MP3 player. A student enrolled in a distance education course can download a podcast of a recorded lesson, which allows the student to listen to the lecture during the commute home from work or school.

Flash Animation

By using Adobe Flash, individuals have the ability to create animated films or Flash cartoons—what are commonly known as Flash animation. Once created, the Flash animations can be embedded on the distance education website. Flash animation methods are commonly used on video sharing websites like YouTube. Many video sharing sites are open source, allowing users to upload, view, and share video clips at no cost.

Videoconferencing

Videoconferencing has been with us for some time. Typically rooms are set up to handle a group of people who are linked to other sites that are similarly set up. The result is a sort of town meeting atmosphere where you can see and talk with others. Such sites are common at universities, community colleges, businesses, and many hotels. In addition, vendors often set up a site on a temporary basis for a special topic. Videoconferencing has become a common mode of operation to cut down on the costs and time required for travel.

A new twist on videoconferencing has come with the lowering of costs for hardware. Microphones and small digital cameras can now be purchased for as little as $15 each that will allow see-you-see-me conversations at any workstation so equipped (see Figure 6-3). Compatible software is required and, of course, an Internet provider. This holds true if it involves the next state or a distant country. The quality varies greatly depending on the speed of connection and the quality of the camera and other hardware.

Figure 6-3
Videoconferencing

Virtual Reality in Health Education: Immersive Education

People, by nature, like games. Games enable players to safely try new ideas and experience new scenarios that are often not available in real life. Technological advancements have put a new spin on the ability of educators to use games as a method to reinvent the excitement of learning through the use of virtual reality. Virtual reality (VR) digitally encapsulates multiple media sources such as books, slides, pictures, audio, and video to create a hypothetical three-dimensional world on the computer (Balan & Swift, n.d.). The field of health education has embraced the idea of game-based learning and training systems via digital and virtual reality applications. According to an article in *Futurist*, the economic impact of serious games—games designed to educate not just entertain—is more than $150 million, with approximately 20% of these games dedicated to health-related content (Tucker, 2008). It is apparent that VR has the potential to significantly impact and improve health education and health promotion efforts.

Virtual reality can work for educators as a tool in assisting students to become immersed in a learning environment. An award-winning example of this type of technological application is immersive education, a learning *platform* that combines interactive 3D graphics, commercial game and simulation technology, virtual reality, voice chat (Voice over IP/VoIP), webcams, and rich digital media with collaborative online course environments and classrooms (Alhadeff, 2008). In immersive education, the term platform refers to any virtual world—simulator or 3D environment—that may be used for teaching or training purposes. Participants create avatars (characters) to visit the virtual worlds, allowing them to have a sense of "being there" when exploring the various scenarios. Imagine, if you will, your avatar being the first responder at the scene of an earthquake, bombing, or sarin gas attack in Beijing (Tucker, 2008). Consider also the ability of your avatar to experience life as a red blood cell flowing through disease damaged blood vessels of the body and chambers of the heart. A virtual island might be used to have your avatar participate in a virtual seminar where selections for insurance coverage are made based on your individual profile. These types of activities would be too costly and impractical to undertake in the physical world; however, these opportunities are available over the Internet (Alhadeff, 2008). The ability to weave health education concepts into the fabric of everyday life—especially in an interesting and challenging game format—has the potential to make a serious impact on the health of our society.

Many universities are now employing such technologies as an extension of their online courses. One of the clear advantages is the different way students communicate with one another. Their avatars can meet and converse much more like a real life group meeting. The participating campuses have set up sites that usually look much like their real campus buildings for group and class meetings. Some virtual campuses include rain and snow to reflect their current campus weather conditions. In most cases the controller has

the weather set as ideal, which is an advantage for outdoor activities. The ability to set the weather as appropriate is something we have always wanted to do.

East Carolina University has an entire campus set up in "Second Life," one of the popular virtual environments, and is offering classes including several to high school students to prepare them for entering the less safe campus environment. One of the authors has an avatar for meeting with students.

Chat Rooms

Most people are aware of chat rooms on the Internet. Such locations allow people to "talk" simultaneously on the Internet, often anonymously. You enter a "room" of people with similar interests and are free to "lurk" or participate as you choose. Many people find such opportunities enjoyable and stimulating. There are chat rooms available for almost any topic. As health educators, we need to be aware of the many chat rooms that are available for health information or social support. Individuals with special interests run some of these rooms, and others are operated by vendors such as America Online (AOL) as part of the package they sell to consumers. As with other Internet sites, *caveat emptor* applies: "Let the buyer beware." Strong cautions are in order about ever accepting any medical advice from such sources. Clearly, competent medical practitioners are not going to give a medical diagnosis over the Internet. Many vendors find such sites a good way to sell their books or other products.

Despite these cautions, it should be recognized that chat rooms can provide valuable social support to patients and family members. This can be especially true if one is in an isolated area or has a condition that is uncommon in the local community. Chat room access can be an important aid for someone caring for a patient with a serious and demanding illness or even trying to improve their personal health. For example, smoking cessation chat rooms have proved popular and helpful to many. Chat rooms are easily accessible through most vendors and generally have posted schedules of meeting times. Health issues are common subjects for chat rooms. Many health organizations run chat rooms. Examples are Narcotics Anonymous, Alcoholics Anonymous, and Sex & Love Addicts Anonymous. Figure 6-4 shows an example of an invitation to join a chat room discussion.

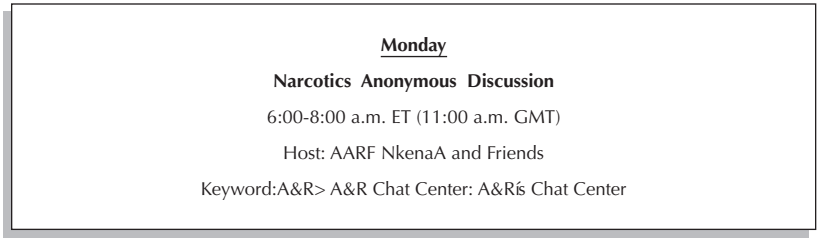


Figure 6-4
Chat Room Invitation

Objective: After reviewing the case study, the reader will discuss two or more potential hazards associated with the recommendations suggested to Pat while in the chat room.

Case Study: Pat

Pat finds a chat room on cancer. He is an observer for a couple of hours and then asks for information about his colon cancer. Quickly he receives recommendations regarding treatment centers. He also gets a recommendation to stop his current chemotherapy and to begin "inversion therapy." He is referred to the impressive-looking webpage of a Dr. Jacob Samm. According to Dr. Samm, "inversion therapy" is proven to eliminate many cancers, including his form of cancer. The focus of the treatment is an apparatus that allows users to hang upside down at least twice a day. Pat really is unhappy with the side effects of his current therapy and decides that the new therapy would be worth a try for a few months. (See Case Studies Revisited page 247.)

Questions to consider:

1. What are some "red flag" statements presented in the chat room that should elicit the notion of caveat emptor (buyer beware) for Pat?
2. What are the obvious dangers of Pat's use of the Internet?

Example: Positive Use of Chat Rooms

Theresa lives in an isolated area of Nebraska and has been caring for her grandmother who has been diagnosed with Alzheimer's disease. Day after day of working on her farm and looking after her grandmother has her tired and concerned that she is thinking ill of this woman she loves. She wonders if she is turning into an evil person because she has feelings that she thinks of as selfish—for example, wondering why she must be the one to constantly care for this woman. She attends a workshop on care of Alzheimer's patients run by a health educator who suggests that she join a chat room of like caregivers. After joining the chat room, she is surprised and relieved to hear many other caregivers express similar feelings. She finds the chat room helps her greatly with tips on helping her grandmother and on improving her self-esteem. She eventually even becomes one of the contributors.

Forums

Sites where you can post questions and later come back to read the replies, or where you post a note and ask people to respond to you directly, are called *forums.* Internet forums, formerly known as bulletin boards, are also referred to as web forums, newsgroups, message boards, or discussion groups. They are often topic specific, and many deal with health issues. Forums are set up much like chat rooms except that they are asynchronous, allowing you to add and review comments whenever you wish.

A pioneer in the use of technology by health educators is Michael Pejsach. He created the Health Education Electronic Forum (HEEF) before most health educators were ready to use it. Dr. Pejsach did much to raise awareness of health educators to the technology possibilities, but little use was made of the original service. His latest project is the Center for Excellence in Education about Health and can be found at www.healthbehavior.com. All health educators should review his new site.

Blogs

Similar to a forum, a blog is a website used to provide commentaries, descriptions of events, or opinions about a given subject. Blogs, however, are typically maintained by an individual and can be thought of as a digital diary that allows others to post comments that are typically displayed in reverse-chronological order (Wikipedia, 2008). Adding comments to your own blog or to another person's blog is referred to as blogging and has become a fairly common practice. According to Oomen-Early and Burke (2007), the use of blogs may serve as a powerful teaching resource for health education and a conduit to encourage individuals to take social and political action. Integrating blogging methods into classes has been shown to increase student motivation, critical thinking, class interaction, and student course satisfaction (Beldarrian, 2006; Halavais & Hernandez, 2004; Oomen-Early & Burke, 2007; Williams & Jacobs, 2004).

Social Networking

Social networking venues allow users to build personal "spaces" on a webpage, creating a user-submitted network of friends, personal profiles, blogs, groups, photos, music, and videos (Wikipedia, 2008b). Two examples of more popular social networking sites are Facebook and MySpace; however, in the field of health education, researchers and practitioners often will subscribe to the Health Education Directory, or HEDIR (pronounced heater).

The HEDIR was created in 1992 by Mark Kittleson, 2008 American Association of Health Education (AAHE) scholar, to help the health education profession incorporate technology, hence the acronym HEDIR. As stated on its website, the purpose of the HEDIR is to provide an electronic directory of health educators throughout the world where one can search by name, state, or professional interests and to provide an electronic communications system for news of interest to professionals and students on the listserv in the field of health education (Kittleson, 2008). Dr. Kittleson's site (http://hedir.org/) is a must-see for any health educator because it includes many useful features, including:

- A directory of health educators
- A directory of health educators by state and country
- A listserv (HEDIR) for practicing health educators
- Job openings
- . Archived messages from the listserv
- An electronic journal for health educators
- A chat room for health educators

Health educators also are encouraged to join the HEDIR group on Linked In, located at http://www.linkedin.com.

Finding Colleagues

Although the HEDIR is clearly a dominant source in health for locating colleagues, the Internet has expanded our ability to locate colleagues and people of similar interests. Most search engines now have databases of phone numbers, email addresses, and postal addresses. Most are a collection of available phone directories and assorted email directories. Simply enter the name and any other information you have on the individual into the search engine and it will provide a list of possible matches. It is fun to look for a long-lost friend or colleague. You may need to use several different search engines to find the latest information. One of the authors recently looked up his own address and found that most directories listed where he had lived and worked 2 years ago. Only by using a fourth search engine did he find the correct information. See Figure 6-5 for an Internet activity.

For more information and tools related to this chapter visit http://healtheducation.jbpub.com/strategies.

Find each site on the Internet and enter the URL (complete address). Good hunting!

SITE/ADDRESS	URL/ADDRESS
Twitter page of Mark Kittleson (health educator)	
MMWR	
Robin Sawyer academic vita (health educator)	
New York University professional resources—job postings in community health education	
Maryland Dept. of Health Education	
NCHEC–National Commission for Health Education Credentialing, Inc.	
The Youth Risk Behavior Surveillance System (YRBSS)	
HEDIR Directory for North Carolina	
ECU Department of Health Education and Promotion	
Society of Research Administration SRA's Grantsweb	
Go Ask Alice–Rohypnol	
Ann Rose's Ultimate Birth Control Links: Provide a proper APA citation of some located information here:	
Glen Gilbert's research interest (health educator)	
Elisa McNeill's philosophy of education	

Figure 6-5
Health Internet Scavenger Hunt

NOTEWORTHY Netiquette

A set of societal standards for Internet use exists. These guiding principles represent what is considered to be appropriate etiquette, or **netiquette**, for any type of electronic communication. Oscar Sodani (2003) suggests users practice netiquette by adhering to the following practices:

1. **Communicate clearly and politely.** Be aware that the absence of nonverbal cues can sometimes change the way a message is perceived.
2. **Be brief.** Time is a precious commodity for all. Strive to make your point while keeping your communications reasonably short.
3. **Keep to the topic.** If you are communicating in a chat room, newsgroup, or forum that is dedicated to the topic of AIDS awareness, it is not a good idea to start a conversation about the gold medal count of the last Olympics. People who are participating in the discussion are there for a reason.
4. **DON'T SCREAM.** WHEN YOU TYPE A MESSAGE IN ALL CAPITAL LETTERS, IT LOOKS LIKE YOU ARE SCREAMING. IN ADDITION, IT IS MUCH HARDER TO READ. Type everything in lowercase letters or mixed case if you want your communiqués to be read and accepted.
5. **Avoid flame wars.** Messages written to irritate the recipient are referred to as a **flame**. Flames often contain offensive material and are not considered appropriate electronic dialogue. The term is also used as a verb: If I send nasty emails to a colleague, then I have flamed him. It is a faux pas to electronically flame others. Keep in mind that the most effective way to end a flame is to ignore it. It is hard to fight with someone who does not fight back.
6. **Think before you type.** Unless your message is encrypted, it is not secure; thus it may be read by unintended recipients. Be certain what you type today is safe to be read later.
7. **Provide the subject.** The subject line helps the recipient to filter and to prioritize electronic correspondences. A brief, yet descriptive, subject line can alert the individual to items of high interest.
8. **Lurk before you post.** Before posting messages, take time to review the guidelines and explore what is currently posted. This practice is known as lurking. It is possible that the comment or question you might want to ask has already been asked and is available in the discussion archives or available in a FAQ (frequently asked questions) section.

EXERCISES

1. Select any health topic and perform *two* searches using different search engines (e.g., Yahoo!, Google, AltaVista, Bing). See how different the results of your search are, based on the first 20 sites listed by each search engine.

2. Using the evaluation criteria described in this chapter, access and evaluate five websites of your choice.

3. Select a health topic that might be deemed by some people to be controversial. Conduct a

search on this topic, and try to identify two sites that offer opposite viewpoints. In your opinion, which site appears to be the most credible, and why?

4. Access an electronic health-related journal, and then read and critique in writing any article that you choose from the journal.

5. Access an electronic journal article. Compare and contrast its layout style to that of a traditional paper article.

6. Select a health topic of interest, and use the Internet to see if you can obtain the most recent incidence or prevalence data for that particular topic. What is the source for your data, and would you consider it reliable?

7. Locate the email addresses and websites of the authors of the textbook.

8. Locate chat rooms for prostate cancer and breast cancer.

9. Find the website for HEDIR, and determine what role students can play in it.

10. Examine the distance education offerings of your campus. Find a health education course similar to this one on the Internet. What do you see as the strengths and weaknesses of such courses?

11. Complete the Health Internet Scavenger Hunt found in Figure 6-5.

CASE STUDIES REVISITED

Case Study Revisited: Robyn

Robyn clearly felt overextended and preoccupied as she prepared materials for her workshop. This may have just been a bad day for her, or it may have been indicative of a chronic problem with leaving things until the last moment. Robyn's dilemma cannot be blamed on the Internet; however, this case provides an excellent example of the dangers of collecting information from a website without evaluating the source. Following the evaluative steps discussed in this chapter cannot guarantee that information gleaned from the Web will always be absolutely correct, but had Robyn performed even a cursory eval-uation of the websites, she might have avoided what must have been total humiliation and loss of face. The mere existence of a website is in no way indicative of legitimacy . . . check the source! (See page 223.)

Case Study Revisited: Pat

A phrase such as "proven to eliminate" and the unorthodox approach to treatment appears to be easily recognizable as questionable, yet in Pat's desperate attempt to find relief he may be vulnerable to the charms of a modern day "snake oil" salesman.

After a month of "inversion therapy," Pat is not feeling well. He returns to his physician, who says the cancer has progressed far more than expected. Probing, she learns of Pat's self-treatment. She encourages him to go back to his chemotherapy and warns him of the dangers of self-treatment. The physician also discusses the proper use of the Internet and even encourages such use and sharing of information. She also says Pat can use "inversion therapy" if he wants to as long as it does no harm but explains that she is ethically bound to inform him that she knows of no study that supports the

claims of the treatment. She seems relieved when he says he will stay with chemotherapy and drop the "inversion therapy." Later Pat learns that Dr. Samm has a Ph.D. in geology and makes "inversion therapy" equipment in his basement. (See page 242.)

SUMMARY

1. The information explosion that occurred mostly in the 1990s has created an "age of information," and health educators need to be proficient and comfortable using this new medium to their best advantage.

2. The Internet offers a wealth of information sources that represent a great opportunity for all users. However, unlike written resources, most materials placed on the Internet are virtually unregulated in any way, and users need to develop evaluative skills to protect themselves from erroneous, misleading, and biased information.

3. Through the use of technology, teachers, presenters, and workshop facilitators have an outstanding opportunity to expand the world of their students/participants. Health educational professionals need to become familiar with as many facets of this technology as possible.

4. When using the Internet for research purposes, health educators should be able to effectively assess the legitimacy of the information and correctly cite the source of information.

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