Connecting
Learners at a Distance

Connecting
Learners at a Distance

Knowledge Outcomes

This chapter addresses ISTE NETS-T 1, 2, and 3.

1. Define distance learning.
2. State a rationale for the educational use of distance learning at the elementary, middle-level, and secondary education levels.
3. Explain how audio and television systems facilitate distance learning.
4. Compare and contrast online and distance learning.
5. Describe the characteristics of local area networks (LANs), wide area networks (WANs), intranets, and wireless networks.
6. Discuss five Internet netiquette guidelines for users.
7. Select an example of a copyright concern and explain why it is an important issue.

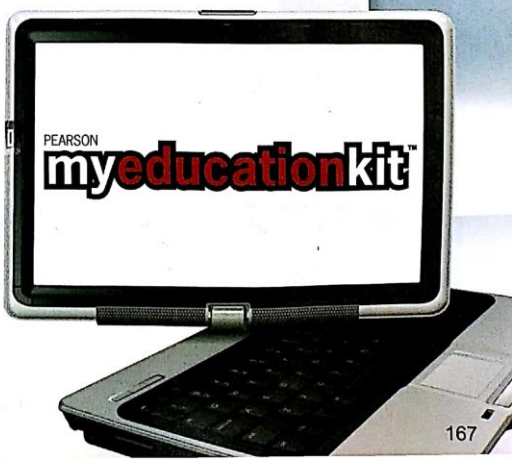
Goal Describe distance education and how it can facilitate student learning.

ASSURE Classroom Case Study

This chapter's ASSURE Classroom Case Study describes the instructional planning of Jimmy Chun, a high school teacher in Hawaii, to incorporate distance education into his social studies course. His primary goal is to build connections between his students and students on the mainland, specifically in New Hampshire, to increase their understanding of pre-1770 U.S. history. This particular time frame includes direct connections between the Hawaiian Islands and key historical events involving New Hampshire. Mr. Chun works with a fellow teacher located in a New Hampshire high school. Together they develop a lesson in which students exchange historical as well as current information from their states.

*To view the **ASSURE Classroom Case Study** Video for this chapter, go to the MyEducationKit for your text and click on the ASSURE Video under Chapter 7 to explore how Mr. Chun works with another teacher to apply strategies for teaching at a distance and uses technology, media, and materials to achieve 21st century learning environments.*

Throughout the chapter you will find reflection questions to relate the chapter content to the ASSURE Classroom Case Study. At the end of the chapter you will be challenged to develop your own ASSURE lesson that incorporates use of these strategies, technology, media, and materials, for a topic and grade level of your choice.

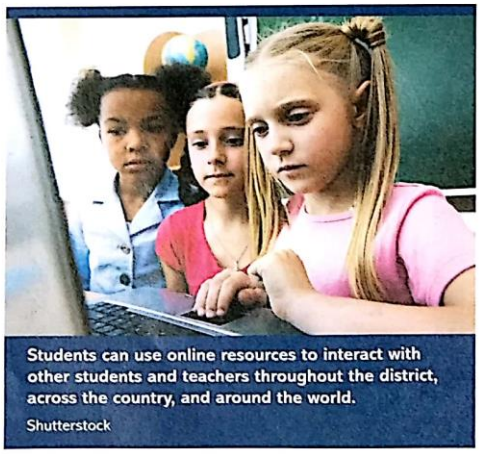


INTRODUCTION

One of the greatest advantages offered by modern electronic technology is the ability to instruct without the teacher's direct presence in the classroom. That is, we can both **time-shift** instruction—experience it at some time after the live lesson—and **place-shift** instruction—experience it at some place away from the live teacher. The book was the first invention that made it possible to time-shift and place-shift instruction, a use that continues to the present day (Figure 7.1).

For more than a century, people in all parts of the world have been able to participate in guided independent study through correspondence courses via the traditional mail system. Learners receive printed lessons, do written assignments, send them to the remote instructor, and get feedback. However, the proliferation of newer electronic technologies now makes it possible to experience place-shifted instruction with a stunning array of additional auditory and visual stimuli far more rapidly and with a much richer range of interaction, not only with the instructor but also with other learners. This chapter introduces the foundation of distance learning concepts and provides general information about delivering instruction at a distance.

As a teacher, you need to be aware of the variety of options discussed in this chapter for both instruction at a distance, a broad concept incorporating an array of technologies, and online learning, which relies on computer-based resources. You need to be able to select the best technology and media to support your students' learning. You can use the suggestions in this chapter to help you prepare to guide your students who are learning at a distance.



Students can use online resources to interact with other students and teachers throughout the district, across the country, and around the world.
Shutterstock

Figure 7.1
Types of Distance Education

DISTANCE LEARNING LITERACY

Distance learning has become the popular term to describe learning via telecommunications. The term **telecommunications** embraces a variety of technology and media configurations, including audio, video, and computer-based resources. What they all have in common is implied in the Greek root word *tele,* which means "at a distance" or "far off"; that is, they are systems for communicating over a distance. As we explore the broad topic of distance learning we will focus on both the more traditional forms of audio and video at a distance as well as online learning, which is a popular form of distance learning. Desmond Keegan (1980) identified key elements of a formal definition of distance education, which have not changed with the advent of newer technologies for delivery:

- Physical separation of learners from the teacher
- Organized instructional program
- Telecommunications technology
- Two-way communication

The emphasis on student learning, whether in a teacher-led or student-centered environment, is as important in a distance education setting as it is in a traditional classroom. These instructional strategies apply to the same degree in distance settings as they do in the regular classroom. Regardless of the technology used, from live teacher to computer conferencing, an instructional telecommunication system must perform certain functions to be effective:

- *Information presentation.* A standard element for any lesson is presentation of information, involving not only

Videoconferencing systems can be designed so that the teacher can select the image to be shown to all the students with a single mouse click.
iStockPhoto

teacher-led methods but also procedures within student-centered approaches. Common examples include the following:

- Teacher presentation and demonstration
- Student presentation or small-group work
- Printed text and illustrations (e.g., textbooks, handouts, correspondence, study materials)
- Live or recorded voice, music, and other sounds
- Full-motion images (video, CD, DVD)

- *Practice with feedback.* We know that the most learning takes place when learners are participating actively—mentally processing the material. Teachers induce activity in various ways, such as the following:

  - Question-and-answer activities (carried out during or after the lesson)
  - Discussion activities (during the class or as homework)
  - Testing
  - Structured group activities (e.g. role playing or games)
  - Group projects
  - Peer tutoring

- *Access to learning resources.* Lessons and courses are usually structured with the assumption that learners will spend time outside class working individually or in small groups with the material, doing homework, projects, papers, and the like. External learning resources include the following forms:

  - Printed materials (e.g., textbooks, supplementary readings, worksheets)
  - Audiovisual materials (e.g., CDs, DVDs, online resources)
  - Computer databases (e.g., for online searches)
  - Kits (e.g. for laboratory experiments or to examine specimens of real objects)
  - Library materials (e.g., original source documents)

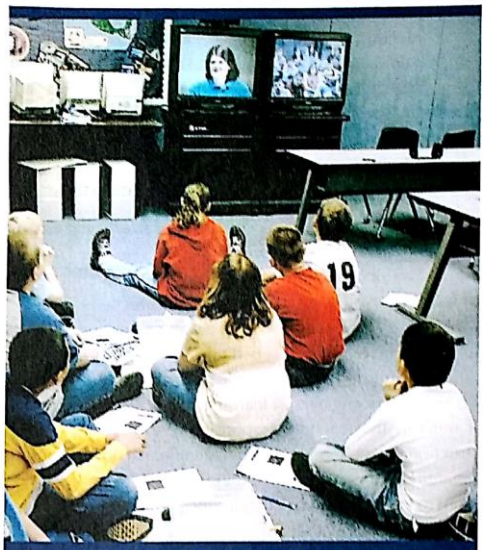
It is necessary to think about the instructional setting in a new light. The classroom is now a *series* of "rooms" connected electronically. The teacher's role may shift to that of facilitator of the learning rather than directly leading the class. The teacher must also keep a watchful eye on the class to be sure no one is falling behind.

With the latest technological advances, students can become more engaged in learning through interactions, yet it remains the teacher's responsibility to organize the instructional experience to encourage interactivity (Simonson, Smaldino, Albright, & Zvacek, 2006). Students for their part need to know how to use the distance education technology to communicate with the teacher and with each other using proper communication etiquette.

As we look at these elements of distance education we begin to see that all the ISTE NETS standards for teachers relate to the type of knowledge and skill teachers need to bring to learning experiences within a distance learning setting. Using the NETS-T standards we are prepared to define the literacy of distance learning with the following descriptors:

- Designing and facilitating learning experiences
- Modeling and promoting learning and responsibility
- Engaging in lifelong learning

Teachers can use technology to help them monitor the class when teaching.
Corbis RF



The quality of the televised images has improved with technology development so that learning at a distance is similar to being in the classroom.

Joe Don Buckner/AP

DISTANCE LEARNING

There are three primary types of distance learning resources used to support student learning: audio, video, and online, which we will describe briefly for you. When using any of these methods, you should consider copyright issues. In this chapter, we present issues of copyright as they relate to distance education.

AUDIO TECHNOLOGY

Audio has a rich history of facilitating instruction at a distance. Radio was one of the first technologies used to deliver education remotely. Although not used much today in the United States, there are still instructional applications of radio in some international settings, often in rural areas where Internet connections are very limited resources.

The key to successful use of audio in instruction is to consider what resources are available to students at various locations and to be aware that sometimes audio may be sufficient to convey the learning experience. To use audio as a viable option for delivery of information, resources such as cassettes and CDs can be mailed to students for individual use or a conference call can be established among members of a class as means for two-way communication.

An **audio teleconference**—a live, interactive conversation using telephone lines, satellites, or the Internet—connects people at different locations. One issue associated with relying only on audio transmissions is the lack of visual information. However, audio can be supplemented by providing visual information such as handouts or a PowerPoint presentation sent by fax (facsimile) or email or with a course management tool such as Blackboard or Moodle.

VIDEO TECHNOLOGY

There are three major types of video technologies: streamed video, television, and CD/DVD.

Streamed Video. Delivered via the Internet to computers, **streamed video** can be viewed on individual computers or

WHEN to USE Audio Technology

Use when student learning will be enhanced by . . .

Guidelines	Examples
connecting students with resource people	Students can interact with an author about his or her book or with public officials to discuss current legislation.
reaching the rural student	Students can "attend" an advanced placement course that might have been unavailable otherwise.
working collaboratively with other students	Students can discuss projects or assignments at a time or location that best meets their needs.
reaching a student unable to attend class due to illness or disability	Students do not need to miss class discussions or other instruction because they are restricted to home.

Figure 7.2
Learn 360
Streamed video can be used in nearly every content area.
Source: www.learn360.com. Reprinted by permission.

through a digital projector connected to a computer for the whole class to watch. The prerecorded video is transmitted to the computer in packets or small segments to make the downloading of the video easier and less of a memory drain for classroom computers. Video titles are available in nearly every content area for prekindergarten through grade 12, usually through a subscription obtained by the school district, thus making it possible for all teachers and students to access videos at any time. In addition, many streamed video titles also include instructional suggestions, handout masters, and other supplementary materials. To add flexibility, teachers can decide in advance to use only sections of a video, thus customizing the experience to ensure that students will view only those portions of the video that are critical to their learning. United Streaming through Discovery Education and Learn360 are both sources for hundreds of titles in all content areas and grade levels (Figure 7.2).

Television. Television technologies offer many different types of instructional opportunities for learners. Students can engage in independent learning by viewing programs on such channels as Discovery or the History Channel. More formally, learners can be enrolled in a televised course that is required for credit or graduation from a program of study.

We use the term *one-way television* to refer to television delivery systems that transmit programs to students without an interactive connection to the teacher. However, virtually all television delivery can be converted into a *two-way television* communication system by using a device for sending audio feedback to the presenter. The talkback capability can be added by means of a telephone for calling the originating classroom (Figure 7.3). In other interactive settings with two-way communication of both audio and video, interaction is achieved by equipping both the sending and receiving sites with camera(s) and microphone(s) (Figure 7.4). A school may operate its own video teleconference facilities or lease them as needed for particular occasions. In such cases, television simulates the regular classroom setting by allowing interactions between students and teacher. Note that some interactive television systems use **compressed**

WHEN to USE One-Way Television Technology

Use when student learning will be enhanced by . . .

Guidelines	Examples
reinforcing classroom instruction	Younger students can watch a program at home with parents that will help reinforce a specific lesson from the classroom.
expanding the textbook material	Some textbooks have limited information on a topic that might be expanded by viewing a documentary.
supplemental information	Students can become better informed on a topic of interest while viewing an instructional or informative television program.
keeping current	Students can watch the evening news or other types of news programs to gather up-to-date information for classroom discussions.

Teachers should guide students in their viewing of television programs.
Will Hart/PhotoEdit

video, which removes redundant video information, for distribution. Although the video information appears "jerky," it is much less expensive to deliver than full-motion video. Compressed video is also used for computer desktop video.

CD/DVD. Video can be stored on CD and DVD discs that can be purchased by individual schools or borrowed from a consortium collection for a period of time. Video can also be rented from a local video store or ordered online through a video rental company. A word of caution is advised regarding restrictions for the viewing of rented video. Video on CD or DVD can be viewed on individual computers or displayed for the whole class to view with a digital projector. A DVD can also be viewed on a DVD player connected to a television or monitor for whole-class viewing.

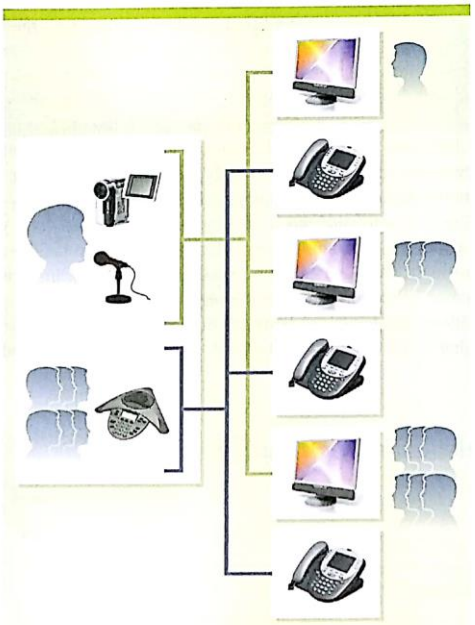


Figure 7.3
One-Way Television Technology
One-way video with two-way audio is probably the most familiar interactive instructional television system.

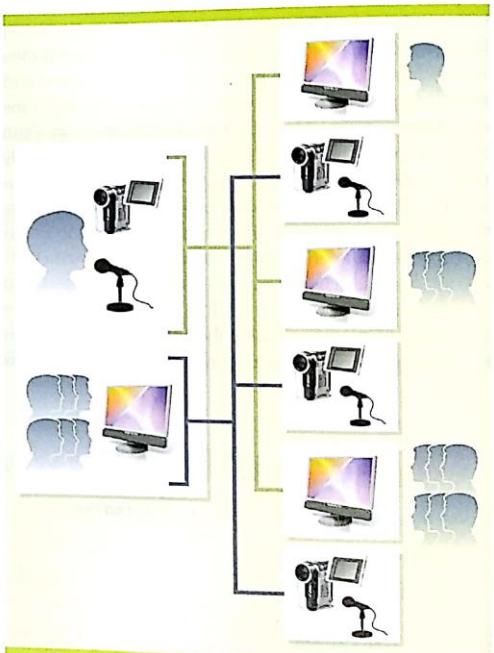


Figure 7.4
Two-Way Television Technology
Two-way video and audio allow full interactivity but need camera and microphone systems at each site on the system.

WHEN to USE Two-Way Television Technology

Use when student learning will be enhanced by . . .

Guidelines	Examples
extending classroom instruction	A group of students from across the state or around the world can be added to classroom discussions to extend learning experiences.
expanding the textbook material	A guest speaker can be part of the class presentations on a topic.
reaching the rural student	Students who have limited access to courses needed to expand their knowledge or to prepare them for college can take a course from a distant school location.
supplemental information	A teacher from another school can add to the instructional experiences of a whole class.

©opyright Concerns

Distance Learning

In 2002, Congress revised the distance learning aspects of the copyright law by passing the TEACH Act. It extended fair use into the digital world and acknowledged that the boundaries of teaching space extend beyond the walls of a classroom. The act allows greater liberty to teachers in their use of materials in an online environment, permitting the display and performance of nearly all types of materials (visuals, sculpture, art, music, video, etc.) meeting the following conditions:

- The transmission is an integral part of a systematic, ongoing instructional activity mediated by an instructor.
- The transmission is directly related to and of material assistance in the teaching of content.
- The transmission is solely for and limited to students officially enrolled in the course.
- The teacher informs students that materials used may be subject to copyright protection.
- The institution employs measures to prevent retention of the materials in accessible form by the students for longer than the duration of the course.
- The institution employs measures that limit the transmission of the material to students enrolled in the course and precludes unauthorized student retention and/or redistribution to the extent technologically feasible.
- In order to facilitate digital transmissions, the TEACH Act permits scanning of some materials, but only if the material is not already available in digital form.

Certain specific restrictions are spelled out for use of copyrighted material in distance education:

- There is a time limit on use, comparable to the time the materials would be used in a face-to-face class. One may not continue to use the copyrighted materials beyond the duration of the semester the course is offered nor may the materials be used another semester without prior permission.
- Teachers may ***not*** transmit textbooks, printed materials, or other media (including CDs and DVDs), which are typically purchased or acquired by students.
- Off-air recordings may ***not*** be altered from their original content. They may ***not*** be combined or merged (physically or electronically) to constitute teaching anthologies or compilations.

For more information, visit the Technology, Education, and Copyright Harmonization (TEACH) Act (2002) website at www.ala.org/washoff/teach.html.

ONLINE TECHNOLOGY

Online learning (also called **electronic learning,** or **e-learning**) is instruction delivered electronically using computer-based media. The materials are often accessed through a network, including websites, the Internet, and intranets. However, e-learning involves not just accessing information (e.g., locating webpages) but also assisting learners with specific outcomes (e.g., meeting objectives). In addition to delivering instruction via e-learning, the teacher can monitor performance and report learner progress.

The uses of online learning in education are increasing. Students no longer need to rely only on textbooks but now have access to educational materials located far beyond the walls of the school building. You and your students can obtain information housed in many distant, physically inaccessible libraries around the world! Resources once beyond the dreams of all but the most affluent are readily available to everyone.

Students and teachers can enhance classroom learning by accessing information from an array of sources (databases, libraries, special interest groups) and by communicating via computer with other students or with experts in a particular field of study and exchanging data. Activities such as the Monarch Butterfly Journey North conducted by the Annenberg Foundation and the GeoBee Challenge of the National Geographic Society make it possible for students and teachers alike to reap the benefits of connecting into a national network of students, teachers, and scientists to investigate a variety of topics (Figure 7.5).

Teachers and their students can also access electronic documents to enrich their study. Students can actively participate because online learning provides an interactive learning environment. Students can hyperlink digital information to their papers and projects, making them "living" documents connected to other segments of their work or to additional documents or visual resources.

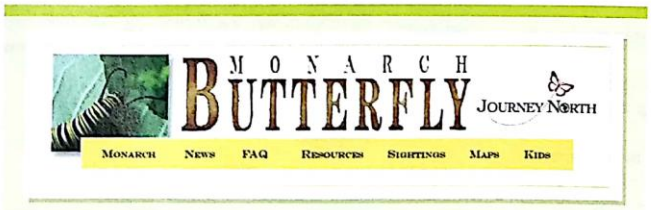


Figure 7.5
Monarch Butterfly Journey North
Online learning projects such as this enhance classroom learning by providing access to data, videos, maps, and other resources.
Source: www.learner.org/jnorth/monarch. Reprinted by permission of Journey North.

Because computers have the ability to deliver information in any medium (including text, video, and audio recordings of voice and music), the computer has become a boundless library. Students are able to communicate instantly with text, picture, voice, data, and two-way audio/video, and the resulting interactions are changing the roles of both students and teachers. Teachers can now be separated geographically from their students, and students can learn from other students in classrooms all over the world.

Often e-learning is combined with live face-to-face instruction and called **blended instruction,** or **hybrid instruction.** In the following sections we will explore learning using various technologies for instruction, as well as the issues associated with their use.

TEACHING AT A DISTANCE

When teaching at a distance, many issues need to be considered. Teachers have learned that it involves more than simply taking an existing lesson and "doing it" using audio, television, or the computer. There are many aspects that need to be adjusted or changed. A teacher needs to organize and sequence content as it relates to outcomes, know what resources are available, what experiences students have had with the system being used, and what they need to do to ensure quality learning experiences (Dabbagh & Bannan-Ritland, 2005).

One element often overlooked in distance learning is the access students have to resource materials. If a teacher wishes students to engage in research or working together in a problem-solving or collaborative activity, it is critical that the students have access to related materials, for example, books in the media center or Internet resources. A teacher may need to change particular types of hands-on activities or make special arrangements for materials to be sent to the classroom site. Students at a distance location should not be at a learning disadvantage because of limited resources. The teacher, often working closely with the school library media specialist, is responsible for ensuring that all students have equal access to the materials essential for learning. Although the World Wide Web has eased this concern a bit, there are still some courses in which resources for students are not readily available on the Web or copyright issues do not allow using the Web to provide those resources. Your school library media specialist should be aware of the copyright issues and able to help you provide access to materials (see Copyright Concerns: Distance Learning).

Copyright Concerns

Online Learning

Frequently, unauthorized copies of copyrighted works are posted on a website without the knowledge of the copyright owner. Recently the authors found the ASSURE model on five websites without attribution to its source. The casual observer would assume it was developed by the organization on whose website it was found. Instead, each of the cases involved a serious violation of copyright law!

Observe the following guidelines for online use of copyrighted materials:

- Contrary to popular opinion, ***all*** material on the Internet is copyrighted unless stated otherwise. It is copyrighted even if it does ***not*** display the copyright symbol.
- Email is considered an original work, fixed in a tangible medium of expression, that is covered by copyright. It can legally be read, but ***not*** legally forwarded or copied for instructional purposes, except under fair use. You can make one copy for your personal use.
- It is recommended that you ***not*** forward any email without permission, in consideration of both copyright and the Privacy Act. However, you may quote excerpts and report the "gist" of the message. For example, if a teacher has sent you an original poem, which is automatically copyrighted, and you forward it to a friend, then you have definitely violated ***both*** copyright law and the Privacy Act (adapted from Becker, 2003).
- Downloading an article from a newspaper's website, making copies, and distributing them to your students prior to a class discussion on the topic is permissible following the current photocopying guidelines, which permit making multiple copies for classroom use. The exception would be individually bylined, copyrighted articles, or articles from a source specifically designed for the educational market (e.g., *Scholastic Magazine*). Such articles ***cannot*** be copied legally for class distribution (adapted from Becker, 2003).
- You cannot post students' essays, poems, or other works on the school website unless you have permission of the students and their parents or guardians.
- Always link to the home page rather than a location within the website. In general, linking to another website is not viewed as a copyright infringement. However, it does offer the potential of becoming a copyright issue. If the link takes the user to the body of an author's work, and the initial website does not inform users they are being taken to another site, this may falsely give the impression that one is still on a page within the original website being viewed, thereby not giving credit to the linked site (Becker, 2003).
- Downloading and/or file sharing of video, audio, and other works is considered copyright infringement unless authorized by the copyright law or the owner of the work.
- Educators should treat copyrighted materials from the Internet the same way they do print formats. Because the copyright law is still muddled, the best guideline is to always obtain permission. It is usually not that difficult. When in doubt, ask!

WHEN to USE Online Learning Technology

Use when student learning will be enhanced by . . .

Guidelines	Examples
practicing and receiving immediate feedback on what they have just studied in class	Students who need extra help can practice a skill or task by using an instructional module that includes a self-check with feedback.
learning independently	Students can search for information related to assignments on a classroom computer connected to the Internet.
enhancing learning opportunities for gifted students	Gifted students can be challenged to expand or enhance their learning by using more complex search techniques on the Internet.
working collaboratively with other students	Students in two locations or the same classroom can work together to navigate through a WebQuest that directs them to a particular area of study.
challenging students to investigate information in a new way	Students can participate in an online investigation of a topic with other students or scientists across the world.

ASSURE Case Study Reflection

PEARSON myeducationkit

Review the ASSURE Classroom Case Study and video at the beginning of the chapter. Explain how distance learning technology is helping students to learn history. How does Mr. Chun support learning through the use of information presentation, practice with feedback, and access to learning resources?

STRATEGIES AND APPROACHES

The emphasis on student learning, whether in a teacher-led or student-centered environment, is as important in a distance education setting as it is in a traditional classroom. These instructional strategies apply in distance settings, just as they do in the regular class setting. Regardless of the audio, video, or computer-based technology used or whether the lesson takes place in actual time by computer conferencing or through time-delayed interactions, an instructional telecommunication system must perform certain functions to be effective:

- *Information presentation.* A standard element in any lesson is the presentation of some sort of information, involving not only teacher-led methods but also procedures within student-centered approaches. Common examples include the following:
  - Teacher presentation and demonstration
  - Student presentation or small-group work
  - Text and illustrations to support presentation (e.g., digital or print images, handouts, correspondence study materials)
  - Live or recorded voice, music, and other sounds
  - Full-motion images (video, CD, DVD)
- *Practice with feedback.* We know that most learning occurs when learners are participating actively—mentally processing the material. Teachers induce activity in various ways, such as the following:
  - Question-and-answer activities (carried out during or after the instruction)
  - Discussion activities
  - Testing
  - Structured group activities (e.g., role playing or games)
  - Group projects
  - Peer tutoring

The proliferation of telecommunications makes information accessible at more locations beyond the school building.
Travis Morisse/AP

- *Access to learning resources.* Lessons and courses are usually structured with the assumption that learners will spend time outside of class working individually or in small groups with the material, doing homework, projects, papers, and the like. The external learning resources may take the following forms:
  - Printed materials for additional reading (e.g., library or textbooks, supplementary readings, worksheets)
  - Audiovisual materials (e.g., audio- or videocassettes, multimedia systems, CD, DVD)
  - Computer databases (e.g., for online searches)
  - Kits (e.g., for laboratory experiments or to examine specimens of real objects)
  - Library materials (e.g., original source documents)

As in a regular classroom, various technology, media, and materials can be employed in a distance learning setting (Figure 7.6). Each of the various telecommunication systems

Audio	Video	Text
Audio teleconference	Television	Bulletin board posting
Podcasting	Vidcasting	Correspondence (email/mail)
Audio recordings (tape or digital)	Online video	Blog/Wiki

Figure 7.6
Examples of Media Used in Distance Education

used in distance learning has strengths and limitations. The characteristics of the systems are discussed at greater length in the following sections of this chapter.

CRITICAL ISSUES

There are many important issues associated with electronic learning, especially when using the Internet. They include security, monitoring student use, acceptable use policies, and netiquette.

Security. Students should be instructed not to give out information such as their phone numbers, addresses, or other personal information over the Internet. Students have been contacted and even harmed by unscrupulous individuals. It may be wise for students to give their school's address for correspondence if they need to provide such information. Also, as a teacher, you must have parental permission to post children's photos and written work, such as essays, poems, and artistic creations, on the Web.

The Center for Education and Research in Information Assurance and Security (CERIAS) focuses on multidisciplinary research and education about information security. The organization is concerned with supporting educators on issues of privacy, ethics, and management of information. Exploring issues such as confidentiality of student records, privacy of information, and protection of students while they work online are important considerations. This organization provides guidelines for educators to establish policies within their schools to protect students, teachers, and the school community (contact them at www.cerias.purdue.edu).

Monitoring Student Use. Teachers and parents must monitor students' Internet use to ensure that their behavior is appropriate and to discourage them from exploring inappropriate material either deliberately or accidentally. The amount and level of monitoring is often based on the age of the students—younger students *may* need more monitoring than older students. Your final decisions about monitoring should be made in conjunction with parents and school administrators. Also, if a student encounters information or visuals that are inappropriate, that student should feel comfortable letting you know about it. Software can assist with monitoring student access to information. For example, Snapture software allows the teacher to prevent students from going to sites that are "off limits." The software makes it possible for the teacher to "copy" the site and save it on the local computer hard drive. In this case, students simulate visiting the Web but are not actually connected.

Close supervision is essential. There is no organization or agency controlling activity on some computer networks. It is important for teachers to work with parents to understand their responsibilities regarding student access to information outside the school setting. Control is in the hands of individuals; consequently, students may access questionable materials. Schools and libraries are required to have an Internet filtering system installed on their networks. Software such as NetNanny or Content Barrier is available for home use to prohibit access to topics specified by a parent.

Acceptable Use Policy. Agreements among students, parents/guardians, and the school administration outlining what is considered proper use of the Internet by all parties involved, **acceptable use policies (AUPs)** have been developed by most schools. Check to see if your school has such a policy.

The policy usually includes a statement that the school will do what it can to control access to inappropriate information, that students will accept responsibility for not accessing such information, and that parents understand the possibility that children may access such information in spite of the school's efforts. All parties sign the document agreeing that they have read and will abide by the policy. Most states' departments of education have generated resources to assist educators in developing AUPs for their schools. For additional information on this topic, go to the Web Resources at the end of this chapter.

Netiquette. There are informal rules for appropriate behavior on the Internet. If the Internet is the information superhighway, these are the "rules of the road." Referred to as netiquette, they apply to email, texting, and to other interactions on the Web:

- Keep your message short and simple. Try to limit your message to one screen. Think before you write. Make it brief, descriptive, and to the point.
- Identify yourself as the sender somewhere in the communication, including your name and school address. Not all Internet addresses clearly identify the sender.
- Double check the address or URL before sending a message.
- When replying to a message, include the pertinent portions of the original message.
- Don't write anything you would not want somebody other than the receiver to read. Email can be intercepted or forwarded.
- Check spelling, grammar, and punctuation. Use lowercase letters except for proper names and beginnings of sentences. When texting, use common conventions where appropriate.
- Be sensitive to others. Treat other people with respect and courtesy, especially in reference to social, cultural, and ethnic differences.
- Don't use sarcasm. It often falls flat and doesn't come across as you intended.

- Be careful with humor. It is a two-edged sword. The reader doesn't have the benefit of your facial expression, body language, or tone of voice. You can use **emoticons** or "email body language" such as ;) for a wink or :(for a frown, but this type of humor doesn't communicate as well as being there.
- Cooperate and share. Consider yourself a guest on the system just as if you were a guest in someone's home. Make an effort to share pertinent information. In exchange for help and information you receive, be willing to answer questions and to share your resources.
- Carefully consider copyright. Just because something can be copied electronically doesn't mean it should be distributed without permission. Unless stated otherwise, *all material* on the Internet is copyrighted.
- Be alert for obscenity. Laws governing obscenity apply to messages on the Internet. Moreover, even material that is not deemed legally obscene may still be inappropriate for school-age children.

ASSURE Case Study Reflection

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Review the ASSURE Classroom Case Study and video at the beginning of the chapter. Identify the use of distance learning technology in helping students to learn history. How has Mr. Chun ensured student safety and appropriate interactions when his students are interacting with others? What considerations did he need to make regarding permissions?

USING DISTANCE LEARNING IN THE CLASSROOM

ADVANTAGES

- *Variety of media.* Distance learning is a versatile means of delivering information to learners around the world with a variety of media, including text, audio, graphics, animation, video, and downloadable software.
- *Up-to-date information.* Until recently, students were limited to the resources in their school buildings. Now, however, with the ability to connect to resources in the community and around the world, students can access current information.
- *Idea exchange.* Students can engage in "conversation" with experts in specific fields of study. Special speakers who can augment a class discussion or provide access to an area of study help students advance their learning.
- *Convenient communication.* Students in various locations can share ideas. They can "speak" to each other at different times and respond at their own convenience, based on the electronic record of their exchanges.
- *Interactive.* All participants get the same message—and the same interactivity in talking to the instructor or the other learners.
- *Extra/Advanced resources.* Distance learning expands the opportunities for smaller schools as well as for individuals participating in home schooling. Students who need additional challenge in their study or have moved beyond what is available in their school can access extra coursework that allows them to continue to advance in their learning.
- *Remediation/Course recovery.* Distance learning expands the opportunities for students who are in need of supplementary instruction. Students who have fallen behind due to illness or other factors can enroll in distance education courses to continue their education.

LIMITATIONS

- *Inappropriate material.* One concern is that some of the topics, especially on the Internet, are *not* appropriate for students. For example, tobacco and alcohol ads appear on the Internet along with games and music kids enjoy. Students can find their way, innocently enough, into topics that are inappropriate or into unsafe environments.
- *Copyright.* Because information is so readily accessible, it is easy for an individual to quickly download a file and illegally appropriate it. Thus, students may turn in a paper or project that is "cut and pasted" and *not* their own work.
- *Finding information.* It is estimated that several thousand new websites are added to the Internet every day. Because this growth makes finding information more difficult, teachers need to work with the school media specialist to help students learn effective search strategies. To assist in information retrieval, several commercial companies and universities provide search engines that follow web links to return results matching your query.

- *Support.* Without good technical support and thoughtful management, distance learning can be frustrating for the learner and the teacher. The teacher may have designed quality instruction, but if the technology is not working properly, the learner will find it difficult to access the information. It would be beneficial to have technical support as part of the delivery options for students at a distance.
- *Lack of quality control.* Students need to be critical thinkers and readers who know how to evaluate information. Everything posted on the Internet is *not* "fact." Anybody can post anything on the Web, including unsubstantiated, erroneous, or untruthful information.
- *Cost.* It is expensive to establish a quality distance learning program. For the learner, many of the costs for Internet access are not apparent. To be effective a program requires a large-capacity computer connected to the Internet for a file server. The design of the instruction requires not only the instructor's knowledge of content, but also the hardware and software for delivery and the technical support that is necessary to ensure success.
- *Intimidation.* Lack of experience with this type of communication technology may make some learners less willing to participate.
- *Limited experience using the systems.* Many teachers and students are unfamiliar with interactive learning systems.

INTEGRATION

Distance learning options continue to expand, from whole courses or programs to enhanced classroom activities, as well as a host of information about topics of interest.

Virtual public schools. A growing number of virtual public schools (VPS) using the Internet for delivery of instruction offer courses or whole programs of study (Wood, 2005). The VPS are typically offered as state-level initiatives in which students can access courses that might not be available to them at their local schools or take advanced placement classes from other high schools or from colleges and universities anywhere in the world. It is possible to obtain a high school or college diploma without ever setting foot in a classroom. Many software applications (e.g., WebCT, Blackboard) provide both ease of access to the instruction and resources for the instructor and students for successful study online.

The following issues need to be addressed by anyone wishing to venture into this area of academic study:

- Credentials of the institution offering the degree
- Quality and rigor of the courses
- Costs associated with online courses, such as equipment requirements, online charges, and tuition

Connecting with Email. Text communication between individuals through electronic mail (email) can be integrated into lessons and used by students to gather information from and ask questions of individuals beyond the school walls (e.g., other students and experts). For example, during a unit on weather, students can gather weather data (temperatures, rainfall, and wind direction) from students in other geographic areas. They can also request weather maps from the local TV meteorologist, which can be sent as attachments to email, or use the NOAA website for recent satellite photos (Figure 7.7). Experts from the National Weather Service can be contacted for the answers to specific questions. Of course, as the teacher, you should always make any necessary arrangements in advance.

Students can also use email to gather information for individual projects. For example, middle school students investigating careers can contact individuals in those professions for answers to student-generated questions. The products of the students' investigation can be "job reports," to be shared with the class either as an oral presentation or a written document.

One growing use of electronic learning at the PK–12 level promotes writing skills by connecting students with "electronic pen pals" or "key pals." For example, one teacher connected her elementary students with students in a language arts methods class at a university across the city (see Taking a Look at Technology Integration: Key Pals). The students exchanged email in which the university students helped the younger ones with their writing. Both groups benefited from this experience. The younger students learned ways to improve their writing, and the college students

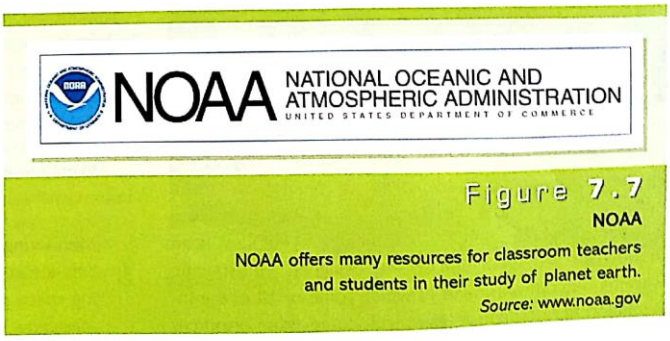

Figure 7.7
NOAA
NOAA offers many resources for classroom teachers and students in their study of planet earth.
Source: www.noaa.gov

Also, many museums and zoos are creating online "tours" of their exhibits. Your students can visit the Guggenheim and view the collections while learning more about the artists. They can visit the Natural History Museum or the Smithsonian National Zoological Park and participate in activities designed to help them learn. In addition, an increasing number of online journals and magazines are being published, either as supplements to existing print versions or as entirely new efforts. Moreover, most major publishers have put their catalogs on the Web, making it easy to locate and order books, software, and other products. Many publishers are willing to make their actual products available online, usually as trial packages that "dissolve" within a certain period of time—usually 30 days. However, the continuing prevalence of illegal copying and distribution of materials makes some publishers wary of complete and unlimited access to software and files.

ASSURE Case Study Reflection

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Review the ASSURE Classroom Case Study and video at the beginning of the chapter. Identify the use of distance learning technology in helping students to learn history. What other types of distance learning resources might Mr. Chun use to support learning for his students?

Intranet Connections. School districts or schools often purchase or develop instructional modules that can be sent over an **intranet** (a way of distributing information within a school or district discussed later in this chapter). This method of delivery is used to provide students with remediation or enhance learning opportunities with the latest version of materials. Updating these materials is relatively easy because the core set of digital material can be electronically modified and made immediately available, whereas in the past revisions often required shipping printed materials or computer disks to schools. Electronic learning provides flexibility to students as well because they may study materials at any time and at any location. Students can also take tests over the intranet. Once the answers are in the database, they are scored and the results made available immediately to students and the teacher. Online learning is very useful when learners are geographically dispersed and instruction is updated frequently.

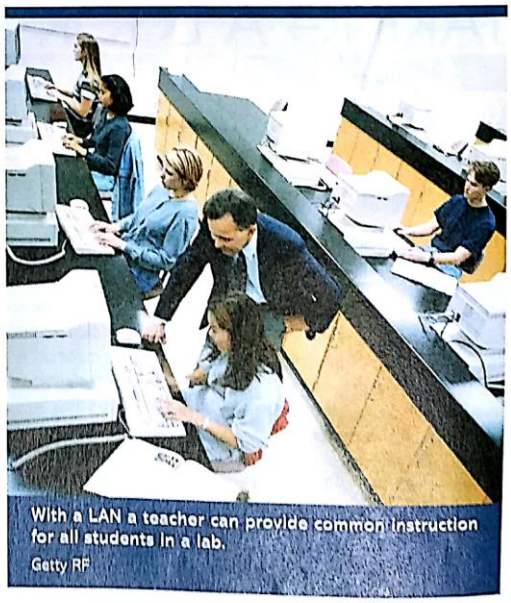
NETWORKS

It is common knowledge that computers can be used to connect students to people and resources outside of the classroom. Once you connect computers in ways that enable people to communicate and share information, you have a **network.** Networks connect schools, homes, libraries, organizations, and businesses so that students, families, and professionals can access or share information and instruction instantly in several ways.

TYPES OF NETWORKS

LAN. The simplest of all networks is a local area network (LAN), which connects computers within a limited area, normally a classroom, building, or laboratory. These networks connect individual computers to one another to permit exchange of files and other resources (Figure 7.8).

A LAN relies on a centralized computer called a **file server** that "serves" all the other computers connected to it. A computer lab is often itself a LAN because all the computers in the lab are connected to a single file server, usually tucked away in a closet or other out-of-the-way space. Whole buildings can also be connected to a local area network, usually with a single computer, generally located in the office or media center, serving as the school's file server. Through a



With a LAN a teacher can provide common instruction for all students in a lab.
Getty RF



TECHNOLOGY for Diverse Learners

Distance Learning Resources

Students in our classrooms have a variety of learning needs. The following examples show ways that your learners can use distance learning resources to help them with their learning.

For students who have visual disabilities or difficulty reading information on a webpage, various design guidelines can be helpful. When including graphics or images, text descriptions can be a resource. For example, along with the image of a feline, add the word *cat* nearby. Avoid using complex tables with many columns. Computer text readers read across one entire line at a time instead of reading each column separately. On hyperlinks, use meaningful terms rather than a graphic or "click here" link that tells nothing about the link. Additional information is available at the World Wide Web Consortium (W3C) Accessibility Initiative (www.w3.org). Bobby (www.cast.org/bobby) is a site that will analyze webpages for accessibility to people with disabilities.

Young students who would like to learn more about using the Internet safely can join WoogiWorld (www.woogiworld.com). Through games and activities students are guided through protocols that advise them about being safe when engaging in pursuits on the Internet. Each child must have parental permission to use the site before they are allowed full access to all the resources. Parents are given information about their child's user name, password, and types of activities available.

Students who wish to advance their knowledge and be challenged in their thinking can use the Internet in a variety of ways. JingProject.com provides students with an easy way to capture visuals and integrate them into their work. In addition, with Jing, students can create simple "how-to" videos that might be helpful in learning new tasks or sharing ideas with others.

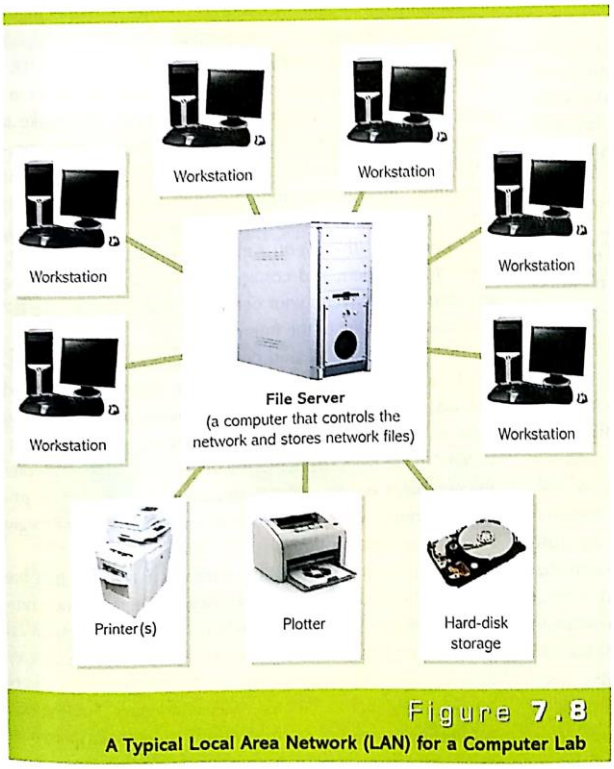


Figure 7.8
A Typical Local Area Network (LAN) for a Computer Lab

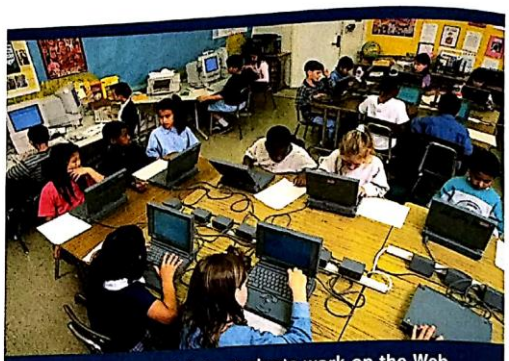
LAN, all of the classrooms in a school can have access to the school's collection of software. Many schools also allow teachers and students to save their computer work in personalized folders on the server, which is very useful when multiple students use one computer. It also allows teachers access to their materials, such as a PowerPoint presentation, while in the computer lab.

Within a school, LANs can also reduce a technology coordinator's workload, which might otherwise include installing programs, inventorying software, and other such tasks. Coordinators can then spend more time working with teachers and students rather than with machines and software. For example, the media center can store its catalog of materials on the file server, giving teachers and students easy access to the information available on a certain topic.

WAN. Networks that extend beyond the walls of a room or building are called **wide area networks (WANs).** A campus or districtwide network connecting all buildings via a cable or fiber system is one such example. In this arrangement, the buildings are linked to a centralized computer that serves as the

host for all the software used in common. Even though a WAN can connect computers over a wide geographic area (across a city, state, or even a country), it is most often used for smaller configurations, such as connecting the buildings within a school system.

As the name implies, a **wireless network** connects computers without wire. Instead it relies on radio frequency, microwave, or infrared technology that depends on a base station for connection to the network. Such networks use transmitters placed inside the room, throughout the building, or across a campus area and operate in the same manner as hardwired networks. Some cities have installed wireless networks in their downtown areas. Wireless networks omit the need for cabling, which can be costly to install, particularly in older buildings. Computers are no longer bound to workstations. Laptops may be used anywhere within the room, building, or campus area and still have access to the Internet.



A wireless network lets students work on the Web without even leaving their classroom.
A. Ramey/PhotoEdit

Intranet. A special type of network called an **intranet** is used internally by a school or organization. It is a proprietary or closed network that connects multiple sites across the state, within the country, or around the world. Systems connected to an intranet are private and accessible only by individuals within a given school or organization.

Intranets provide internal networks for schools. Intranets are a way of increasing communication, collaboration, and information dissemination within schools where divisions, departments, and workgroups might each use a different **computer platform** (hardware and operating system), or where users work in geographically distant locations. Even though an intranet may be connected to a larger network (the Internet, for example), a software package called a **firewall** prevents external users from accessing the internal network, while allowing internal users to access external networks (Figure 7.9).

Internet. The **Internet** is a worldwide system for linking smaller computer networks together. It is a network of networks with a frequently changing collection of millions of computer networks serving billions of people around the world. Any individual on the Internet can communicate with anyone else on the Internet. Users can access any information, regardless of the type of computer they have, because of standard protocols that allow all computers to communicate with each other. Most information is shared without charge except for whatever access fee is required to maintain an account with an **Internet service provider (ISP)** such as Comcast or any of the many local or community ISPs. Many schools provide Internet accounts to teachers and students at no charge.

Both telephone companies and television cable companies provide high-speed access to the Internet. **Integrated services digital network (ISDN)** lines provide speeds up to five times that of regular phone lines. A **digital subscriber line (DSL)** provides even faster access—up to 30 times that of a standard phone line. TV cable companies also offer high-speed service through a **cable modem.** All of these access services are popular with the home consumer (Figure 7.10).

Special communication software connects the computer to a telecommunication service. When you make a connection to the Internet, you enlist the help of four communication services: your computer, the ISP, the server (host computer), and the telecommunications network (communication software and a modem and phone or cable modem). Your computer (the *client*) runs the communications software. Your modem and communications software provide an open path between your computer and your ISP. The ISP provides you a link to the Internet.

Many educational and commercial organizations networks are developing connections to the Internet called **gateways** or **portals,** designed to provide access to many Internet services. The maze of connections is largely "transparent" to the user. Users just *log on* to their computer (enter the computer system, often with a special password for privacy), connect to their networking service or ISP, and begin to exchange information.

Complicating information retrieval is the fact that the Internet does *not* operate hierarchically. There are no comprehensive directory trees or indexes for Internet resources. There is no Library of Congress cataloging scheme or Dewey Decimal system. You can consider the Internet as a library where every shelf is labeled "Miscellaneous." Finding one interesting service or item of information is no guarantee

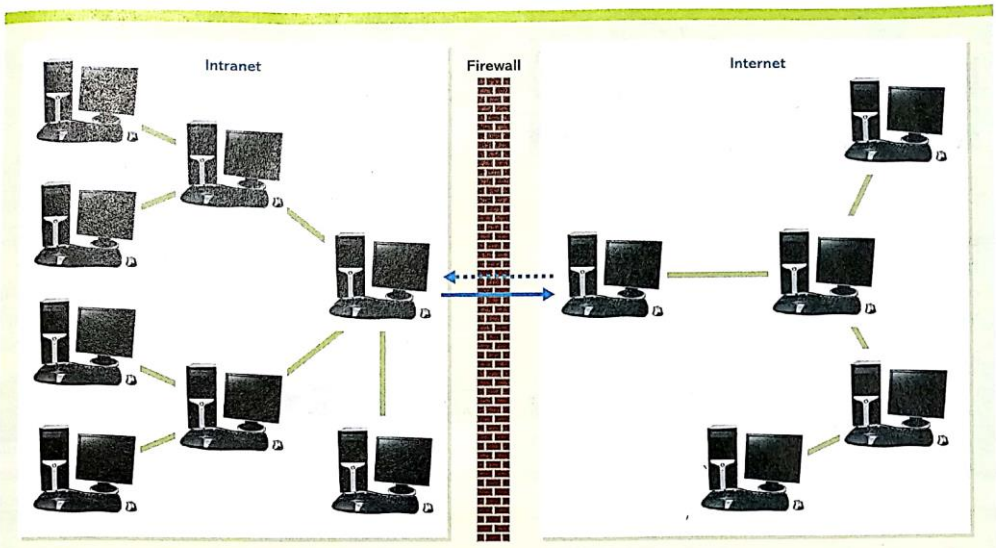


Figure 7.9
Firewalls
A firewall protects an internal network (intranet) from external users but allows internal users to access external networks (Internet).

that you're on the right track to others. In fact, most of the Internet's resources are in little cul-de-sacs on the network, not linked in any predictable way to other, similar resources. To find information on the Internet you must use **search engines,** programs that identify websites containing user-entered keywords or phrases (see Media Samples: Search Engines for Kids).

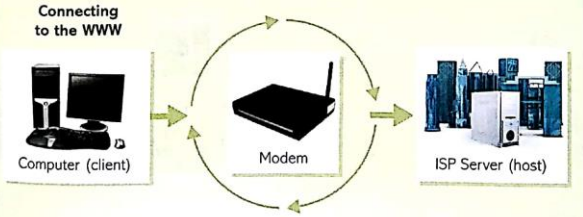


Figure 7.10
Internet Service Providers
You can connect to the World Wide Web from your home or classroom through an Internet service provider (ISP).

THE WORLD WIDE WEB

The **World Wide Web (the Web)** is a network of networks that allows you to access, view, and maintain documents that can include text, data, sound, and video (Figure 7.11). It is *not* separate from the Internet. Instead it rides on top of it, in the same way that an application such as PowerPoint runs on top of an operating system such as Windows.

The Web is a series of communications protocols between client and server. These protocols enable access to documents stored on computers throughout the Internet while allowing links to other documents on other computers. The Web protocol **hypertext transfer protocol (HTTP)** ensures compatibility before transferring information contained in documents called **webpages**. Each individual collection of pages is called a **website,** which users access by entering its address or **uniform resource locator (URL)** into a browser (see the list of websites at the end of this chapter). The URL incorporates the name of the host computer (server), the domain, the directory on the server, and the title of the webpage (actual filename)

MEDIA SAMPLE

Search Engines for Kids

askkids.com

This is a student version of Ask.com that uses age-appropriate content, filtering, and search terms to help kids narrow their searches by asking questions.

kidsclick.org

Librarians created this site to help students conduct searches. Main topic menus and helpful links make it a kid-friendly search engine.

kids.yahoo.com

The student version of Yahool includes sites preselected for young people ages 7 to 12 that present information in a colorful, interactive way. Teachers have been asked to review identified sites, and there is a parent page designed to share information about Internet safety and offer suggestions for ways to help children gain value from using the Internet.

To research this media, pick a selection rubric to evaluate the media and determine which one would work with your lesson plans. See the Web Resources Selection Rubric at the end of this chapter.

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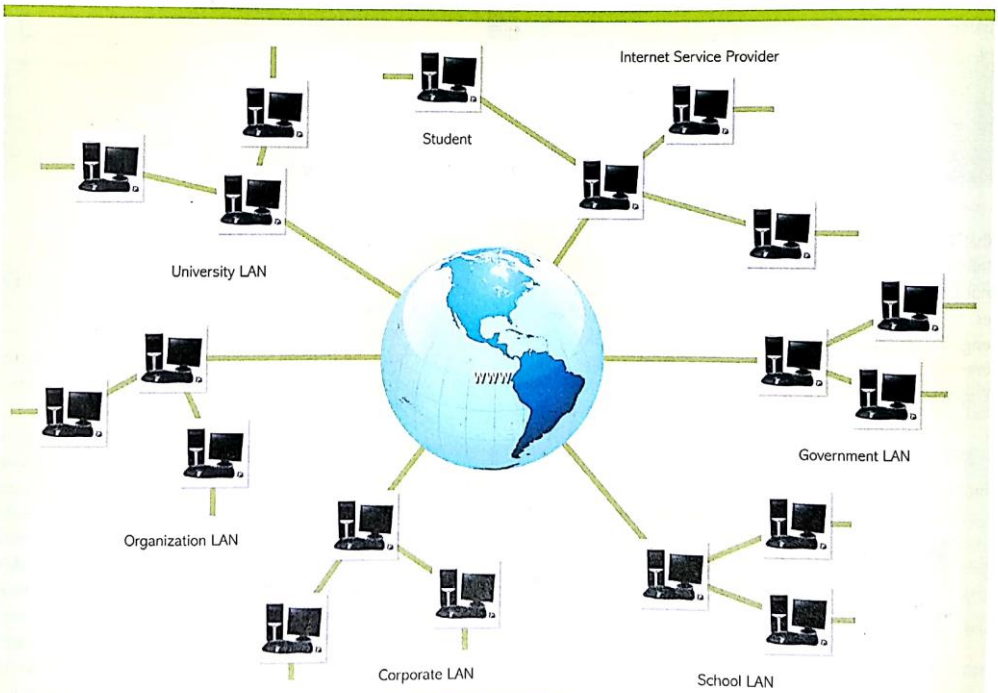


Figure 7.11
The World Wide Web
The Internet is a collection of computer networks. A student, for example, might access the Internet from her home computer or through a school computer lab.

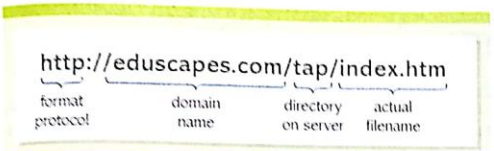


Figure 7.12
Sample Web Address or Uniform Resource Locator (URL)

(Figure 7.12). Navigation within and among webpages relies on hypertext links that, when selected, move users to another location on the same page, another website on the same host computer, or to a different computer on the Web.

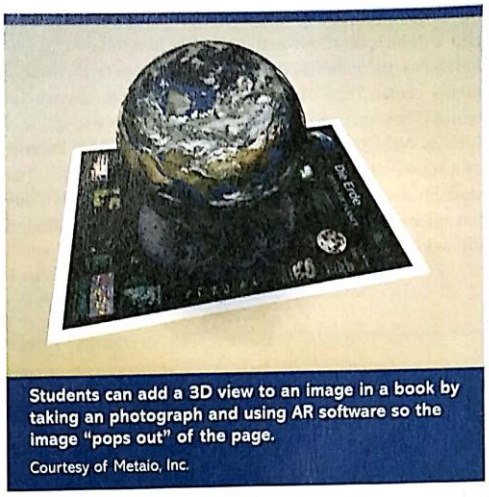
To use the Web for online learning, webpages have to be designed and written, and a host computer must be available to house them. Universities and large companies are usually directly connected to the Internet and run the necessary Web hosting (server) software. A popular resource in online distance learning, the **Course Management Tool (CMT),** is software designed to make it easier for the teacher to use the resources that are part of the system, such as the Discussion Board, Test options, and Grade Book. When using a CMT program such as Blackboard or Moodle, the teacher can concentrate on the instruction and not have to be concerned with computer programming issues.

Evaluating Web Resources. There are so many resources available for students and learners on the Web that it can be difficult to determine which are the best to support learning. A selection rubric has been provided at the end of this chapter to guide you in identifying websites that will benefit your professional development or support your students' learning. You can even ask students to use the rubric to evaluate sites they find while exploring new resources for their learning experiences (See Selection Rubric: Web Resources at the end of this chapter).

AUGMENTED REALITY

Engineering Tool Entices Education

Augmented reality (AR) has been available for some time in engineering systems to blend virtual data—documents, media, live action—with the real world to enhance the information we perceive with our senses. With the advent of wireless mobile devices such as smart phones, AR can now combine real-world data with virtual data. Using the GPS capability of a smart phone and AR software, the user can capture an image and "augment" or enhance knowledge about that image with additional information from the Internet superimposed onto it. For example, while on a field trip to a nearby city, students can photograph a building and then obtain information from the Internet about it while they view the image. Rather than just being devices for interacting socially, their smart phones become learning tools that can easily bring them information when it is most useful. By also adding 3D views to images they take with their mobile phones, images "pop out" of the page, giving students new "views" of real-world objects.



Students can add a 3D view to an image in a book by taking an photograph and using AR software so the image "pops out" of the page.
Courtesy of Metaio, Inc.

SUMMARY

Learning at a distance is not new. Both audio and television resources have been used for many years in distance teaching settings. As the technologies have advanced, these capabilities have been incorporated into more learning opportunities for students. One major advantage of access to a variety of technology assets is that teachers can augment student study and bring additional resources into the classroom. The blending of the regular classroom and distance learning resources has made it possible for students of all ability levels to enjoy an enhanced educational experience.

Distance learning opportunities continue to expand and extend classroom activities. Teachers are no longer limited to the materials in their classrooms or in the school media center. They can access resources from around the world. They can provide their students with experiences such as WebQuests that help them learn to use the Internet as a source of information. Students can reach out to other students and to experts for exchanges of ideas. The Internet has opened classrooms to a wealth of information around the world!

PEARSON myeducationkit

To check your comprehension of the content covered in Chapter 7, go to the **MyEducationKit** for your book and complete the Study Plan for Chapter 7. Here you will be able to take a chapter quiz, receive feedback on your answers, and then access resources that will enhance your understanding of the chapter content.

ASSURE Lesson Plan

PEARSON myeducationkit

The following ASSURE Lesson Plan provides a detailed description and analysis of the lesson in the ASSURE Classroom Case Study and video at the beginning of the chapter. To review the video again, go to the MyEducationKit for your text and click on the ASSURE Video under Chapter 7. The video explores how Mr. Chun creates a high school social studies lesson in collaboration with another teacher in New Hampshire.

Analyze Learners

General Characteristics. The students in Jimmy Chun's high school class are primarily Hawaiian and from low- to middle-income homes. They are fairly equally distributed with regard to gender and range in age from 15 to 17 years old. Student reading ability is at or above grade level. Student behavior problems are minimal.

Entry Competencies. The students are, in general, able to do the following:

- Conduct online research
- Use Blackboard software to participate in discussion boards and exchange digital documents

Learning Styles. Mr. Chun's students learn best when engaged in activities that are relevant and include lively discussions of meaningful topics. His students vary in comfort level with speaking to students in the distance education (New Hampshire) class. Some students prefer live audio to using the text-based discussion boards. National Council for the Social Studies, Expectations of Excellence: Curriculum Standards for Social Studies (Washington DC: NCSS, 1994)

State Standards and Objectives

Curriculum Standards. National Council for the Social Studies, III. People, Places, and Environments: Social studies programs should include experiences that provide for the study of

people, places, and environments, so that the learner can (i) describe and assess ways that historical events have been influenced by, and have influenced, physical and human geographic factors in local, regional, national, and global settings.

Technology Standards. National Educational Technology Standards for Students 4—Technology communications tools: Students use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences; and 5—Technology research tools: Students use technology to locate, evaluate, and collect information from a variety of sources.

Learning Objectives

1. Using content from conducting Internet and library research of pre-1770 U.S. history regarding Hawaiian and New Hampshire culture, religion, government, economy, and social structure, the students will write questions and give written responses during an online discussion.
2. Using the questions and information gained during discussion board dialog, the students will ask New Hampshire students questions regarding their pre-1770 society with respect to culture, religion, government, economy, and social structure.
3. Using the information gained during discussion board dialog and personal knowledge, the students will answer questions posed by the New Hampshire students regarding Hawaiian pre-1770 society with respect to culture, religion, government, economy, and social structure.

Select Strategies, Technology, Media, and Materials

Select Strategies. Jimmy Chun selects teacher- and student-centered strategies for the pre-1770 U.S. history lesson. The teacher-centered strategies involve providing a detailed description of the lesson objectives and how students should prepare for the video teleconference with the New Hampshire students. Mr. Chun also provides feedback to students as they complete their work. The student-centered strategies consist of students' Internet research on the pre-1770 history of their states, posting their questions on the discussion board, and participating in the two-way audio/video distance education teleconference with the New Hampshire students.

Select Technology and Media. This lesson involves student use of computers, distance education equipment, and Blackboard software to post to the discussion board and exchange documents. Mr. Chun applies the following guidelines to assess the appropriateness of his technology and media selections:

- *Alignment with standards, outcomes, and objectives*. The Internet sites, Blackboard software, and distance education video teleconference provide the necessary support for Jimmy Chun's students to meet the learning objectives.
- *Accurate and current information*. Students use both text-based and Internet resources to conduct their research on pre-1770 U.S. history.
- *Age-appropriate language*. Mr. Chun has his students access websites that are appropriate for high school students. When needed, he provides assistance for student use of Blackboard.
- *Interest level and engagement*. The Hawaiian and New Hampshire students are very excited to "meet" and discuss important pre-1770 U.S. history and current topics of interest to them on the discussion boards and during the live two-way audio/video sessions.

- *Technical quality*. The technical quality of the two-way audio/video interactions is consistent with current standards in that the video is slightly delayed. Discussion board interactions and Internet searches have consistently high technical quality due to high-speed access at both schools.
- *Ease of use*. Blackboard requires initial training and support but is fairly easy for high school students to use after basic skills training.
- *Bias free*. Students find multiple references for their research to better ensure the content is bias free. Blackboard software is bias free.
- *User guide and directions*. The online help features of Blackboard are moderately easy for students to use. Students most frequently ask each other or Mr. Chun for assistance with technical difficulties.

Select Materials. Jimmy Chun provided a list of Internet sites for students to reference when conducting online research on pre-1770 U.S. history.

Utilize Technology, Media, and Materials

Preview the Technology, Media, and Materials. Jimmy Chun previews Blackboard software to ensure it has the features needed for the lesson. He previews selected resources to verify that students can find Internet and text-based information on pre-1770 U.S. history. He also previews the video teleconferencing system to make certain students will be able to see and hear each other.

Prepare the Technology, Media, and Materials. Mr. Chun prepares an assignment sheet that describes the lesson requirements and criteria that will be used to assess the final student products. He adds starter questions to the Blackboard discussion area.

Prepare the Environment. Jimmy Chun tests the Internet connections on the lab computers and ensures that Blackboard is accessible from each computer. He also tests the distance education equipment by connecting to the classroom in New Hampshire and practicing with the cameras, microphones, and lighting.

Prepare the Learners. Students in Mr. Chun's class have conducted Internet research and have participated in previous video teleconferences with the students in New Hampshire. Therefore, learner preparation primarily focuses on the topics to be covered on the discussion board and during the live session.

Provide the Learning Experience. The learning experience occurs in two distance education formats: text-based exchanges via discussion boards and live two-way audio/video interactions between the Hawaiian and New Hampshire students.

Require Learner Participation

Student Practice Activities. The students in Jimmy Chun's class use computers, the Internet, and Blackboard software to prepare for and participate in the online discussions of pre-1770 U.S. history of Hawaii and New Hampshire. The students apply information from their research and discussion board topics to generate questions to ask during the live video teleconference.

During the live session, students practice and test their knowledge by asking and answering student-created questions.

Feedback. Jimmy Chun provides continuous feedback as students conduct their research, participate in discussion boards, and interact with students from New Hampshire.

Evaluate and Revise

Assessment of Learner Achievement. Mr. Chun reviews the discussion board posts of each individual student to assess knowledge of pre-1770 Hawaiian and New Hampshire society. He also reviews recordings of the video teleconference to assess student oral responses to questions asked by the New Hampshire students. Mr. Chun assesses student ability to use technology for communication and research by evaluating student Blackboard posts.

Evaluation of Strategies, Technology, and Media. Mr. Chun evaluates the effectiveness of the lesson strategies, talking about the process with the New Hampshire teacher and students and with the students in his class. Evaluation of the technology and media involves examining the functionality of the Blackboard software, the Internet browser, and the two-way audio/video distance education session.

Revision. The evaluation results revealed that student interactions could benefit from arranging students in cross-state pairs to increase interactions and information exchange. Another revision that emerged from the evaluation results was to limit teacher input during the live two-way audio/video sessions to encourage more student-to-student discussion.

Continuing My Professional Development

Demonstrating Professional Knowledge

1. What is distance learning?
2. Why use distance learning for elementary, middle-level, and secondary education?
3. How do audio and television systems facilitate distance learning?
4. Identify three differences between online learning and distance education.
5. Identify three characteristics each of LAN, WAN, intranet, and wireless networks.
6. Define Internet netiquette and list five guidelines for users.
7. Identify one copyright concern issue and explain why it is important.

Demonstrating Professional Skills

1. Interview a teacher who regularly uses audio or television for distance learning in the classroom. Prepare a brief written or recorded report addressing the objectives covered, techniques utilized, and problems encountered. An example might be elementary students using a two-way audio/video system to investigate a community issue. (ISTE NETS-T 1.B & 3.C)
2. Develop a lesson incorporating a WebQuest to engage learners. What changes did you need to make in the design of the lesson to incorporate the WebQuest? What Internet safety issues have to be confronted?

What learner skills and assessment considerations do you need to address when including a WebQuest in a lesson? (ISTE NETS-T 1.B, 2.A, 2.C, 3.D, 4.A, & 4.B)

3. Develop an Internet acceptable use policy for your school (either where you attended or where you teach). (ISTE NETS-T 4.A & 4.C)
4. Observe or participate in a class taught at a distance. Describe how the teacher and students interact with each other. Also, describe the types and uses of media within the lesson. (ISTE NETS-T 1.D & 3.C)

Building My Professional Portfolio

- *Creating My Lesson.* Using the ASSURE model, design a lesson for one of the case studies presented in the Case Study Chart in the Lesson Scenario Chart appendix or use a scenario of your own design. Apply information from this chapter related to incorporating distance education and online learning into your instructional setting. Be sure to include information about the audience, the objectives, and all other elements of the ASSURE model. Be certain to match your intended outcomes to state or national learning standards for your content area. (ISTE NETS-T 2.A, 2.B, & 2.C)
- *Enhancing My Lesson.* Using the lesson you've designed in the previous activity, consider your audience again. Assume that some of your students have special needs, such as physical or learning impediments. Also assume that several students are identified as gifted. How will you change your lesson design to ensure that these students are recognized and supported to allow them to succeed in your classroom? Also consider the options available to your students at a distance related to resources and technology. How might that affect your lesson design? (ISTE NETS-T 2.A, 2.B, & 2.C)
- *Reflecting on My Lesson.* Reflect on the process of designing your lesson and your efforts at enhancing that lesson to meet student needs in your class. What have you learned about matching audience, content, instructional strategy, and materials? What could you have done to better develop your students' higher-order thinking or creativity skills or to engage them more deeply in active learning at a distance? In what ways did the strategies you selected for your lesson enhance learning opportunities for your students? What considerations do you need to better address when planning another lesson for a distance setting? (ISTE NETS-T 5.C)

Suggested Resources

Print

Conrad, R. M., & Donaldson, J. A. (2004). *Engaging the online learner: Activities and resources for creative instruction.* San Francisco: Jossey-Bass.

Lipinski, T. A. (2005). *Copyright law and the distance education classroom: Working within the information infrastructure.* Lanham, MD: Scarecrow Press.

Moore, M. G., & Anderson, W. G. (2008). *Handbook of distance education* (2nd ed). Mahwah, NJ: Lawrence Erlbaum.

Palloff, R. M., & Pratt, K. (2007). *Building online learning communities: Effective strategies for the virtual classroom.* San Francisco: Jossey-Bass.

Shank, P. (2007). *Online learning idea book: 95 proven ways to enhance technology-based and blended learning.* San Francisco, CA: John Wiley & Sons.

Simonson, M., Smaldino, S. E., Albright, M. J., & Zvacek, S. (2011). *Teaching and learning at a distance: Foundations of distance education* (4th ed.). Upper Saddle River, NJ: Merrill/Prentice Hall.

To easily access these web links from your browser, go to the MyEducationKit for your text, then go to Chapter 7 and click on the web links.

The Adventures of Cyberbee

www.cyberbee.com

This site is filled with helpful ideas and activities for using the Internet in education.

Classroom Connect

www.classroom.net

This valuable site for PK–12 teachers and students includes classroom links, materials for educators, addresses of other educators online, and products to bring the Internet into the classroom.

CNN Interactive

www.cnn.com

CNN is an up-to-the-minute source for world news and information about weather, sports, science, technology, show business, and health.

Public Broadcasting Service (PBS)

www.pbs.org

A nonprofit consortium of the nation's public television stations, PBS makes noncommercial television available to the public. Its website includes resources related to the quality programs and services for educators and parents.

San Diego Zoo and Wild Animal Park

www.sandiegozoo.org

This site provides a virtual tour of the San Diego Zoo and includes information about the zoo, its inhabitants, and endangered species.

Sesame Workshop

www.sesameworkshop.org

A nonprofit educational organization that creates entertaining and educational radio and television programming, the Sesame Workshop focuses on providing learning opportunities for children, while assisting teachers, day-care providers, and parents in developing quality learning experiences and curricula in a variety of media formats.