The speed at which the world of the classroom is mutating requires teachers to rethink business as usual. Students are changing. Texts are changing. The very face of literacy is changing. Technological advances, brought on by the digital forces of the computer, are transforming the way we communicate and construct knowledge. And therein lies the revolution that Seymour Papert (1980), a pioneer in the fields of artificial intelligence and computer science, envisioned in his groundbreaking book, *Mindstorms: Children, Computers, and Powerful Ideas*.

Papert was right. The revolution that he foresaw has not been about romancing the technology, as impressive as it might be. It is about radical changes in the way we communicate with one another, access information, and interact with big ideas. Papert’s revolution of ideas “consists of new understandings of specific subject domains and in new understandings of the process of learning. . . . It consists of a new and much more ambitious setting of the sights of educational aspiration” (p. 186). When Johann Gutenberg invented movable type in the fifteenth century, it too resulted in a revolution of ideas. Printed texts in
the hands of the masses changed
the face of literacy and learning in
much the same way that informa-
tion and communication technologies (ICT) are
creating “new literacies” and new ways of
learning today.

Electronic texts, constructed and dis-
played on a computer screen, are not fixed
entities cast in typesetter’s print. In today’s
posttypographic world, highly interactive and
engaging digitally created texts are becoming
an integral part of today’s classroom. So is it
good-bye Johann Gutenburg, hello Seymour
Papert? Mass-produced printed texts have
been a dominant part of the cultural land-
scape in literate societies for about 600 years
and are likely to be around for a long time to
come. As teachers, how will we inte-
grate the print and electronic resources
that are quickly working their way into
the curriculum? How will our roles and
interactions with students change as the
nature and kinds of texts change in our
classrooms? In the previous chapter,
we argued that trade books enrich
and extend learning by pushing us
beyond the boundaries of what was
once considered to be the exclusive
domain of textbooks for content area
study. The organizing principle for
this chapter is similar to the chapter
on learning with trade books: Elec-
tronic texts, like trade books, extend
and enrich the curriculum.
The potential for technology to make a difference in students’ literacy development and learning was evident in the early 1980s when computers began to play an increasingly more important role in classrooms. However, computer-related technologies two decades ago were primitive compared to the powerful technologies that are available today. The Internet as a technology for communication and information had little or no impact on classroom learning until recently (Mike 1996). In the 1980s, the computer’s potential for classroom learning revolved mainly around its uses as a tool for word processing and as a teaching machine for computer-assisted instruction (CAI).

CAI entails the use of instructional software programs to help students to learn. CAI programs in the 1980s included the use of drills, tutorials, games, and simulations. Some computer programs, mainly simulations such as Oregon Trail (MECC), were engaging and interactive. But many weren’t. Drill and tutorial software, for example, often provided students with dull, uninviting “electronic worksheets” to practice skills and reinforce concepts.

Times have changed, however, with the development of powerful technologies that make learning with electronic texts highly engaging and interactive. CD-ROMs, for example, permit much larger storage capacity for text, graphics, and sound and offer tremendous retrieval capabilities not possible with floppy disks. Moreover, online learning opportunities on the Internet allow students to communicate with others throughout the world and to access significant and relevant content in ways not imagined only a few short years ago. As Rose and Fernlund (1997) explain

We have come a long way since those early years. We talk more about work stations than computers. A contemporary work station might combine a powerful computer with a high-resolution color monitor, CD-ROM drive, a high-speed modem, scanner, speech synthesizer, digital camera/recorder, videodisc player; as well as a telecommunications link to on-line services and the Internet. (p. 160)

Today computer-related technologies create complex electronic learning environments. Reading and writing with computers allow students to access and

**Frame of Mind**

1. What are the “new literacies” and how do they affect content learning in ways that were not possible a decade ago?
2. Why use electronic texts?
3. What are some of the electronic texts that can be integrated into the curriculum?
4. Describe the various types of instructional strategies that can be used to help students learn with the Internet.
5. How do the roles of teachers change when they make electronic texts an integral part of subject matter learning?
retrieve information, construct their own texts, and interact with others. Reinking (1995) argues that computers are changing the way we communicate and disseminate information, how we approach reading and writing, and how we think about people becoming literate. Although electronic texts often enhance learning, Reinking (1998) contends that posttypographic reading and writing with computers have the power to transform the way we teach and learn.

Knowing how to use information and communication technologies (ICT), such as the Internet, is integral to the strategic knowledge and skills that every student in every content area will need to develop to be content literate in the twenty-first century. Practically all of the national education associations in the various academic disciplines have developed content standards or statements of principle that implicitly or explicitly acknowledge the proficient use of technologies for information and communication. Implicit in two of the seven content standards of the American Association for Health Education (AAHE), for example, is the use of ICT to develop health literacy:

- Students will demonstrate the ability to access valid health information and health promotion products and services.
- Students will demonstrate the ability to use interpersonal communication skills to enhance health.

The International Reading Association (IRA) and the National Council of Teachers of English (NCTE) are explicit in their standard for using ICT:

- Students use a variety of technological and information resources . . . together and synthesize information to create and communicate knowledge.

State content standards, likewise, underscore the ability to put technologies to use for learning, but for the most part, states continue to rely on paper-and-pencil tests, rather than the literacies required by ICT, to assess students’ abilities to meet content standards. Donald Leu (2002), one of the leading scholars associated with the new literacies, argues that proficiency assessments will need to be redefined in the ever-changing world of ICT: “The challenge will be to develop assessment systems that keep up with the continually changing nature of literacy so that assessment data provide useful information for planning” (p. 326). He points out a major flaw in statewide proficiency assessments related to reading and writing: “not a single reading assessment in the United States currently evaluates reading on the Internet and not a single state writing assessment permits the use of anything other than paper and pencil technologies” (p. 326).

Study the state proficiency assessments in your content area. To what extent do these assessments, where they exist, reflect the literacies that students need to communicate effectively as well as search for and interpret information on ICT such as the Internet?
With continuously emerging information and communication technologies (ICT) a reality in today’s world, new literacies are necessary to use ICT effectively and to fully exploit their potential for learning (Leu 2000). The new literacies are grounded in students’ abilities to use reading and writing to learn but require new strategic knowledge, skills, and insights to meet the conceptual and technological demands inherent in complexly networked environments. To be sure, the Internet is one of the most powerful ICTs extant, and it depends on literacy. Without content literacy as we defined it in Chapter 1, students will not have a solid foundation on which to build new literacies. They will struggle with learning on the Internet, for example, or with other ICT that require reading and writing in much the same way they struggle with printed texts.

Leu (2002) underscores several classroom implications for the development of new literacies. First and foremost, teachers need to help students to “learn how to learn” new technologies. From a new literacies perspective, knowing how to learn continuously changing technologies is more critical than learning any particular ICT. Moreover, teachers need to provide instructional support in the development and use of strategies that, among other things, help students critically evaluate information. According to Leu (2002), learners will need to know how to put new forms of strategic knowledge necessary to locate, evaluate, and effectively use the extensive resources available within complexly networked ICT such as the Internet. The extent and complexity of this information is staggering. . . . How do we best search for information in these complex worlds? How do we design a Web page to be useful to people who are likely to visit? How do we communicate effectively with videoconference technologies? Strategic knowledge is central to the new literacies. (p. 314)

Scaffolding strategy instruction in the use of ICT begs the question, “Why use ICT and electronic texts in content learning situations?” Aren’t textbooks and trade books and other print resources adequate? Aren’t many of today’s children and adolescents already strategic in their use of ICT such as the Internet—even more so than some of their teachers and parents are? Our position is that print resources in combination with electronic texts create powerful environments for learning. Moreover, the very nature of electronic texts is such that there are some powerful and compelling reasons for their use in content learning situations.

Rationale for Electronic Texts

Some of the reasons for the use of electronic texts across the curriculum parallel those associated with trade books: variety, interest, relevance, and comprehensibility. Highly engaging and interactive computer software programs—many of which provide multimedia learning environments—and the Internet make it pos-
sible for students to have access to thousands of interesting and relevant information resources. Not only is there wide access to information but electronic texts on a relevant topic of study also can help students read extensively and think critically about content central to the curriculum. In addition, text that students construct electronically can help them examine ideas, organize and report research findings, and communicate with others. Word processing and authoring software programs, for example, allow students to develop content and multimedia presentations relevant to curriculum objectives. Moreover, electronic mail (e-mail) has the potential to engage students in learning conversations with others within the same community or throughout the world.

We suggest a rationale for integrating electronic texts into the curriculum based on the following concepts as they apply to technology-based learning:

- **Interactivity.** Students are capable of manipulating texts, and text is responsive to student’s interests, purposes, and needs.

- **Communication.** Telecommunication networks enhance electronic text interaction with others throughout the world.

- **Information search and retrieval.** A wide range of information resources and search capabilities enhance student research and information gathering.

- **Multimedia environments.** Images, sound, and text are highly engaging and extend students’ understanding.

- **Socially mediated learning.** Students collaboratively construct meaning as part of literacy learning.

### Interactivity

Throughout this book, we use the word *interaction* to refer to the reader’s active role in learning with text. Recall from Chapter 1 that active readers engage in meaning-making whenever they interact with texts. Reinking (1995), however, points to the imprecision of the term *interaction* as it applies to printed texts. He correctly notes that the interaction between reader and printed text has a metaphorical, not literal, meaning. Reinking’s point is well taken: “Printed texts are fixed, inert entities that stand aloof from the influence and needs of a particular reader” (p. 22). Yet this is not the case with electronic texts. An interactive literacy event in an electronic environment is one in which a text is responsive to the actions of the reader. Electronic texts differ from printed texts in that they have the capability to be modified and manipulated by readers according to their individual needs, interests, and purposes for reading.

### Communication and Information Search/Retrieval

What better way is there to establish authentic communication than through reading and writing with computers? Digitalized technologies make it possible for
students to participate in communication exchanges, search for information, and retrieve information from a multitude of resources throughout the world. One such technology, the Internet, offers users “a natural blend of communication and information retrieval functions incorporated within a framework that literally encompasses the world” (Mike 1996, p. 4). The Internet—also called cyberspace, the information superhighway, the infobahn, or simply the Net in popular culture—consists of a worldwide collection of computers able to communicate with each other with little or no central control. Through computers, the Internet connects people and resources. All you need to access this vast collection of computer networks is a computer, appropriate communication software, a modem, and an account with an Internet provider.

One of the most compelling rationales for using the Internet and CD-ROM software programs is that they create multimedia environments for learning.

**Multimedia Environments**

Sound, graphics, photographs, video, and other nonprint media may be linked to electronic text to create a learning environment far beyond the limitations of printed texts. If students want to find out about space exploration, for example, they can access a site on the World Wide Web. They can click on the term space shuttle for a definition and a computer-generated model of the space shuttle, click on the highlighted word history for a brief overview and history of the space program, digress to an audio recording and video-clip of Neil Armstrong as he sets foot on the moon, or engage in a live interview with a NASA scientist or astronaut. Later in the document, they might click on the word projects to find out about many of the online projects that NASA offers to students.

The concepts of hypertext and hypermedia are crucial to understanding the interactions between reader and text in a multimedia environment. Hypertext differs from printed text in that its structure is much less linear. If you were reading a document in a hypertext environment, you could scroll through it on a screen in a linear fashion, much as you would read a printed text paragraph by paragraph. But the hypertext format also offers a “web” of text that allows you to link to other related documents and resources on demand. When sound, graphics, photographs, video, and other nonprint media are incorporated into the hypertext format, the electronic environment is called hypermedia.

**Socially Mediated Learning**

Electronic texts create a medium for social interactions—whether we have students use the Internet to communicate or assign them to learning teams as they share a computer to access information on a CD-ROM or the Web. Literacy learning with computers is social and collaborative. Students learn with electronic texts by sharing their discoveries with others. Leu (1996) underscores this type
of literacy learning: “Multimedia environments, because they are powerful and complex, often require us to communicate with others in order to make meaning from them. Thus, learning is frequently constructed through social interactions in these contexts, perhaps even more naturally and frequently than in traditional print environments” (p. 163). What are the implications of socially mediated learning events in the classroom? As teachers, we need to support and encourage social interactions in electronic environments and have our students take the lead in making discoveries and sharing knowledge with other students and with us.

Electronic Texts in the Classroom

There are unlimited possibilities for learning with electronic texts. Access to the Internet means, quite literally, that students have at their fingertips a virtual library of electronic texts for subject matter learning. People use reading and writing almost entirely to interact with information or with other people on the Internet. With the Internet, it is possible, as suggested by Williams (1995), to engage in a variety of communication and information search-and-retrieval activities through use of the following: electronic mail (e-mail) to send and receive messages from others and to participate in discussion groups and “live” conferences; telnet to connect to another computer at another location and work interactively with it as if your computer were directly connected to it; file transfer protocol (FTP) to move files and information data from one computer to another; and the World Wide Web, a system for point-and-click knowledge navigation around the world to access text documents, video, images, and sound.

The Internet also provides students with CAI software, particularly CD-ROM programs, that can create multimedia environments for learning. Let’s examine several of the opportunities that students have for learning with electronic texts.

Learning with Hypertext and Hypermedia

Hypertext enriches and extends any literacy learning event in the content areas. With hypertext and hypermedia, highlighted and linked texts, called hyperlinks (or simply links), enable you to move between documents in a nonlinear manner. This process is possible because in hypertext there are many “branches” or pathways that readers may choose to follow in many different orders, depending on their interests and purposes. If your students were to make a cyberspace visit to the home page of one of best science museums for young people, San Francisco’s Exploratorium (www.exploratorium.edu/), they would be able to participate in a variety of interactive exhibits simply by selecting the links in which they were interested. Suppose that several students clicked on the link Cow’s Eye Dissection. In a second or two, the students would be transported to the cow’s eye dissection demonstration site (see Figure 6.1), where they would be invited to select from several “banners” to begin the demonstration. The students may decide to link to
the banner marked “Cow’s Eye Primer” to participate in an interactive lesson that teaches about the parts of the eye. Or they might choose to click on “Step-by-Step: Dissecting a Cow’s Eye” to begin the demonstration.

Using hyperlinks, students can move to other related text or nonprint media simply by clicking on a highlighted word or icon in the document. As a result, they can “jump around” or digress to explore related branches of text at their own pace, navigating in whatever direction they choose. Jumping around in a hypertext gives a sense of freedom with the text that is unattainable with printed text. The possibility for multiple digressions, according to Reinking (1997), is the defining attribute of hypertext. As he puts it, “Trying to write a hypertext means being free to digress and to assume that readers will willingly share in that same freedom. Digression can be positive and enjoyable in a hypertext because there is no compulsion to stick closely to only one main idea” (p. 629).

From an instructional perspective, the branching options offered in hypertext and hypermedia serve two important functions: to scaffold students’ learning experiences and to enhance and extend thinking. For readers who may struggle with
text or with difficult concepts, the resources available on demand in a hypertext environment include pronunciations of keywords and terms, definitions and explanations, audio versions of the text, video recordings, quick-time movies, photographs, graphics, interactive exercises, and student-centered projects. These links have the potential to arouse curiosity, stimulate interest, and reinforce and extend students’ thinking about a subject.

Keep in mind, however, a cautionary note about hypertext and hypermedia learning environments. Computer software programs and the Internet are technologies that lend themselves to extensive explorations of information resources. A key instructional concern is to avoid the more superficial experiences with technology that are fun but do not necessarily support students’ literacy learning or critical thinking about content central to the curriculum (Leu 1996). Because multimedia environments are highly engaging, student discoveries, in Leu’s words, “spread like wildfire” in the classroom. Whenever you plan a lesson or unit that involves students in multimedia learning environments, you run the risk of having them ignore substantive content in favor of superficial discoveries. As a result, students might navigate multimedia environments to explore topics extensively at only a superficial level of understanding without reading and thinking deeply about a specific or single topic. How teachers scaffold intensive literacy experiences and in-depth explorations of electronic and printed texts remains a key instructional issue that we explore throughout this book.

Learning with Software Programs

The proliferation of educational software programs can make it difficult for teachers to choose appropriate CAI programs for classroom use. Most of the major publishers of printed textbooks have entered the educational software market. Prentice Hall, for example, has developed highly interactive multimedia CD-ROM software in most of the content areas. One Prentice Hall program, Multimedia Math, appropriate for use in the middle grades, allows students to interact with and experience math concepts through engagement in “math investigations” and “hot pages” using a rich, three-dimensional, multisensory environment. Another of its software programs, Chemedia, designed for use in high school chemistry courses, combines videodisks with simulation software to engage students in visual explorations of interesting phenomena otherwise not available in the classroom.

In addition to software development by major publishing houses, hundreds of smaller companies, specializing exclusively in technology-related programs, have mushroomed in the past decade, inundating the educational landscape with innovative software in all content areas for all age levels. Because of the prolific development of educational software, most of the major content area educational associations and societies offer program reviews in their professional journals.

Making decisions about educational software is no easy task. Rose and Fernlund (1997), speaking directly to social studies teachers, suggest asking a set of reflective questions related to CAI and multimedia use that is applicable to all
content teachers who are interested in using educational software to enhance instruction. To guide the evaluation of computer-based instructional products, consider the questions posed in Figure 6.2.

**FIGURE 6.2 Evaluating Computer-Based Educational Software: Questions to Consider**

<table>
<thead>
<tr>
<th><strong>Hardware-Related Questions to Consider</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What are the instructional tasks and levels of complexity? Do I have the necessary technology?</td>
</tr>
<tr>
<td>2. Do my computers have enough memory to run the desired software application?</td>
</tr>
<tr>
<td>3. What type of technical delivery system will be used: single computer(s) or computers attached to a local area network (LAN), a wide area network (WAN), and/or the Internet?</td>
</tr>
<tr>
<td>4. Is the speed of the network sufficient to accomplish the instructional task in an efficient and timely manner?</td>
</tr>
</tbody>
</table>

**Software-Related Questions to Consider**

| 1. How does this computer program help achieve my objectives for this unit of study? Can I modify the program to fit my plans better? |
| 2. Does my computer system have the right hardware to run this program (required memory, printers, speech synthesizer, other peripherals)? |
| 3. Is the program easy for students to use? What preparation do students need? What preparation do I need? |
| 4. Does the publisher offer technical assistance, free or inexpensive updates, network licenses? |
| 5. Does the program offer multiple options for delivery? For example, can the program be used over the Internet or linked to sites on the World Wide Web (the Internet’s hypertext-based environment)? |

**Multimedia-Use Questions to Consider**

| 1. Do I have the necessary technology to use this multimedia package, including sufficient computer memory, a videodisk player/CD-ROM drive if needed, a large screen monitor or projection device for large class viewing? |
| 2. What is the perspective of this commercial package? How does this viewpoint differ from other resources that I plan to have students use? |
| 3. Is this product to be used by teachers or students? Do I want to use the entire package or select particular parts? |
| 4. In what ways will this use of technology enhance my students’ learning? How can I assess the impact on learning? |

Learning with Electronic Books

The recent innovations in educational software have led to the development of what has been called the electronic book. Anderson-Inman and Horney (1997) use stringent criteria to distinguish electronic books from other forms of educational software:

- **Electronic books must have electronic text presented to the reader visually.**
- **They must use the metaphors of a book** by adapting some of the conventions associated with books, such as a table of contents, pages, and a bookmark, so that readers will feel that they are reading a book.
- **They must have an organizing theme** of an existing book or a central focus if it is not based on an equivalent printed book.
- **They must be primarily text centered.** When media enhancements other than text are available in the software, they are incorporated primarily to support the text presentation.

Many electronic books, available on CD-ROM, make excellent reference resources. *The Grolier Multimedia Encyclopedia* (Grolier) gives readers more than 33,000 articles and easy-to-use features that make searching and retrieving information uncomplicated. Many CD-ROM books are informational and focus on in-depth studies of subjects. *In the Company of Whales* (Discovery Communications), intended for use in middle and high schools, provides students with well-organized informative text, pictures, action footage, and sound. The electronic text shows how whales are studied and introduces students to some of the people who study them. Still other electronic books are for recreational reading. Highly interactive storybooks such as *Afternoon* (Eastgate Systems) and Walt Disney’s *Animated Storybooks* are suitable for younger as well as older readers. In studies of interactive electronic books, researchers find that children generally respond positively to CD-ROM stories over printed versions (Matthew 1996) and that reading from electronic books increases comprehension when students read longer and more difficult narratives (Greenlee-Moore & Smith 1996).

There are many electronic book venues online on the Internet that give students and teachers nearly instant access to libraries. For online electronic books, it would be worth your while to visit The Book Page (www.cs.cmu.edu/books.html), The Classic Archive at MIT (http://classics.mit.edu), or The English Server (English-www.hss.cmu.edu/). In addition, “expanded” electronic books provide students with digital texts that join a main work of print with film or video. These multimedia-enhanced electronic books extend the possibilities for intertextual studies.
Learning with Word Processors and Authoring Systems

Reading and writing on the Internet play important roles in learning. But merely using computer-related technologies in your classrooms doesn't guarantee more effective or meaningful learning. As one teacher put it,

"Students must be good communicators. In my classroom, students whose writing skills are lacking will not spend nearly as much time on the computer as those with more competency. Does this make some students strive to be more competent so they can use the computers? Yes indeed, and that brings up a positive aspect of computers; they provide incentive and encouragement for improvement. (Jasper 1995, p. 17)"

Not only do computers provide incentive for improvement but they can also be important tools for developing students' writing abilities. Computers as word processors allow writers to create a text and change it in any way desired. Word processing software programs have the potential to make students more active in brainstorming, outlining, exploring and organizing ideas, revising, and editing a text.

Academic-related writing is one of the most cognitively as well as physically demanding tasks required of students in school. Computers can make writing easier by taking away some of the sheer physical demands of putting ideas on paper with a pen or pencil. This is not to say that communicating with paper and pen is less effective than with a computer. A computer, however, frees students from the laborious physical tasks associated with drafting, editing, and revising a text so that they can expend more cognitive energy on the communication itself. One of the best reasons people use computers to write and communicate with others is that it takes a complex activity such as writing and expedites the process. Suid and Lincoln (1989), somewhat "tongue in cheek," draw this analogy: "You can cook terrific meals on a wood-burning stove. But if you're like most people, you prefer a modern range. It's easier. It's faster. And it lets you do more" (p. 318). One of the things that a computer lets you do in a classroom is generate a finished and attractive text that others can read.

Student-generated texts and reports shouldn't be for the teacher's eyes only. They should be read by other students and can become "minibooks" for classroom learning. Desktop publishing programs, which combine text and graphics in varied arrangements, can help students produce attractive reports as part of thematic and topical units of study. Students can also design multimedia projects using hypermedia programs such as Hyperstudio, Linkway, or Hypercard. Hypermedia programs encourage active engagement with information and extend the composing process through the interaction of various media. These programs are called authoring systems and are often used in research projects designed by students as part of a thematic or topical unit of study.

Lapp and Flood (1995), for example, describe a middle grade classroom where they observed small groups of students using Hyperstudio to design geology-
related science projects. The students used the authoring software to help them organize their multimedia reports on a unit dealing with the causes and effects of tornadoes. One group of students located a National Geographic Society laser disk containing some footage of an actual tornado and used the authoring software program to incorporate the footage into their presentation. A laser disk is a computer peripheral on which large amounts of video and audio are stored. A student in another group found some photographs taken by his aunt of a tornado and the destruction it left in its wake. The student used a scanner to incorporate the photos into the multimedia presentation. A scanner is another peripheral used to convert pictures, texts, graphs, or charts into an image that can then be used in a computer presentation.

Authoring software allows students to develop multimedia projects and presentations that wed visual images, sound, graphics, and text. The premise underlying authoring systems is not as complicated as it may appear if you’re a novice with the use of hypermedia technologies. Authoring software programs facilitate multimedia compositions and encourage students to communicate what they are learning through the construction of computer “cards” and “buttons.” The student (or small group of students) creates the multimedia presentation by filling in computer cards with information (referred to as textual “fields”) and with pictures, drawings, graphics, photographs, video, music, and voice messages. Buttons are then created to link the network of completed cards.

Students not familiar with authoring systems need to learn how to use hypermedia tools and peripherals to scan in photographs, create pictures and graphics, and record video and sounds. They will also need instructional support in planning, researching, and designing projects and in learning how to use authoring software effectively.

**Learning with the Internet**

The Internet is one of the most powerful technologies for information and communication today. The potential for integrating literacy and learning on the Internet as well as other technologies for information and communication brings to fruition Seymour Papert’s visionary use of computers as a revolution of ideas. To use the Internet to its fullest potential, students will need to develop strategic knowledge, skills, and insights that will take them beyond trivial and superficial learning on the Internet, despite recent patterns that show multimedia and networked environments generate increased interest and motivation for reading among today’s students (Leu 2002; Reinking 2003).

Harry Noden (1995), a middle school teacher, describes an electronic conversation that he had with a teacher, Ken Blystone, from Texas. Blystone explained that he was having difficulty securing funding for Internet connections in his school district because some school administrators considered the Internet a high-tech frill rather than a substantive tool for literacy and learning. According to Noden, Blystone “approached his principal early one morning before school and asked him how much it would be worth investing to get students so
excited about reading and writing that they would stand in line for the opportunity.” The principal chuckled at the notion until Blystone “invited him to walk to the library. There, a half an hour before school had started, gathered around the one computer connected to the Internet, stood a large group of students . . . standing in line waiting for the opportunity to read and write” (p. 26).

The Internet as an Information Resource

The Internet has been described by some as providing the “textbooks of tomorrow.” And then some! The World Wide Web of the Internet is fertile ground for learning with electronic texts on every subject imaginable. Access to the Web on the Internet means access to a hypermedia system. The Web represents the universe of servers (computers) that allows text, graphics, sound, and images to be mixed together.

Alvarez (1996) describes a project called Explorers of the Universe for high school students in grades 9 through 12 enrolled in an astronomy class. In this class, the Web on the Internet became an important tool for gathering information and communicating ideas. Students worked in teams of two and three, conducting research using library resources as well as resources on the Web. The Internet was also used as a medium to publish students’ research reports, broaden their knowledge base in specific areas, and make inquiries to other students and astronomers in the field.

Alvarez notes that the Web serves a function similar to the library except that access to information resources is nearly instantaneous and students are able to contact authors of Web documents directly to clarify information or ask additional questions. The teachers involved in Explorers of the Universe used textbooks in tandem with Internet connections. They found that the textbook became a resource as opposed to a singular source of science information. Preliminary findings of the project show that students related new information to their existing world knowledge, analyzed their sources more carefully, and attempted to identify new sources of information (Alvarez 1996).

To use the Web effectively, students will need to develop expertise at navigating through the hypertext world of the Web. For students not experienced with browsing or surfing the Web, try scaffolding activities, such as guided tours and scavenger hunts, to familiarize beginners with how to navigate. Also, use bookmarks that take students directly to locations that you want them to visit on the Web. One of the most useful resource books for literacy and learning, Teaching with the Internet: Lessons from the Classroom (Leu & Leu 2000), provides many suggestions for developing navigation skills and numerous Website locations for content area study.

Figure 6.3 lists some frequently visited Websites by content area. A visit to several of these Websites gives you insight into the possibilities for subject matter learning that await students. Information resources and Web sites can easily be integrated into units of study in your content area.
The Websites that we have selected illustrate some of the possibilities for locating information resources on the Internet in various content areas. Because the Web is a fluid and continually changing medium, some of the locations listed here may no longer be in operation. For additional Websites go to Web Destinations on the Companion Website.

### The Arts
- **The Kennedy Center’s ArtsEdge**
  - [www.artsedge.kennedy-center.org/artsedge.html](http://www.artsedge.kennedy-center.org/artsedge.html)
- **Asian Arts**
  - [www.asianart.com/](http://www.asianart.com/)
- **The Provincial Museum of Alberta Virtual Exhibits, Genghis Khan**
  - [http://pma.edmonton.ab.ca/vexhibit/genghis/intro.htm](http://pma.edmonton.ab.ca/vexhibit/genghis/intro.htm)
- **The National Endowment for the Arts**
  - [www.arts.endow.gov/](http://www.arts.endow.gov/)

### English Language Arts
- **Literature Resources**
  - [http://vos.ucsb.edu/shuttle/eng-mod.html](http://vos.ucsb.edu/shuttle/eng-mod.html)
- **The English Server**
  - [http://eserver.org/](http://eserver.org/)
- **National Public Radio**
  - [www.npr.org/](http://www.npr.org/)
- **PBS Web Site**
  - [www.pbs.org/](http://www.pbs.org/)
- **Computer-Assisted Language Learning (CALL)**
  - [www.ohiou.edu/opie/index.html](http://www.ohiou.edu/opie/index.html)

### Foreign Language
- **Elementary Spanish Curriculum**
  - [www.veen.com/veen/leslie/curriculum/](http://www.veen.com/veen/leslie/curriculum/)
- **Web 66 International School Registry**

### Mathematics
- **MathEd: Mathematics Education Resources**
- **Twenty-first Century Problem Solving**
  - [http://www2.hawaii.edu/suremath/home1.html](http://www2.hawaii.edu/suremath/home1.html)
- **MathMagic**
  - [http://forum.swarthmore.edu/mathmagic/](http://forum.swarthmore.edu/mathmagic/)
- **McNair Scholar’s Program**
  - [http://www.sci.sdsu.edu/usp/mcnair/](http://www.sci.sdsu.edu/usp/mcnair/)

### Science
- **Environmental Education**
  - [www.eelink.net/](http://www.eelink.net/)
- **A User-Friendly Frog Dissection Guide**
  - [http://george.lbl.gov/ITG.hm.pg.docs/dissect/info.html](http://george.lbl.gov/ITG.hm.pg.docs/dissect/info.html)
- **The Official Website of NASA**
  - [www.nasa.gov/](http://www.nasa.gov/)

### Social Studies
- **Benjamin Franklin**
  - [www.fi.edu/franklin/](http://www.fi.edu/franklin/)
The Internet as a Communication Resource

On the Internet, students (and teachers) can send and receive messages anywhere in the world via e-mail. E-mail messages are sent electronically from one computer to another through the use of special software. E-mail communication can generate important learning connections for students by making “reading and writing across the planet” a reality. Imagine the possibilities: On Monday, two students from Yakeala, Finland, talk to your students about minority groups in their country—the Gypsies and the Lapps. On Tuesday, students discuss the environmental problems of the Amazon jungle with students in Lima, Peru. On Wednesday, a student who is wheelchair bound from Palatka, Florida, drops in to give his one- to five-star reviews of the latest video games. On Thursday, teenage refugees from Bosnia tell how most of their relatives “just disappeared” and how the young people managed to escape. On Friday, a student from Keene, New Hampshire, shares a visit from a Holocaust survivor.

These are only some of the e-mail learning events that occurred in Harry Noden’s eighth-grade class in the course of a week. To allow this to happen, Noden first made e-mail connections with other teachers through the use of electronic bulletin boards, sites where students and teachers can post ideas for exchanges and Internet projects. Leu and Leu (2000) recommend the following sites as “jumping-off points” for Internet projects, a strategy for Internet learning that we describe in the next section.

**NickNack’s Telecollaborations**  
http://home.talkcity.com/academydr/nicknacks/  
This site provides summaries of many projects.
Kidlink
www.kidlink.org/english/general/sub.html
E-mail–based projects aimed at students ages ten to fifteen are featured.

The GLOBE Program
www.globe.gov/
This site highlights environmental science projects that connect students and scientists around the world.

In one Internet project, preservice teachers from Walsh University in Ohio engaged in e-mail exchanges with fourth graders from a local elementary school (McKeon 2001). The collaborative project revolved around “booktalks” and literature discussions. Each preservice teacher was paired with a student. Throughout the semester, the e-mail partners discussed the books they were reading. These electronic conversations provided natural opportunities for the partners to engage in authentic talk about books and for the preservice teachers to blend instructional strategies into the discussion. For example, in one correspondence just prior to reading the book A Taste of Blackberries (Smith 1973), a preservice teacher invites his partner to make predictions about the book:

Just to let you know before you start reading, the book is very sad and it involves people dying. I would like you to brainstorm a little bit about the name of the book and give me some guesses of what you think the story may be about. Then we will take your guesses, and after we read the book, we can find out how close you were with some of your guesses. I am really looking forward to hearing from you.

Not only was the e-mail project successful in making important learning connections during the literature discussions, but also in the course of a semester, the e-mail partners got to know each other socially as they shared information and asked questions about college life, hobbies, interests, and family life.

In addition to individual messages, a person can send messages to and receive messages from groups of people by subscribing to a mailing list or listserv. These groups, often called discussion groups, allow students and teachers to ask questions, share information, and locate resources. In Noden’s class, students received a collection of memoirs compiled by students at Hiroshima Jogakuin High School. The memoirs, written by survivors of the atomic bomb, stimulated a great deal of discussion among students, prompting them to investigate additional information sources in the library and on the Web. Several of the most popular mailing lists for discussion groups include these:

Liszt Select
www.liszt.com/
This comprehensive site contains more than 50,000 lists. You can either do a search for lists in your interest area or click the Liszt Select box for a much smaller annotated list of sites.
Pitsco’s Launch to Lists
www.pitsco.com/thecause2k/thecause.htm
This site does not have search capabilities, but the list is focused on education.

EdWeb
http://edweb.gsn.org/
This smaller list focuses on K–12 issues, educational technology, and education reform.

Whether they are engaged in communication or searching for information, there are many learning opportunities awaiting students on the Internet. However, teachers cannot assume that students, if left to their own devices, will engage in deep thinking and critical literacy online simply because they are adept at the mechanics of surfing the Net. Too often, random acts of surfing lead to superficial learning and amassing bits and pieces of information. Instructional strategies embedded in well-planned lessons can make a difference in developing the kinds of strategic knowledge and literacy skills that learners need to think deeply about electronic texts.

**Strategies for Online Learning**

There are at least four instructional strategies, as indicated in Figure 6.4, that teachers use to influence the nature and depth of online learning in their classrooms. Detailed descriptions, examples, and teachers’ reflections on these practices may be found in the invaluable instructional resource for Internet teaching and learning *Teaching with the Internet: Lessons from the Classroom* (Leu & Leu 2000). Instructional strategies for online learning include the following: Internet workshops, Internet inquiries, Internet projects, and WebQuests.

**Internet Workshops**

An Internet workshop is characterized by its flexibility. In some respects, it is similar in purpose to a writing workshop or a reading workshop in an English/language arts classroom (Atwell 1998). In writing and reading workshops, teachers who use a workshop model in their classrooms set aside regularly scheduled time for students to engage in reading and writing activities. In the process of doing so, students share their reading and writing with others in the class, typically in small-group book discussions or writing response groups. During workshop time, teachers often conduct “minilessons” to respond to content and process-related issues and problems students are having during reading or writing sessions. Minilessons may also be designed for strategy instruction. In these explicit instructional situations, a teacher may take several minutes or more of workshop
time to show students how to use a set of procedures that will help them become more skillful as readers and writers.

Like reading and writing workshops, an Internet workshop provides an instructional framework for students allowing for regularly scheduled time to engage in activity on the Internet. The activity may range from specific electronic text assignments to individual or group research to collaborative projects on the Internet. For example, a teacher might assign a Website or several Websites for students to visit. With younger learners, the Website(s) are bookmarked in advance by the teacher so that the class has easy access to them. Students are directed to the Website(s) to engage in a content literacy activity in much the same way as they would in a textbook or other print resources. Many of the content literacy activities in this book can be adapted for this purpose.

On other workshop occasions, students may work individually or in collaboration with one another on WebQuests, Internet inquiries, or Internet projects. These instructional strategies are much more extensive than specific assignments on the Internet and may take one to several weeks to accomplish. Regardless of the type of instructional focus, teachers should bring students together intermittently during workshops to share their work or to build strategic knowledge and skills
related to the effective use of the Internet as a tool for learning. In these situations, workshop time is devoted to problems students are having searching for information or communicating with others. Internet workshops can also be designed around explicit strategy instruction. For example, a workshop might revolve around using search engines effectively, thinking critically about information, or designing a Web page.

**An Internet Workshop in a U.S. History Class**

A U.S. high school history teacher brought his students together in a workshop to explore an informational database related to the Vietnam War. The class had been studying the Vietnam War using a variety of print and electronic resources, including the trade book *The Things They Carried* by Tim O’Brien, and the Vietnam War television documentary produced by the Public Broadcast System (PBS). On the PBS Website (www.pbs.org), the students, working in small groups in the computer lab, were asked to click on the American Experience series’ Vietnam War link. They then were directed to click on For the Record, which provided a statistical database for various categories related to the U.S. soldiers who participated in the war. The introduction to the database included statistical information related to such factors as number of Americans in the military during the years of the Vietnam conflict (8,744,000), number of Americans in the military during World War II (16,354,000), number of Americans who served overseas during World War II (11,938,420), number of Americans who served in Vietnam (2,700,000), average age of U.S. combat personnel in Vietnam (19), and average age of U.S. combat personnel in World War II (27). These statistics obviously invited broad comparisons to be made about U.S. combat personnel in World War II and in the Vietnam War.

Other categories of information included a demographic breakdown of the men who actually fought in Vietnam—for example, the percentage of men who fought in Vietnam from below the Mason–Dixon line (28), the number of soldiers from Puerto Rico sent to Vietnam (34,700), the percentage of soldiers in combat platoons who were African American (20), and the percentage of U.S. soldiers from working class or poor backgrounds (80). Screen after screen on the For the Record link dealt with categories of statistical information, including casualties, refusing to fight, fragging and friendly fire, and South Vietnamese military personnel.

The teacher did not want students to superficially gloss over the statistics but rather to think critically about the information. So he invited each group to study the database carefully, looking for relationships among the different pieces of information within and across categories, and then to develop a written profile of the “typical U.S. soldier fighting in Vietnam.” As part of a minilesson, the teacher illustrated how the profiles could be written within the context of different “writing forms,” such as a hometown newspaper article, a personal diary, a letter to a loved one, or an obituary column (see Chapter 11 for a discussion of *discourse forms* used in writing-to-learn activities).

Throughout the week, students spent parts of each class session analyzing the data and working on the development of their profiles. Toward the end of the

Response Journal

What conclusions do you draw when you compare the statistical information for U.S. combat soldiers in World War II and the Vietnam War?
week, the groups shared their profiles, discussed them with the class as a whole, and related them to the texts that they were reading as part of the Vietnam War unit. Figure 6.5 illustrates parts of several profiles students developed in their small groups.

**Internet Inquiries**

The Internet inquiry engages students in research using information sources on the Internet. Inquiries can be conducted individually or collaboratively and often take one or more weeks to complete. Internet inquiries are typically part of larger thematic units and are used in conjunction with Internet workshops. The Internet inquiry broadly follows the tenets of a discovery model for investigating
hypotheses or questions. Students are invited to (1) generate questions about a topic or theme under discussion in class, (2) search for information on the Internet to answer the questions, (3) analyze the information, (4) compose a report or some other form of dissemination related to findings, and (5) share findings with the whole class.

Question generation is one of the keys to conducting a successful Internet inquiry. Many teachers use the K–W–L strategy (see Chapter 10) to help students raise questions. Others use brainstorming techniques to generate a list of questions. Whatever strategy is used for generating questions, the questions should come from the students whenever possible rather than the teacher. An Internet workshop minilesson might focus on asking good questions to guide the information search. A teacher may also use workshop time to scaffold instruction on how to use search engines effectively or how to record and analyze information through the use of “inquiry charts” (I-charts) and other tools for recording and analyzing findings (Hoffman 1992; Randall 1996). In Chapter 7, we provide steps to guide the various phases of any type of inquiry or research investigation.

An Internet Inquiry in Elementary Science

Students in a third-grade elementary classroom have been engaged in a thematic unit related to the study of monarch butterflies. As part of the unit, the class developed a plan for raising monarch butterflies and visited several Websites on the Internet related to specific workshop activities that the teacher had planned. The students also read trade books such as Discovering Butterflies by Douglas Florian, Monarch Butterfly by Gail Gibbons, and Animal World: Butterflies by Donna Bailey. As a result of these classroom learning experiences, the class embarked on an Internet inquiry designed around the students’ “personal questions” regarding monarch butterflies. The class first brainstormed a list of questions that the teacher recorded on chart paper. Some of the questions included “Do monarch butterflies eat anything besides milkweed?” “Are monarch butterflies found all over the world?” “How long do monarch butterflies live?” and “How many eggs can one monarch butterfly lay?” Using the list of questions on chart paper as a guide, each student selected three questions to research. The questions did not have to come from the brainstormed list but could be generated by students as they engaged in their information search on the Internet and from trade books that were available in the classroom.

The teacher conducted an Internet workshop on how to use the search engine Ask Jeeves (www.askjeeves.com). She also explained to students how to use I-charts to record information they found on individual Websites or in trade books related to each of their questions. Across the top of the I-chart, each student recorded his or her name and a personal question about monarch butterflies. The remainder of the I-chart was divided into two columns. The left column provided space for a student to record the name of the Website or trade book that was used
to gather information. The right column was used to record information that students found to answer their questions. Across the bottom of the I-chart was space for students to record “new questions” based on their research.

When students completed their information searches, they collected their I-charts and began analyzing the information to answer their questions. The teacher facilitated the analysis by walking around the room helping individuals as needs arose. Students used the analysis to create a poster portraying the answers to their questions. The inquiry culminated with a “poster session” in which students shared the information related to their questions.

**Internet Projects**

An Internet project involves collaborative approaches to learning on the Internet. Often students engage in project learning with other students who may be from different schools in different parts of the country or the world. Other types of projects may involve collaborative interactions between students and experts from various fields. For example, Internet projects are regularly posted on Websites such as NASA Quest, where students have the opportunity to discuss space science and many other topics with one another and with NASA personnel. Figure 6.6 displays the home page for NASA Quest as of October 2003. The home page highlights several of the projects and events awaiting students’ collaborative interactions.

Many Internet projects are designed by teachers as part of thematic units. Advanced planning is essential for teacher-designed projects. Generally the following steps need to be considered:

- **Plan a project for an upcoming unit and write a project description.**
- **Post the project description and time line several months in advance seeking classroom partnerships with other teachers.**
- **Post the project at a location on the Internet where teachers advertise their projects, such as Global SchoolNet’s Internet Project Registry (www.gsn.org/pr/index.cfm).**
- **Arrange collaboration details with teachers in other classrooms who agree to participate.**
- **Complete the project using Internet workshop sessions for project-related activities and e-mail information exchanges with students and teachers in other classrooms involved in the project.**

Leu and Leu (2000) provide numerous examples at different grade levels of Internet projects for various content areas that are posted on Websites or have been designed by teachers. Figure 6.7 depicts a basic math project for high school students featured on the Global SchoolNet’s Internet Project Registry.
WebQuests have become a popular instructional model for engaging learners on the Internet. A WebQuest is a teacher-designed Web page that packages various learning tasks and activities for students to complete using Internet resources. WebQuests are typically organized around several components: introduction, task, process, resources, learning advice, and conclusion.

The introduction to a WebQuest provides an overview of the learning opportunity available to the students. Often the introduction places the learner(s) in a hy-
As a result, students are assigned a role and a purpose for engaging in the learning activity. The task component of the WebQuest describes the task(s) students will complete and lists the questions that guide the information search. The process component outlines the steps and procedures students will follow to complete the learning task. The resources component of a WebQuest provides links to information resources on the Internet that students will need to access to complete the learning task. The “learning advice” component provides directions to students on how to organize information, whether in outlines, timelines, graphic organizers (see Chapter 12), notebook entries such as the double entry journal format (see Chapter 11), or I-charts. And finally, the conclusion to the WebQuest brings closure to the activity and summarizes what students should have learned from participation in the WebQuest. Figure 6.8 provides an example of a WebQuest for middle grade students designed by students at New Mexico State University.

Source: Screen capture of www.gsn.org/pr/cfm/GetDetail.cfm?pID=2445. Copyright © www.GlobalSchoolNet.org—All rights reserved.

E-Resources
Find out more about the WebQuest strategy by going to Web Destinations on the Companion Website and clicking on Professional Resources. Search for the WebQuest page.
**In the Titanic WebQuest**, you will research and document information on the Titanic. You will need to visit all the online and book resources and document your findings as part of your research. As the group members are reviewing the resources, use the following questions to guide you as you document your findings:

- In 1912, what did a 3 room suite with a promenade cost on the Titanic?
- What class of people were allowed to occupy a 3 room suite?
- How many decks did the Titanic have? How many stories?
- How many elevators did the Titanic have in each class?
- What was used to slide the Titanic into the water?
- How long did it take to slide the Titanic into the water?
- What items, including food, were taken on Titanic’s maiden voyage?
- How many rich people were in first class?
- Who was the richest person aboard the Titanic? Did he/she survive?
- What was the total wealth of the rich people on the Titanic?
- What are the coordinates of the Titanic wreckage using latitude and longitude?
- What date did Titanic sink?
- What caused the Titanic to sink?
- How many people survived? How many people died?
- From which class did more people die? Live?

Each group will create 10 questions that will stump other members of the class based on your findings about the Titanic.

**The Process**

1. Divide the resources equally among the members of the group.
2. Each member will be responsible for visiting the resources assigned.
3. Some of the questions provided should be addressed by each group member.
4. Each group member will keep a notebook on research findings.
5. Organize the findings from each member into 10 questions to stump class.
6. Groups will participate in the game show and answer questions asked by other groups.
7. The final group notebook should be turned in after the game show activity.
### The Resources

**On Line Resources**
- Titanic Facts Page
- Complete List of Resources
- James Cameron’s New Movie
- Encyclopaedia Britannica Presents Titanic
- Titanic: Legacy of the World’s Greatest Ocean Liner
- Titanic in Cyberspace
- The Titanic Exhibition
- RMS, Titanic Inc. Online

**Books and Other Resources**
- *Titanic*, an illustrated history by Don Lynch & Ken Marschell, 1992
- *A Night to Remember*, by Walter Lord, 1955
- *The Story of the Titanic as Told by Its Survivors*, 1960
- *Titanic, Triumph, & Tragedy*, by John P. Eaton & Charles Haas, 1988
- *Down with the Old Canoe: A Cultural History of the Titanic Disaster*, by Steven Biel, 1996
- *The Discovery of the Titanic*, by Robert D. Ballard, 1995

### Learning Advice

It is very important that you keep track of the information you are learning. Organize a notebook into four sections with all your findings:

a. Most interesting information.
b. Most important facts.
c. Other information about the Titanic.
d. Resources about the Titanic.

Make sure and write down where you found each document in your notebook. Include name of author, title of document, site address if it was an online source, and date.

### The Conclusion

Now that you have appeared on the game show “One Thing I Know About,” you and your team have learned everything there is to know about the Titanic. This activity should have given you an opportunity to learn how to organize information into a meaningful document to answer facts and questions on any topic assigned.
Learning with electronic texts can be just as challenging for students as learning with print resources. The various instructional strategies that we described in this chapter provide students with opportunities for online learning. How teachers bring students and texts together in well-designed content literacy lessons and units is the subject of the next chapter.

Electronic texts are highly engaging and interactive. Hypertext and hypermedia make it possible to interact with text in ways not imaginable a short while ago. Text learning opportunities in electronic environments are interactive, enhance communication, engage students in multimedia, create opportunities for inquiry through information searches and retrieval, and support socially mediated learning. Reading and writing with computers has changed the way we think about literacy and learning. Whether students are navigating the Internet or interacting with innovative educational software, an array of electronic text learning experiences await them.

Various instructional strategies, including Internet workshops, Internet inquiries, Internet projects, and WebQuests were discussed as approaches to online learning in various content areas. In the next chapter, we explore the design of content literacy lessons and units of study. These lessons and units bring students and texts together in content learning situations. In a well-designed lesson, there are instructional provisions that teachers make before, during, and after reading to ensure that students will use strategies effectively for reading and writing. Moreover, units of study help teachers to organize lessons around themes and concepts that make use of multiple print and electronic information resources.

Minds On

1. To what extent do you believe students should participate in the selection of documents from Websites for use in a content course? Would you answer this question differently for students of various ages?

2. How often have you used electronic texts as part of subject matter learning? In your estimation, did the teacher use an electronic text assignment to its full potential? If not, in what additional ways might the electronic text resource have been explored?

3. Why do many students seem to dislike doing research in a library but are enthusiastic about surfing the Net for information resources?
Hands On

1. Select a recent news event and conduct a search for information resources on the Web. Select several resources and compare them for treatment, reliability, and accuracy. What does it mean to develop a healthy skepticism when interacting with texts on the Web?

2. Using the keywords, “Examples of Web-Quests,” conduct a search on the Internet for teacher-designed WebQuests in the content area of your choice. Evaluate three or four of the WebQuest Websites. Based on your search, what are some of the strengths of a WebQuest instructional model? What are some of the weaknesses? Discuss the strengths and weaknesses of these Web-Quests in a small group.

3. Search the Global SchoolNet’s Internet Projects Registry or other locations similar to it for Internet project descriptions in your content area. Use these project descriptions to guide the development of a project description that you have in mind at a grade level of your choice. Share your project descriptions with others in your group.

Themes of the Times
Extend your knowledge of the concepts discussed in this chapter by reading current and historical articles from the New York Times. Go to the Companion Website and click on eThemes of the Times.

eResources extra

- Go to Chapter 6 of the Companion Website (www.ablongman.com/vacca8e) and click on Activities to complete the following task:
  Visit the Children’s Literature Web Guide (www.acs.ucalgary.ca/~dkbrown/index.html). Browse this site for useful information about children’s literature, including award-winning books. Share your findings in small groups and discuss the ways teachers might use the site.

- Go to the Companion Website (www.ablongman.com/vacca8e) for suggested readings, interactive activities, multiple-choice questions, and additional Web links to help you learn more about learning with electronic texts.