

# 3

## Developing Lessons with Technology

In a digital world, no organization can achieve results without incorporating technology into every aspect of its everyday practices. It's time for schools to maximize the impact of technology as well.

—State Educational Technology Director's Association, International Society for Technology in Education, and Partnership for 21st Century Skills, *Maximizing the Impact: The Pivotal Role of Technology in a 21st Century Education System* (2007)

### CHAPTER LEARNING GOAL

#### Technology-Based Lesson Planning and Assessment

Using technology tools to support how teachers develop and evaluate learning experiences for students

### CONNECTING to the NETS

#### NETS-T

- 2 Design and Develop Digital-Age Learning Experiences and Assessments

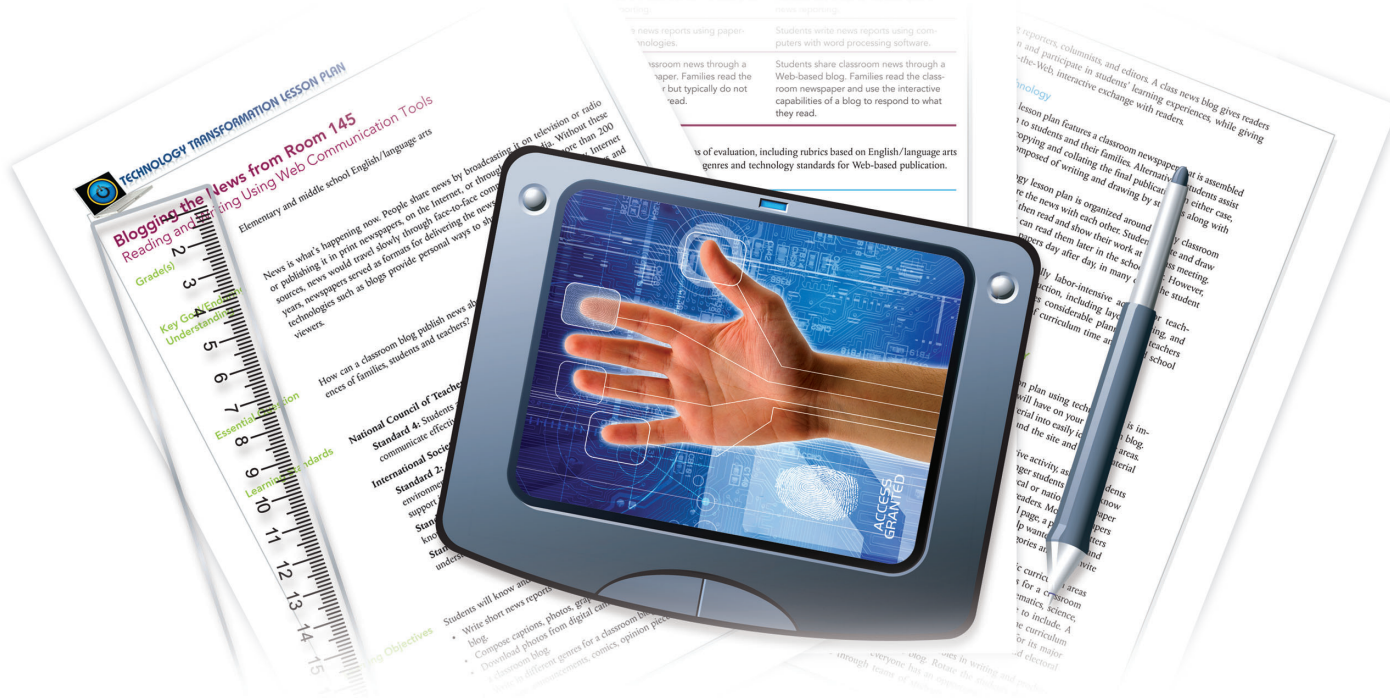
### NEW TECHNOLOGIES

- Web-based lesson development resources
- Electronic grading software
- Web-based K–12 testing policy information
- Online rubrics and quizzes

## CHAPTER OVERVIEW

Chapter 3 discusses how teachers plan, deliver, and assess lessons that engage students and teach academic content while integrating technology into all aspects of lesson development. Two models of lesson planning, student learning objectives and understanding by design (UBD), are explained, as are the differences between test and performance assessments. Two sample lesson plans are developed step by step in the chapter so you can see ways to use technology throughout the lesson development process.

By focusing on lesson planning and lesson assessment, this chapter addresses NETS-T Standard 2, Part a, which calls for teachers to design digital-age learning experiences and assessments that promote student learning and creativity. The chapter also connects directly to NETS-T Standard 2, Part d, by providing students with multiple and varied formative and summative assessments of their academic work.



## FOCUS QUESTIONS

1. What is meant by "lesson development using technology"?
2. What are the "student learning objectives" and "understanding by design" (backward design) models of lesson planning?
3. How can teachers use technology to make decisions about meeting educational standards in their lesson plans?
4. How can teachers evaluate and assess their students?

## How One Teacher Plans Her Lessons

I think of the best lessons when I am cooking dinner. As I stand at the stove and listen to music and news on the radio, I get excited about what I will teach the next day. Somewhere between the cooking of the food and the beat of the music, the plans come as movies that play in the mind. It is there that I draft and redraft the way a lesson might work, who might find it interesting, how I will engage the whole class and individual students, and how I will assess what my students have learned. Planning and assessing my lessons while cooking makes me feel the most like an artist.

This vignette of a teacher designing lessons as she prepares dinner introduces this chapter's learning goal—how to make technology part of your process of developing successful lessons for your students.

Teachers rarely create a meaningful class on the spur of the moment. While there are many occasions of joyful spontaneity in teaching, teachers work from plans and they evaluate their performances. A novelist produces an overall structure for a book and then proceeds to write multiple drafts, using feedback from readers and editors to refine the characters, plot, and dramatic events. An actor reads through a script to gain a sense of the story before researching the history of the time and developing a character's personality while learning the scene-by-scene lines. Teachers produce a broad vision and structure for their curriculum before organizing lessons into a sequence of activities and evaluations for students and themselves.

Developing lessons does not require tightly scripting every interaction or rigidly adhering to a fixed plan. Effective teachers provide room for spontaneity and time to explore questions and topics that are on the minds of the students. They recognize that well-designed classes retain structure and direction and that planning allows the leeway to vary an original design and then come back to it according to the flow of the class. Without a plan (or following a poorly designed plan), students easily become distracted or disinterested, moving through activities without a clear sense of purpose or engagement.

Some teachers, especially veterans, may appear to develop lessons effortlessly. "She has her plans in her head," one student teacher observed about her cooperating teacher, who never wrote her lessons on paper, but always seemed to know exactly what to do next at any point in the school year. That teacher held broad goals in mind about what to accomplish and how to accomplish it. Years of teaching experience facilitated the freedom to begin teaching a lesson, monitor student responses, make adjustments and changes as the situation demanded, and continue making progress—all without appearing to plan the action of the day. But when asked about her procedures, the teacher explained how carefully she thought about each of the activities included in the school day as well as how closely she observed each student's progress to determine the course of the next day and the next week.

However, as a beginning teacher, you will not have the background knowledge that develops from having taught academic topics many times. You have less experience with deviating from your original plan to follow the flow of student questions or interests and then seamlessly returning to your planned activities. You are less familiar with different ways to assess student learning. As a beginner, you need plans and you need to write them down—both as a broad outline and the specifics of who is doing what with which materials. Plans and assessments are road maps charting the course and directing the learning for students and teachers.

In this chapter, we explore the advantages and the complexities of developing lessons using technology, specifically how computers, the Internet, and other digital tools support teachers in selecting academic content, planning lessons, and assessing student learning. We also contrast test



assessments (also called *traditional assessments*) and performance assessments (also called *alternative* or *authentic assessments*).

Using technology in lesson development does not mean planning all your lessons on a computer or asking students to use technology during every classroom activity. It means instead to always keep in mind technology's broad potentials and to recognize the ways technology can contribute to how teachers develop lessons.

## CONNECTIONS and POSSIBILITIES



### Online Lesson Help

"What do I teach Monday?" is a curriculum question familiar to every teacher, whether new to the profession or experienced in the work, who faces decisions about what he or she is going to do academically with the class every day of the week and every time of the day. These lesson development decisions are part of what gives teaching its immense joy—the process of continually creating new learning experiences for students—and its intrinsic frustrations—the fact that there is more curriculum to teach than enough time to teach it.

Before computers and the Internet, teachers generally answered the "What do I teach Monday?" query by working with other teachers, consulting school curriculum guides, reading books and professional journals, and gathering materials from libraries and school resources. Today, educational websites include resources to improve teaching and extend knowledge of curricular topics. With computer-based electronic tools to aid searches for ideas and materials, teachers have easy online access to detailed and proven teaching and learning materials from educational websites whose resources for "Monday" and every other day provide ongoing lesson development for every teaching field.

Two examples of websites that offer comprehensive lesson development resources are the National History Education Clearinghouse and the National Center for Improving Student Learning and Achievement in Mathematics and Science (NCISLA). They provide lesson plans, highlight the latest research in the field, and provide collections of resources for creating lessons with a teacher's own students in mind. Each site functions as an up-to-date teacher learning and professional development resource center.

The National History Education Clearinghouse, developed by the Center for History and New Media at George Mason University and the History Education Group at Stanford University, offers "History Content" that includes website reviews, online lectures, and links to national history centers; "Best Practices" that provide exemplary teaching ideas, including multimedia

examples; "Teaching Materials" that feature a searchable database of state-by-state history standards, customizable lesson plans, and online discussion forums; and "Issues and Research" that have short updates on research and analysis in the fields of history and history education. There is a weekly quiz and an "Ask the Historian" feature where teachers and students can post their historical questions online to receive answers from noted history researchers. Reading these questions and answers offers many curriculum ideas as well.

The National Center for Improving Student Learning and Achievement in Mathematics and Science (NCISLA), a partnership of mathematics and science educators from universities in the United States and the Netherlands, features online articles and resources for teaching math and science in elementary, middle, and high schools along with links to curriculum-related resources from many educational organizations. It reports about recent research being done by university researchers and K–12 teachers on such topics as "algebraic reasoning in the elementary grades," "statistics in the middle grades," and "modeling for understanding in science education."

### CONTACT INFORMATION

#### National History Education Clearinghouse

<http://teachinghistory.org>

Center for History and New Media, George Mason University  
Stanford University History Education Group

#### National Center for Improving Student Learning and Achievement in Mathematics and Science (NCISLA)

<http://ncisla.wceruw.org>

University of Utrecht (the Netherlands); University of California–Los Angeles; University of Massachusetts–Dartmouth; University of Miami; Peabody College, Vanderbilt University; and University of Wisconsin–Madison





## Lesson Development Using Technology

**Lesson development** refers to all the activities that teachers do as they create, teach, and evaluate lessons with students. Lesson development (Figure 3.1) involves a teacher's decisions about three interrelated elements of teaching lessons:

- Academic content (what to teach)
- Teaching goals, methods, and procedures (how to teach)
- Learning assessments (how to know what students have learned)

Lesson development using technology involves how teachers use electronic resources to facilitate these processes.

### Academic Content (What to Teach)

Every time they teach, teachers make choices about **academic content**—the facts, concepts, ideas, skills, and understandings they intend to share with students. Clearly, school system guidelines and state and national curriculum frameworks define and in some cases mandate “what to teach.” Lesson development must be connected to local curriculum frameworks, which are aligned to state and national standards. However, because no local curriculum or national standard spells out everything to teach about any given topic, classroom teachers must make choices about what will be explored or explained to students each day.

Technology plays an essential role in assisting teachers to answer the academic content or “what to teach” question. Digital content available on the Internet includes a vast collection of curriculum resources and information. Using Internet search engines, electronic databases, online encyclopedias, blogs, wikis,

and other technology tools, teachers and students have access to powerful new ways to research and retrieve information. More about how to use the Internet for locating and using digital content can be found in Chapters 5 and 6.

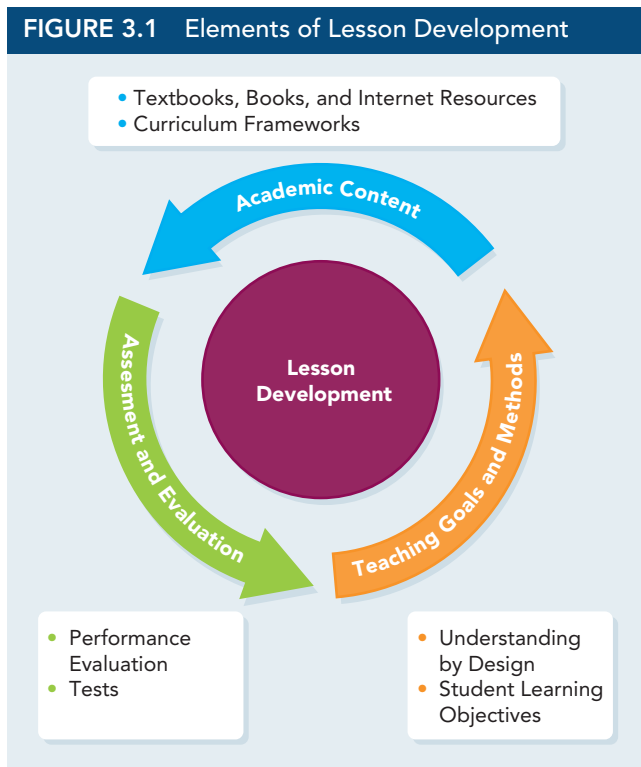
### Teaching Goals, Methods, and Procedures (How to Teach)

As they answer the “what to teach” question, teachers simultaneously decide the **teaching goals, methods, and procedures** they will use in their classes. Goals are the reason why a lesson is being taught. Methods are the instructional strategies—large groups or small groups, discussions, lectures, role-plays, simulations, case studies, inquiry-based activities, creative writing, learning and reflection journals, drill and practice exercises, online tutors, or learning games—that teachers use to convey academic content to students. Procedures are the scheduling and grouping of students by teachers during a lesson, including how much time each activity has allotted to it.

Teachers combine goals, methods, and procedures into formats for daily learning. Sometimes curriculum content dictates these processes; sometimes the goals, methods, and procedures dictate the choice of content. Either way, content, goals, methods, and procedures mutually support each other in a dynamic process of lesson development, which technology can support in a variety of ways, such as the following:

- Presentation software
- Visual thinking software
- Web-based diagram- and flowchart-making tools
- Teacher-developed websites
- Threaded discussions and email

**FIGURE 3.1** Elements of Lesson Development



- Podcasts, blogs, and wikis
- Interactive software
- WebQuests
- Intelligent tutoring systems
- Digital cameras and movie-making software
- Assistive technologies

These and other technology-based teaching methods are discussed in more detail throughout Part Two of this book.

## Learning Assessments (Knowing What Students Have Learned)

**Learning assessments** occur before, during, and after teaching lessons and enable teachers to evaluate student knowledge, understanding, and performance. They can be summative (summarizing what students have learned at the end of a lesson), formative (happening as a lesson unfolds), or diagnostic (preceding a lesson as a way to measure what students already know) (McTighe & O'Connor, 2005). Assessment tools include multiple-choice and short answer tests, essays and other written tasks, oral discussions, teacher observations, class participation, and student projects, portfolios, and performances, all of which provide evidence of what students have learned and are able to do as a result of the teaching. Technology tools that support the assessment and evaluation process include

- Electronic tests and quizzes
- Digital portfolios
- Personal response systems
- Online surveys
- Online evaluation rubrics

These assessment technologies are discussed in this chapter and in Chapter 11.

## Lesson Development in Action: Two Science Lessons

To guide our discussion of lesson development using technology, we use two science lessons, “Ecological Footprints” (a biology lesson for high school students) and “Rainscapes Show the Water Cycle” (a science lesson for elementary school students), as mini case studies.

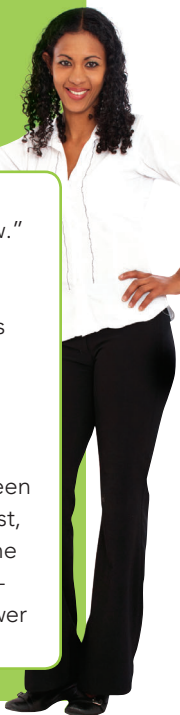
**Ecological Footprints: A High School Biology Lesson.** “Ecological Footprints” shows students the impact that modern lifestyles, including their own, have on environmental resources. Every group of people leaves a lasting impact on the environment through natural resource consumption and waste accumulation—their “ecological footprint.” As students document their own ecological footprints, they are in a position to assess the current and potential future impact of their lifestyles on the world’s natural resources. The lesson challenges every student to identify ways to live on the planet without destroying it.

**Rainscapes Show the Water Cycle: An Elementary School Science Lesson.** “Rainscapes Show the Water Cycle” introduces students in grades 1 through 4 to the water cycle (also known as the hydrologic cycle), including the science concepts of evaporation, condensation, and precipitation, processes that are essential to life on earth, which is not possible without fresh water. By studying the water cycle, children understand how water is naturally recycled from the earth’s surfaces to the atmosphere and back again, changing its characteristics from liquid to gas and back to liquid.

## VOICES from the classroom

*An elementary school teacher comments on the ways technology supports her goals of higher-order thinking by students.*

Technology does best in enhancing the understanding of goals. It is not the “know.” The know is easy; you can read that in the book and write it. The technology gets you to that higher order of thinking; it gets you to understand that goal. It [technology] will give a visual that will get you to the “understand.” For example, if you are using a video clip, you can see the significance. History classes have traditionally been taught in that know stage of memorize, test, memorize, quiz, memorize, test. It is not the way I learned history; I don’t find it particularly interesting to just memorize and answer multiple-choice items.



In this lesson, small groups of children conduct water cycle observations, organized around making their own rainscapes. A rainscape is a plastic container into which a small amount of water is placed. When left alone for a short period of time, the water in the bottom of the rainscape will evaporate to the top, where it condenses, or turns back into water droplets, creating a small rain-storm that falls by simply tapping on the top of the container. Children investigate what happens when different-sized containers are placed near a window where there is lots of light or in a darkened corner, or when they are located outside on a picnic table in the direct sunlight or under a picnic table in the shade. Rainscapes, regardless of shape and location, serve as mini-environments for understanding the processes of evaporation, condensation, and precipitation.

The “Ecological Footprints” and “Rainscapes Show the Water Cycle” lessons raise important issues for teachers to consider as they design lessons that address the “what to teach,” “how to teach,” and “how to know what students have learned” questions. Using specific examples from the two science lessons, we show how teachers in the field have addressed these issues while including ways technology supports teaching and learning.



## Approaches to Lesson Planning

Teachers’ goals, methods, and procedures determine the structure of learning for whole-group, small-group, and one-on-one instruction. Organizing those three elements is *lesson planning*, and it typically follows one of two different approaches—student learning objectives or understanding by design (UBD).

### Student Learning Objectives

You may be familiar with **student learning objectives**; many planning, assessment, and instructional methods courses introduce this framework of lesson development. Student learning objectives are the intended or planned outcomes of your instructional activities—not the activities themselves. Objectives

1. tell *who*
2. is going to do *what*
3. *when*
4. *how much* or *how often* and
5. how it will be *measured* or *evaluated*.

Student learning objectives emphasize outcomes—specifically, what “students will be able to do” after the lesson is taught. With these learning statements in place, a teacher identifies teaching methods, writes out the lesson procedure, and states what forms of assessment will be used to measure student performance. Examples of learning objective statements for the “Ecological Footprints” and “Rainscapes” lesson plans are shown in Figure 3.2.

### Planning Using Understanding by Design

**Understanding by design (UBD)** (also called *backward design*) is an approach to curricular development set forth in the books *Schooling by Design* and *Understanding by Design* by Grant Wiggins and Jay McTighe (1998, 2007). UBD has three main components:

- *Stage 1: Identify desired results (enduring understandings and essential questions).* To provide a frame for student exploration of a topic, the teacher identifies the lesson’s **enduring understandings and essential questions**. These statements and questions are the big ideas or relevant information that students will remember long after the lesson has been taught.
- *Stage 2: Determine acceptable evidence (assessment strategies).* The teacher decides what kinds of evidence will show that students have learned the material and can articulate information and ideas about the enduring understandings and essential questions. Evidence includes papers,



Go to the Assignments and Activities section of Chapter 3 in MyEducationKit and complete the Web activity entitled “Planning for Instruction.”

**FIGURE 3.2** Student Learning Objectives for Two Science Lessons

Ecological Footprints	Rainscapes
<p><b>Student Learning Objectives</b></p> <p><i>Students will be able to</i></p> <p>Calculate an ecological footprint.</p> <p>Connect the ecological impacts of their lifestyles with ways to reduce these impacts.</p> <p>Discuss the ecological impacts of human actions in developed and third-world societies to define the concepts of “sustainability” and “sustainable growth.”</p> <p>Offer insights into global ramifications of wealth and poverty through the comparison of ecological footprints of rich and poor nations.</p> <p><b>Are there other objectives you would add?</b></p>	<p><b>Student Learning Objectives</b></p> <p><i>Students will be able to</i></p> <p>Draw a diagram of the water cycle and its essential processes or act out the water cycle during a class simulation.</p> <p>Identify evaporation, condensation, and precipitation as parts of the water cycle.</p> <p>Discuss the future consequences of changing water amounts on the earth, from lack created by drought to overabundance from melting polar ice, rising sea levels, or wildly changing weather patterns.</p> <p><b>Are there other objectives you would add?</b></p>

performances, or other products that students create using the new knowledge they have learned. Decisions about assessment thus precede the writing of objectives and procedures for the lesson.

- *Stage 3: Plan learning experiences and instruction (objectives and methods).* Many of the same elements found in a student learning objectives lesson plan are present in a UBD design lesson plan. The teacher chooses learning objectives, identifies teaching methods, and crafts a plan of how a lesson will be conducted.

The key ideas of the two science lesson plans, stated in terms of enduring understandings, are shown in Figure 3.3.

### Using Technology in Lesson Planning

The Internet provides vast electronic resources for supporting lesson development using the student learning objectives and understanding by design approaches. Already assembled lesson plans on virtually every topic and innumerable ideas for designing engaging learning experiences

**FIGURE 3.3** Enduring Understandings for Two Science Lessons

Ecological Footprints	Rainscapes
<p><b>Enduring Understandings</b></p> <p>Human behaviors change our planet’s ecological balance, sometimes damaging the environment in dangerous, hard-to-fix ways. For the sustainability of the planet, people must learn to live in ways that do not compromise the ability of future generations to meet their needs.</p> <p>People face choices about how much space and resources are required for humans to live the way they choose to live.</p> <p>There are crucial decisions about how much space and resources other species on earth require if they are to survive.</p> <p><b>What other enduring understandings would you add?</b></p>	<p><b>Enduring Understandings</b></p> <p>The water cycle is an essential component to life on earth. Without fresh water, life is not possible.</p> <p>Different environmental conditions—for example, temperature, ocean currents, drought, and floods—create different outcomes in the cycle.</p> <p>Because only 1 percent of the earth’s water is available for consumption, water-wasting or water-conserving behaviors by people influence how much water will be available in the future.</p> <p><b>What other enduring understandings would you add?</b></p>





*Computer technologies change every aspect of a teacher's work, including how to plan lessons, keep records, and communicate with students, families, and colleagues.*

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Go to the Tutorials section of Chapter 3 in MyEducationKit and access the practical tutorial and skill-building activity entitled "TrackStar Tutorial." Use the tutorial to learn how to create a lesson plan.

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**myeducationkit™**

Go to the Assignments and Activities section of Chapter 3 in MyEducationKit and complete the Web activity entitled "National Math Standards."

for students are available free at educational websites such as Thinkfinity, PBS Teachers (see Tech Tool 3.1 on pages 68–69), Discovery School, and EDSITEment. Educational websites are explored in more detail in Chapter 6. Tech Tool 3.1 also includes Gliffy, a Web-based diagram- and flowchart-making tool.

Many organizations provide downloadable lesson planning templates featuring the student learning objectives and UBD models. For example, the Digital Literacy website maintained by the Media Working Group at Portland State University in Portland, Oregon, provides the following templates:

- Student Learning Objectives Lesson Plan Template at <http://digitalliteracy.mwg.org/curriculum/lesson.html>
- Understanding by Design Lesson Plan Template at <http://digitalliteracy.mwg.org/curriculum/template.html>

TrackStar—available from ALTEC (Advanced Learning Technologies in Education Consortia) at the University of

Kansas Center for Research on Learning—is another portal to teacher-authored lesson plans featuring both student learning objectives and UBD models. While searching the net for resources, you can attach annotated bookmarks to various websites and access a searchable database of bookmarks authored by other teachers.



## Meeting Educational Standards

As they consider "what to teach" (the academic content) for their lesson plans, many teachers list the essential ideas, key information, and important skills they want students to learn. Questions arise in choosing what to include and what to omit from the list, stemming from the reality that there is too much information in every curriculum area that students need to learn. Every teacher must make decisions about what to explore in detail, what to teach more broadly, and what to mention in passing. Age of students, time available, and accessibility of materials are some of the influences on teacher choices. But even after choosing topics that are grade-level appropriate, there will still be more information to teach than there is time to teach it.

## National Curriculum Frameworks

Curriculum frameworks and learning standards guide your choices of "what to teach." Virtually every academic discipline taught in elementary and secondary schools has national, state, and local standards for teachers to follow in planning their curriculum (see Table 3.1 for a list of national curriculum standards).

The curriculum frameworks directly applicable to the "Ecological Footprints" and "Rain-scapes" science lessons are the National Science Education Standards from the National Science Teachers Association and the Educational Technology Standards for Students from the International Society for Technology in Education (see Figure 3.4 on page 70). Environmental topics are also included in the framework of the National Council for the Social Studies (NCSS).

National curriculum standards narrow "what to teach," but these general frameworks leave considerable discretion about "how to teach" a topic. State and local frameworks may direct you to specific topics, but you will still have to make decisions about academic content and teaching methods. And as you make these decisions, you must consider another equally important and helpful aspect of lesson development—learning assessments.

**TABLE 3.1** National Curriculum Standards for Major Academic Subjects

Teaching Field	Professional Organization	National Standards for Teachers
English	National Council of Teachers of English (NCTE)/International Reading Association (IRA)	<i>Standards for the English Language Arts</i>
Science	National Science Teachers Association (NSTA)	<i>National Science Education Standards</i>
Mathematics	National Council of Teachers of Mathematics (NCTM)	<i>Principles and Standards for School Mathematics</i>
Social Studies	National Council for the Social Studies (NCSS)	<i>Expectations of Excellence: Curriculum Standards for the Social Studies</i>
Elementary education	Association for Childhood Education International (ACEI)	<i>Elementary Education Standards</i>
Early childhood education	National Association for the Education of the Young Child (NAEYC)	<i>Preparing Early Childhood Professionals: NAEYC's Standards for Programs</i>
Foreign languages	American Council on Teaching of Foreign Languages (ACTFL)	<i>National Standards for Foreign Language Education</i>
Special education	Council for Exceptional Children (CEC)	<i>Programs for the Preparation of Special Education Teachers</i>
English as a second language education	Teachers of English to Speakers of Other Languages (TESOL)	<i>ESL Standards for P–12 Teacher Education Programs</i>
Health/physical education	American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD)/ American Association for Health Education (AAHE)	<i>Standards for Health Education Programs</i> <i>Standards for Initial Programs in Physical Teacher Education Programs</i>
Reading	International Reading Association (IRA)	<i>Standards for Reading Professionals</i>
Educational computing and technology	International Society for Technology in Education (ISTE)	<i>National Educational Technology Standards for Teachers (NETS-T)</i>



## Assessing and Evaluating Students

As teachers plan and deliver lessons, they must simultaneously design ways to assess what students are learning. Planning, teaching, and assessing are directly connected, but they sometimes become separated when teachers think about their work in the classroom. Choosing academic content and creating engaging activities for students seems paramount when beginning a lesson or unit; assessment is left until near the lesson's completion. We see this misconception as beginning teachers submit lesson plans containing exciting, engaging instructional ideas, but limited or underdeveloped methods for assessment. Not surprisingly, new teachers are unaware or unsure of the different ways they might assess students' learning. Three factors strongly influence how teachers think about assessment:

- *Personal experiences.* Teachers tend to teach the way they were taught and assess the way they were assessed. High school teachers whose



As you look at the list of national frameworks in Table 3.1, consider these questions:

- Have you closely read the national standards in the area(s) you are teaching?
- What part of the standards do you find useful to you as a teacher?
- What elements of your day-to-day work as a teacher are not covered in the standards?
- As a matter of policy, should teachers use common standards established nationally or specific standards set at the state or local level?



# TECH TOOL 3.1

## ONLINE RESOURCES FOR LESSON PLANNING: THINKFINITY, PBS TEACHERS, AND GLIFFY



One of the central challenges of teaching is finding new and creative ways to engage students with academic content, but trying to design learning experiences and envision different instructional approaches by oneself is very difficult. Teachers benefit immensely from online resources where they can view how other educators have organized learning experiences for students.

Thinkfinity and PBS Teachers are two widely visited lesson development sites offering academic content, instructional models, and assessment strategies. Teachers seeking answers to “What do I teach on Monday morning?” will find countless resources for curriculum and instruction in these Internet sites.



### Verizon Thinkfinity

Thinkfinity, shown in the accompanying screenshot, is a gigantic storehouse of some 50,000 curriculum ideas and standards-based lesson plans, arranged by grade level and subject matter and searchable by key words. The term thinkfinity means “endless possibilities for learning and infinite intelligence,” according to its primary sponsor, the Verizon Foundation.

Launched in 1997 under the name Marco Polo, Thinkfinity’s partner organizations maintain subject-specific websites in the fields of English/language arts, mathematics, arts, geography, economics, history, and science that can be accessed separately or through the Thinkfinity Web portal.

#### Educational Organization

National Council of Teachers of English  
and International Reading Association  
National Council for Teachers of Mathematics  
National Endowment for the Humanities  
National Geographic Society  
Kennedy Center for the Performing Arts  
National Council on Economic Education  
Smithsonian Museum of American History  
American Association for the Advancement of Science

#### Website Name

Read/Write/Think  
Illuminations  
EDSITEment  
Xpeditions  
ArtsEdge  
EconEdLink  
Smithsonian  
Science Netlinks



### PBS Teachers

PBS Teachers is an extensive resource for educators from the Public Broadcasting Service, featuring thousands of lesson plans, professional development opportunities, videos, and blogs. There are on-demand streaming videos from selected PBS programs plus a special blog entitled “Media Infusion”

teachers lectured to them must unlearn the impulse to make lecturing their predominant mode of instruction. Similarly, teachers who took many multiple-choice tests and quizzes in elementary and secondary school often assume these tests are the best way to measure the learning of their students. Teachers do not automatically envision using portfolios, creative writing, groupwork, daily conversations, or other assessment tools with students if these techniques were not part of their own experiences as K–12 or college students.

- *Standardized testing.* A dramatic rise in **standardized testing**, accelerated by the 2001 No Child Left Behind (NCLB) law, is a major factor in all teachers’ practice of assessing student learning. Standardized testing is an enormous enterprise in this country. FairTest, a testing



Source: Screenshot reprinted with permission of Thinkfinity ([www.thinkfinity.org](http://www.thinkfinity.org)). Board courtesy of SMART Technologies; copyright © 2001–2009 SMART Technologies ULC; all rights reserved.

devoted to the integration of media and technology in the classroom. From this blog, teachers can learn useful strategies for infusing technology into instruction and assessment from other teachers.



Gliffy is a Web-based diagramming tool that teachers can use to create classroom floor plans, student seating charts, diagrams, flowcharts, and other types of visual information displays.

## CONTACT INFORMATION



Verizon Thinkfinity [www.thinkfinity.org](http://www.thinkfinity.org) Thinkfinity is available free of charge online.

PBS Teachers [www.pbs.org/teachers](http://www.pbs.org/teachers) PBS Teachers is available free of charge online.

Gliffy [www.gliffy.com](http://www.gliffy.com) Gliffy provides basic services for free and offers enhanced features for a fee.

industry watchdog group, estimates that 100 million standardized tests are given to K–12 students in the United States every year. Children take standardized tests from kindergarten through high school, with more and more of these exams serving as **high-stakes tests**, where grade-level promotion or school graduation hinges on passing a test. Elementary school children may take 6 to 10 or more tests every year in reading, writing, mathematics, and speech and language, while middle and high school students have ongoing tests of proficiency in language arts, mathematics, science, and history. Within a climate of test score accountability, teachers can easily conclude that the only tests that matter are the ones that rank order students according to their numerical scores on local, state, and national exams.



Go to the Assignments and Activities section of Chapter 3 in MyEducationKit. Open the Web activity “Thinkfinity” to further explore this Tech Tool.



**FIGURE 3.4** National Curriculum Standards for Two Science Lessons

Ecological Footprints	Rainscapes
<p><b>National Science Education Standards/Science and Technology Standard</b></p> <p>As a result of their activities in grades 5 to 8 and 9 to 12, all students should develop</p> <ul style="list-style-type: none"> <li>• Understandings about science and technology (including identifying a problem, proposing alternative solutions, evaluating the solution and its consequences, and communicating the problem, process, and solution)</li> </ul> <p><b>Science as Inquiry Standard</b></p> <p>As a result of their activities in grades 5 to 8 and 9 to 12, all students should develop</p> <ul style="list-style-type: none"> <li>• Abilities necessary to do scientific inquiry</li> <li>• Understanding about scientific inquiry</li> </ul> <p><b>National Educational Technology Standards for Students (NETS-S)</b></p> <p>Standard 1: Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.</p> <p>Standard 4: Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.</p> <p><b>What other state or local learning standards would you add?</b></p>	<p><b>National Science Education Standards/Earth and Space Science Standard</b></p> <p>As a result of their activities in grades K to 4, all students should develop</p> <ul style="list-style-type: none"> <li>• Understandings about changes in earth and sky</li> </ul> <p><b>Science as Inquiry Standard</b></p> <p>As a result of their activities in grades K to 4, all students should develop</p> <ul style="list-style-type: none"> <li>• Abilities necessary to do scientific inquiry</li> <li>• Understanding about scientific inquiry (including the ability to plan and conduct a simple investigation)</li> </ul> <p><b>National Educational Technology Standards for Students (NETS-S)</b></p> <p>Standard 1: Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.</p> <p>Standard 4: Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.</p> <p><b>What other state or local learning standards would you add?</b></p>

- *Teacher tests.* Tests for teachers powerfully influence how teachers think about assessment. Most states require new teachers to pass a test before earning a teacher license. Many states use Praxis, an exam developed by the Educational Testing Service (ETS), while other states use customized teacher exams from the Evaluation Systems Group of Pearson. The goal of teacher tests is to ensure that anyone receiving a license to teach has the competencies needed to do the work, as shown by passing scores in reading, writing, and knowledge of academic content fields. New teachers might naturally assume that students must be assessed in the same way that they themselves were assessed and that passing a standardized test is the only truly valid assessment format.

No single definition precisely explains the concepts of evaluation and assessment. Educators generally define **evaluation** as what teachers do as they finish a lesson or unit to grade student performance. **Assessment**, by contrast, happens throughout a lesson or unit as a teacher constantly monitors student performance to determine who is learning easily and who may need individualized assistance, differentiated teaching methods, or alternative learning experiences.

Assessment's main goal, states one education evaluation researcher, is "reading the learner's mind or determining 'where the learner is'" (Genishi, 1997, p. 39). This is an exceedingly complex task. It is difficult for a teacher (or any adult) to determine what is going on in a student's mind, and whatever someone concludes is open to different interpretations.

Some assessment experts believe that **test assessments** (sometimes called *traditional assessments*) best determine "where the learner is" academically, showing what a student knows about

a particular subject at a particular time. Test scores symbolize or “stand for what is in the minds of students” (Genishi, 1997, p. 45). In effect, the student’s performance on the test is converted “into a number or quantitative statement (e.g., quality of spelling, quality of work on social studies assignment).” Such measurements are deemed “objective” because “students taking a standardized test take it under virtually the same conditions and their responses will be scored in identical ways” (Genishi, 1997, p. 37).

On the other side of the debate, experts counter that **performance assessments** (sometimes called *alternative* or *authentic assessments*) more truly demonstrate “*what learners can actually do in classrooms in the course of the day*” (Genishi, 1997, p. 43). Products, performances, publications, and presentations by students document what they know and how proficient they are in English, math, science, history, or other subjects. Such evaluations offer tangible evidence of the knowledge and skills students have learned in class. You, as a new teacher, will be expected to utilize both test and performance assessments to measure student learning. See Tech Tool 3.2 (page 72) for more information on educational testing policies.

## Test Assessments

To help you understand how to use assessment and evaluation more equitably for all learners, we examine test and performance assessments in more detail, including how technology supports these activities. Test assessments quantify student performance by assigning a numerical or letter grade derived from a score on a test. The basic premise is the same whether tests are local, state, or national exams given to everyone in a school district or quizzes created by individual teachers for their own students.

**Norm-referenced tests** compare a student’s performance to other students of the same grade or age. Test takers are ranked according to how high or low they score in comparison to the norms set by the larger group. The results typically follow a bell-shaped curve with a small number at the high end, a small number at the low end, and a large number in the middle. Many of the tests given in schools are norm-referenced, including such national exams as the Iowa Comprehensive Test of Basic Skills; the Metropolitan, Stanford, and California Achievement Tests; and Tests of Academic Proficiency. An IQ test is a norm-referenced test, as are others that place student results on rank-ordered scales to determine school readiness, developmental levels, or reading or math proficiency.

**Criterion-referenced tests** compare a student’s performance to specific objectives or standards, not to other students. Test takers are evaluated according to their own performance, and because the criterion-referenced test scores are not arranged on a bell-shaped curve, it is possible for many students to score well or poorly depending on what they know about the questions on the test. A driver’s license exam is a criterion-referenced test, as are the informal quizzes or tests that teachers create to check students’ recall or application of specific academic material. Figure 3.5 (page 73) presents examples of test assessments from the “Ecological Footprints” and “Rainscapes” lessons.

**Using Technology: Electronic Grading Software.** Many teachers use **electronic grading software** as a virtual recordkeeping system. Electronic grading software is a computer program enabling teachers to quickly calculate and record student grades on a computer. This software can be a stand-alone program for a teacher’s personal use—such as Gradekeeper or Easy Grade Pro—or it can be part of a large virtual recordkeeping system purchased by a school district for all teachers to use. School- and districtwide systems manage grades, keep track of attendance, support lesson planning, manage teacher correspondence, and perform other administrative and class management functions.

The advantages of electronic grading software include its capacity to efficiently calculate and store multiple forms of student performance



## YOUR JUDGMENT MATTERS

In thinking about your role as a teacher in assessing students, consider the following questions:

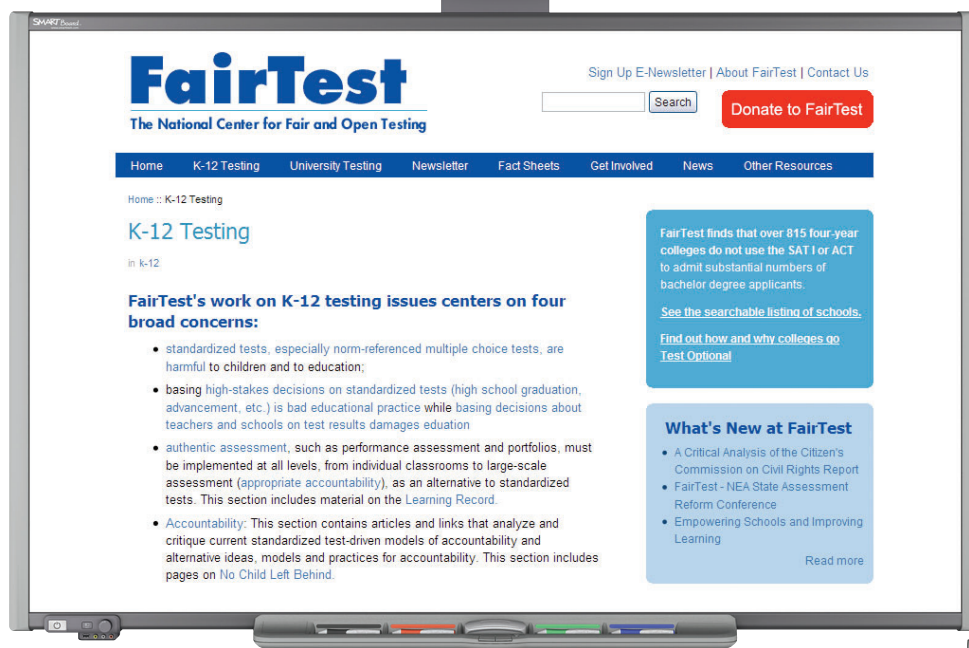
- What different types of assessments have you experienced as a learner?
- Which assessment formats do you like best? Least?
- How might you use test assessments as a teacher? What information might be best assessed by a test?
- What might you use performance assessments (portfolios and other performance-based methods) to show you about student learning?
- What are the strengths and drawbacks you see in each approach?



Teachers face an ongoing challenge in keeping track of state and national policies concerning the standardized testing of students and educators. In more and more schools, test results are used to set educational policies and priorities, including the hiring of teachers. Fair Test: The National Center for Fair & Open Testing is an online resource that teachers can use to keep informed about testing policies and the wider debate in education about the usefulness of standardized tests in assessing student learning.

Fair Test is an assessment reform advocacy organization based in Massachusetts that seeks “to end misuses and flaws of standardized testing and to ensure that the evaluation of students, teachers, and schools is fair, open, valid, and educationally beneficial.” The accompanying screenshot shows a page from the FairTest site dealing with K–12 testing resources for teachers.

Fair Test maintains a clearinghouse of information about testing policies at all educational levels, including testing in K–12 schools and colleges throughout the nation, disputes over test scoring errors, misuse of test scores, efforts to reform the No Child Left Behind law, impact of tests on minority test takers, gender bias in standardized related issues. It provides examples of schools that have deemphasized test student learning.



Source: Reprinted by permission of Fair Test.

## CONTACT INFORMATION



Fair Test: The National Center for Fair & Open Testing [www.fairtest.org](http://www.fairtest.org)  
Fair Test is available free of charge online.

**FIGURE 3.5** Test Assessments for Two Science Lessons

Ecological Footprints	Rainscapes
Test-Based Assessments	Test-Based Assessments
<p><b>Exam Question</b></p> <p>Which of the following steps will reduce the impact of the U.S. ecological footprint on the environment?</p> <ul style="list-style-type: none"> <li>a) Recycling of paper and waste</li> <li>b) Water conservation</li> <li>c) Driving 55 miles an hour</li> <li>d) All of the above</li> </ul> <p><b>Quiz Question</b></p> <p>Ecology is the scientific study of</p> <ul style="list-style-type: none"> <li>a) interrelations between living things and the environment</li> <li>b) living organisms</li> <li>c) the earth's seas and oceans</li> <li>d) the planet earth</li> </ul> <p><b>Short Answer Test Question</b></p> <p>What are the characteristics of the ecological footprints of humans living in modern industrial societies?</p> <p><b>What other test-based assessments would you add?</b></p>	<p><b>Exam Question</b></p> <p>Which of the following terms is NOT part of the water cycle?</p> <ul style="list-style-type: none"> <li>a) Precipitation</li> <li>b) Conservation</li> <li>c) Evaporation</li> <li>d) Condensation</li> </ul> <p><b>Quiz Question</b></p> <p>Which of these conditions are NOT necessary for the rainscape to work as a model for the water cycle?</p> <ul style="list-style-type: none"> <li>a) Enclosed container</li> <li>b) Plants</li> <li>c) Moisture in the container</li> <li>d) All of the above</li> </ul> <p><b>Short Answer Test Question</b></p> <p>What process occurs to make condensation at the top of the rainscape container?</p> <p><b>What other test-based assessments would you add?</b></p>

data from tests and quizzes, assignments, homework, participation, and other activities. Teachers can assign percentage values to different types of work (for instance, 50 percent of the student's grade is based on test scores, 25 percent on writing assignments, 15 percent on homework, and 10 percent on class participation), and the software instantly calculates the overall grade. Electronic calculation allows teachers to quickly report the performance of individuals and the entire class. Students have immediate access to their grades, and families are continually informed about a child's progress in class.

At the same time, electronic grading systems contribute to concerns about how to best assess what students know and are able to do. Not all school activities, particularly at the elementary level, translate into a numerical score equaling a grade of A, B, C, or D (Lacina, 2006). The academic performance of young learners is more nuanced than test assessments fully measure. For example, wrong answers on a test question may reveal important misconceptions for teachers to address with further instruction (Kopriva, 2008). Using test assessments to record only the right answers and enter a summary score into the virtual recordkeeping system may make teachers less inclined to look at the answers that students get wrong. In so doing, pivotal teaching moments may be lost.

As a teacher, you will likely be in a school that uses some form of virtual recordkeeping, and you may want to have your own electronic gradebook system as well. While such tools simplify the work of teachers, the success of electronic grading software depends greatly on how you use the information it provides about the progress of your students.

**Instructionally Supportive Assessment.** In critical response to the growing standardized test movement, some educational researchers have proposed new ways to think about the role of assessment in schools. Reviewing years of research on standardized tests, Anne Davies (2004) unequivocally concludes that “the way to improve student achievement is not to do more testing—or



more drill and practice for test taking—but rather to engage students deeply in the classroom assessment process and increase the specific, descriptive feedback they receive while they are learning” (p. 1). She endorses blending three types of evidence—student work products, teacher observations of student learning, and teacher–student conversations and conferences—to produce a nuanced picture of what students know and can do with the information and skills they are learning in school.

According to UCLA professor W. James Popham (2002), the current “avalanche” of standardized tests has set in motion three undesirable consequences for students and teachers:

1. “Rampant curricular reductionism,” where teachers focus only on the information and skills covered on a test.
2. “Excessive test-focused drilling,” where teachers abandon a more wide-ranging curriculum in favor of activities designed to teach to the test.
3. “Outright dishonesty,” where teachers adjust the test conditions so students do better or, in some instances, actually give students answers to difficult questions.

For students, the joy and purpose of learning is sapped away as they have fewer and fewer opportunities to explore topics that do not appear on the tests.

In Popham’s view, we need better tests rather than no tests at all. Traditional assessments are designed to show differences among students using “comparison-focused measurement.” However, what these tests mostly show is that students from higher socioeconomic backgrounds do better in school than children from low-income families. Popham campaigned for the development of tests that provide **instructionally supportive assessment** so that teachers can use the results during the school year to identify and respond to specific student learning needs.

Rethinking the use of achievement tests was also the focus of the Commission on Instructionally Supportive Assessment (2001), a prominent education reform group that urged states to make test results more explicitly useful to teachers in the field. The commission, chaired by W. James Popham, was convened by five education organizations, including the National Elementary and Secondary Principals Association, the National Middle School Association, and the National Education Association.

In the context of the commission’s report, “instructionally supportive assessment” meant that educational decisions for students should not be based on the results of a single state-mandated test, although such a test can provide useful evidence of student progress and need. Instead, the commission (2001) urged states to “identify a small number of content standards, suitable for large-scale assessment, that represent the most important or enduring skills and knowledge students need to learn in school.”

At the same time, and to avoid an adverse narrowing of the curriculum, states should develop “optional” assessments for content standards not included on the statewide test and support teachers in providing a “rich and deep curriculum” to students. Furthermore, the commission stressed that states must create alternative assessments (such as portfolios, performance testing, and panel reviews) for students with learning disabilities, those speaking English as a new language, and those with other special educational needs.

Other educational organizations have also developed statements about the appropriate role for test assessments. The National Council of Teachers of English (NCTE) has straightforwardly rejected a “sole reliance on standardized tests” to measure student performance, offering instead the following recommendations:

- Assessment must include multiple measures and must be manageable.
- Consumers of assessment data should be knowledgeable about the things the test data can and cannot say about learning.
- Teachers and schools should be permitted to select site-specific assessment tools from a bank of alternatives and/or to create their own. (Assessment and Testing Study Group, 2004)

To encourage the use of such practices in schools, NCTE urged, among other suggestions, that assessment be closely connected to classroom instruction, that locally developed assessments by teachers be used as part of a district’s assessment system, and that students become active participants in assessing their own learning with guidance from teachers and parents.



Go to the Assignments and Activities section of Chapter 3 in MyEducationKit and complete the Web activity entitled “Exploring Assessment.”

Effective assessment, in NCTE's view, requires that teachers integrate multiple assessment resources to produce a more complete picture of student performance. To do so means making comparisons among multiple forms of data. For example, a student who easily grasps key ideas and concepts but acts out in class, is fascinated by and focused when doing science experiments but rarely completes homework, and reads above grade level but does not prepare for tests cannot be easily categorized by any single assessment. To the extent possible, teachers and other school staff will need to combine what they know about each student and formulate strategies that will maximize learning success for every youngster.

**Standards-Based Assessments.** Standards-based assessments (or *standards-referenced testing*) are a recent variation of standardized testing. Standards-based assessment starts with national, state, or district curriculum frameworks that specify what students are expected to know and be able to do at each grade level. Tests are then used to assess the performance of students relative to those national, state, or district expectations. Test takers in a particular subject or academic skill are then grouped in terms of their scores on the standards test as “advanced,” “basic,” “needing improvement,” or “failing.”

Presently, many states are implementing mandatory standards-based tests for high school graduation, including New York, Massachusetts, California, Texas, Florida, New Jersey, Minnesota, North Carolina, Ohio, Maryland, and Washington (Center on Education Policy, 2005). In these places, statewide standards establish what high school students are supposed to know or be able to do, usually in English/language arts and mathematics, but in some cases science and history as well. The tests determine who has reached basic competency according to the standards. Such systems involve a hierarchy of tests that measure performance against state standards throughout a child's academic career.

Some education reformers see standards-based testing as a way to ameliorate inconsistencies in teacher evaluations of students. They contend that there is tremendous variability among teachers in what they teach and how effectively they teach it. One youngster may have a teacher who is highly skilled in math while another child's teacher may have a much weaker base of mathematical knowledge, yet both students receive good math grades. “What does a grade really mean in such a situation?” critics ask, because there is no common measure of what each child knows or is able to do mathematically. To eliminate such variations, standards-referenced measures are used to compare every student against broad national achievement norms rather than by the teacher they had in school.

Critics of standards-referenced testing see the situation in directly opposite terms. Rather than try to remove the teacher from the process, they believe it is essential to prepare teachers to create their own assessments based on state learning standards and student performance in the classroom. It is the teacher, after all, who is the primary conductor of the curriculum. That teacher knows what was covered, how it was taught, and under what conditions the students are most likely to do their best work and demonstrate what they have learned. For these reasons, individual teachers should be creating the tests for their students—not test writers who work for testing companies far removed from the day-to-day world of the classroom.

Standards-based assessment is now a reality for college students preparing to become teachers, as we discuss in Chapter 11. Over the past decade, major professional educational organizations have issued national standards for teachers and programs that prepare teachers for licensure. Many colleges and universities, notably those accredited by NCATE (National Council for Accreditation of Teacher Education), have incorporated these national standards into their teacher preparation programs.



When teachers show computer-based images and graphics on a large scale, students learn by seeing, hearing, and reading the material. Such visual learning methods sustain interest and capture the imagination of everyone in the class.

## Performance Assessments

*Performance assessments* (also called *performance evaluations*) measure what someone actually does in a certain activity, assessing performance within the context of that activity. A baseball player with a .300 batting average (3 hits in every 10 at bats) is considered to be a high performer at the major league level of the sport. Skydivers who are part of a team executing complete complex aerial maneuvers together strive for a world-class level of performance based on the scores given by judges. A small business owner who successfully expands her network of coffee shops is performing above expectations in a highly competitive business field. In each of these cases—batting average, complexity of aerial formations, and profit margin—performance is measured in tangible, real-world terms.

Performance assessment in education is not the same as standards-based assessment. Tests may be involved, but these assessments regularly include educational activities other than tests. For example, a high school student in an art or design class might be evaluated on a portfolio of drawings and sketches rather than a test of artistic knowledge. In the same way, new teacher candidates in a college or university program cannot receive a teacher license without being evaluated on their performance in the classroom during student teaching. Student teachers are assessed on how well they develop and deliver curriculum, manage classrooms, communicate with students, and handle the many other responsibilities of a full-time classroom teacher.

Performance assessment is an increasingly popular concept in education, although it has many complexities. Policymakers and education leaders, for example, refer to “highly performing” or “underperforming” elementary or secondary schools, designations created by the federal No Child Left Behind (NCLB) Act. In theory, schools whose test scores and graduation rates are high or steadily improving earn the status of highly performing. By contrast, underperforming schools are those that fail to improve as measured by the test-score categories of the NCLB law.

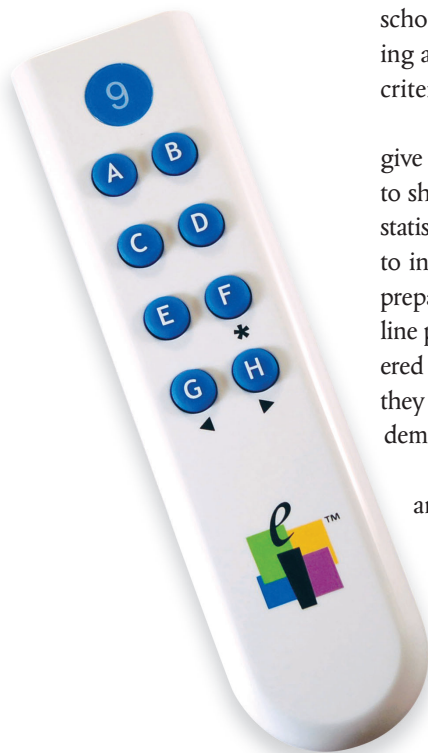
Determining how well a school is performing depends in large part on the criteria used for assessment. In 2006, Massachusetts had the highest test scores in the nation, yet 64 percent of its schools were designated “needing improvement” according to NCLB benchmarks. The paradoxical results stemmed from a provision in the legislation that unless students with special needs show year-to-year continuous improvements on test scores (a very high bar for most schools), the school fails to meet NCLB performance expectations. State education officials responded by seeking a relaxation of federal standards. In other words, they wanted different performance evaluation criteria in determining school success.

Classroom teachers often use performance assessments to evaluate student work. Rather than give a multiple-choice test, they ask for a product, performance, or presentation as a way for students to show what they have learned. For example, to assess what students know about data analysis and statistics, a high school math teacher might ask her students to investigate the calling plans offered to individuals, small business, and large firms by major cell phone companies. Students would then prepare a written report or PowerPoint presentation featuring cost/benefit calculations that include line plots and equations detailing rate changes in cents per minute, with results for all companies covered in the report. Students find such an assignment personally relevant—cell phone rates are a topic they are intensely interested in knowing more about—and academically challenging, since they must demonstrate their knowledge and application of mathematical concepts and number operations.

Figure 3.6 presents examples of performance assessments for the “Ecological Footprints” and “Rainscapes” lessons.

**Using Technology in Performance Assessment.** Technology is a powerful resource for teachers engaged in performance evaluation—both of their students and of themselves as new professionals. In Table 3.2 (page 78), the same technology tools are used by teachers to evaluate students and to prepare for evaluations by supervisors of new teachers’ performance in the classroom.

**Student Performance Rubrics.** As part of performance assessment, teachers use **student performance rubrics** to evaluate student work on course assignments and activities. Student





**FIGURE 3.6** Performance Assessments for Two Science Lessons

Ecological Footprints	Rainscapes
<p><b>Performance-Based Assessments</b></p> <p><b>Discussion Question</b></p> <p>Which type of farming produces the largest yields that serve the most people while creating the smallest ecological footprints—organic farmers or large agribusinesses? Which type of farming should be supported by governmental policy and why?</p> <p><b>Performance Task</b></p> <p>Using writing, drawing, and math, describe your own ecological footprint or that of your family or neighborhood. Provide a detailed description of what resources are used and for what purposes. Make concrete proposals for reducing the wasteful use of resources.</p> <p><b>Technology Project</b></p> <p>Once you have assembled your ecological footprint analysis and proposals for change, create a technology-based format for communicating this information to other people. You could use PowerPoint as a way to present your findings, or you could create a website, blog, or other educational networking site devoted to ecological topics as a way to get more people involved in sustainability issues. Explain how the technology you are using provides an effective way for you to achieve your information and communication goals.</p> <p><b>What other performance-based assessments would you add?</b></p>	<p><b>Performance-Based Assessments</b></p> <p><b>Discussion Question</b></p> <p>Discuss how you acted like a scientist in this lesson. Why do you think scientists follow the “scientific method”?</p> <p><b>Performance Task</b></p> <p>Using writing and drawing, explain how a rainscape works as a model of the water cycle.</p> <ul style="list-style-type: none"> <li>Working in small groups, construct four rainscapes from the same materials. Place each rainscape in a different part of the room, making sure that they all receive different amounts of daylight. Put one under a box and one behind a cardboard or paper screen to shade it from windows.</li> <li>Working in the same small groups, observe the rainscapes daily, spending a few minutes at each to compare and contrast what is happening.</li> <li>Each group returns to their rainscape to record the daily details and to photograph the container through a side view.</li> <li>At the end of the week, each group shares their recorded information, highlighting any differences found in the four rainscapes.</li> </ul> <p><b>Technology Project</b></p> <p>Do a drawing for each stage of the water cycle. Then, using PowerPoint or the Kid Pix software program on the computer, create a slide show that shows the water cycle in action.</p> <p><b>What other performance-based assessments would you add?</b></p>

performance rubrics establish known-in-advance criteria to assess student performance, describe in concrete terms the differing degrees of accomplishment needed to meet those criteria, and allow students and teachers to discuss areas where best work has been done or improvement is needed (Edwards, 2001). Tech Tool 3.3 (page 79) discusses online resources for developing rubrics and quizzes.

A single assignment may have several rubrics to assess and grade different parts of the activity. For example, elementary school science students using a problem-solving model might be assessed on at least four separate performances:

- How accurately they define the problem
- How successfully they design a strategy for solving the problem
- How effectively they implement the plan
- How clearly they explain their findings and conclusions

Middle and high school students might receive similar rubrics for their science assignments, but with performance expectations that reflect more advanced work and understanding.

Teachers use rubrics so students have (1) a clear framework for how assignments will be evaluated as part of the course grading process and (2) specific activities or accomplishments to complete to achieve a certain level, score, or grade. As a new teacher candidate, you may be asked to design rubric-based assignments during your student teaching, giving you an opportunity to use this form of assessment with students.



TABLE 3.2 Roles for Technology in Performance Assessment

Technology Tools	Assessments of Students by New Teachers	Assessments of New Teachers by Supervisors
Word processing, PowerPoint, and other computer applications for preparing papers and presentations	Papers and presentations by students in classes	Papers and presentations by new teacher candidates in teacher education classes
Digital portfolios or other computer-based collections of materials	Examples of work completed by students	New teacher-made lesson plans and related curriculum materials
Video and audio tapes or podcasts	Performances by students using academic material	Field observations of teaching
Teacher-constructed websites or digital portfolios showcasing examples of best teaching practices	College admissions or job applications	In-person interviews with future employers

The key to constructing rubrics is identifying what you want students to do as part of a class activity or assignment in specific terms. For example, the statement “I want my students to write a high quality persuasive essay” sets forth a student performance goal. You must now construct a clear rubric to evaluate the essays you receive and to help students construct essays that meet your expectations. For instance, writers must complete the following steps:

- Compose an engaging introduction that captures readers’ attention
- State a thesis sentence that clearly advocates a position
- Add interesting and convincing examples that support the argument
- Draft a conclusion that effectively summarizes the main idea in a new way

Stating the items to be evaluated—introduction, thesis sentence, examples, and conclusion—is only the first step. You need to explain to students what makes an introduction engaging, a thesis sentence clear, the examples convincing, and the conclusion summative. If an engaging introduction is one that uses lively language, compelling facts, or a provocative claim to focus the reader’s attention on the issue being addressed, then classroom instruction must include these ideas so that the rubric corresponds to material that the students have been learning and practicing in class.

Rubrics require teachers to be relentlessly concrete in their criteria. If “A” is the highest grade on a writing assignment, then “A” specifically means a writer demonstrates critical thinking, applies concepts and ideas at an advanced level, and uses the conventions of written language appropriately. Each of those criteria can be explained in specific terms on a rubric, as follows:

- “Critical thinking” does not mean quoting what other writers have said, but using what other writers have said to formulate one’s own view of a subject.
- “Applying concepts and ideas at an advanced level” means that the writer understands the complexities of a subject and can communicate about the subject from more than one point of view.
- “Using conventions of written language appropriately” means that the essay follows the standard conventions of spelling, punctuation, and grammar.

Students can then use their knowledge about how they are being assessed to inform the academic work they are doing for the teacher.

Making an assignment clear, in your own mind and in the minds of your students, is not a simple task. In our persuasive essay example, you, the rubric constructor, might choose to “drill down” into evaluation even further, for example, specifying how many new vocabulary words or how many pages the paper must contain to earn an A, B, C, or D grade. The usefulness of a rubric lies in its level of concreteness and how the criteria are explained to students. Students need to know what constitutes superior, good, poor, or unacceptable performance before they do the work.

PEARSON

myeducationkit™

Go to the Tutorials section of Chapter 3 in MyEducationKit and access the practical tutorial and skill-building activity titled “Rubistar Tutorial.” Use the tutorial to learn how to create a rubric.



# TECH TOOL 3.3

## ONLINE RUBRICS AND QUIZZES



For new teachers, the process of creating rubrics and designing quizzes can be very time-consuming parts of doing all phases of lesson development for the first time. Online rubric and quiz templates can be a helpful resource, allowing teachers to use a preestablished model or modify a template to fit the specific needs of their students. RubiStar and QuizStar, resources from ALTEC (Advanced Learning Technologies in Education Consortia) at the University of Kansas, are two easy-to-use Web-based templates. ALTEC also provides TrackStar, a planning tool mentioned earlier in this chapter.



### RubiStar

RubiStar is an online tool for creating rubrics electronically. The RubiStar system provides a set of templates that teachers can either use as written or customize to fit the parameters of a particular assignment. Rubrics are provided in six areas: Multimedia, Products, Experiments, Oral Projects, Research and Writing, and Work Skills. Two types of rating scales are available: numerical (4, 3, 2, and 1) and descriptive (excellent, good, satisfactory, and needs improvement). Each rubric area includes categories; for example, the research report rubric evaluates students on “amount of information, organization, quality of information, sources, and mechanics” (Schaapveld, 2000). Each rubric you make in RubiStar is saved to its own URL so you can access it at any time.



### QuizStar

QuizStar provides software for multiple-choice, true/false, and short quiz creation with varied administrative options, including opportunities to review quiz results by class, student, and questions. Multiple data formats can be generated that are compatible with conventional data-processing programs.



### CONTACT INFORMATION



**4Teachers.org** [www.4teachers.org](http://www.4teachers.org) RubiStar and QuizStar are available for free. Registration is required. In addition, teachers will find a collection of other assessment and evaluation tools as well as other resources that support classroom instruction at all grade levels.



## CHAPTER SUMMARY

**FOCUS QUESTION 1:** What is “lesson development using technology”?

- Lesson development is central to the work of every teacher.
- Lesson development is a process of creative design and decision-making that includes three elements: (1) what to teach, (2) how to teach, and (3) how to know what students have learned.
- Technology tools support all three aspects of lesson development.

**FOCUS QUESTION 2:** What are the “student learning objectives” and “understanding by design” (backward design) models of lesson planning?

To check your comprehension on the content covered in the chapter, go to the MyEducationKit for your book and complete the Study Plan for Chapter 3. 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 chapter content.

- Student learning objectives emphasize specific skills and information that students will know and be able to use. Understanding by design (UBD)—also called backward design—emphasizes enduring understandings and essential questions that students should learn.
- Successful student learning is the end goal of all lesson planning—whether the organizing schema is based on learning objectives or enduring understanding and essential questions.
- Teachers must decide whether starting with the means (learning objectives) and moving to the ends is a more useful approach than starting with the ends (enduring understandings) and moving to the means that best fit the needs of their students and school.
- Technology helps teachers plan engaging learning experiences and instructional activities through online lesson planning templates and lesson plan websites. These topics are discussed in more detail in Chapter 6.

**FOCUS QUESTION 3:** How can teachers use technology to make decisions about meeting educational standards in their lesson plans?

- National, state, and local curriculum frameworks help define what academic content teachers must present to students.
- The Internet is a vast source of academic content resources for teachers, who can conduct research and locate materials using Internet research. This topic is covered in more detail in Chapter 5.

**FOCUS QUESTION 4:** How can teachers evaluate and assess their students?

- Teachers use test and performance assessments to measure the knowledge of students before, during, and after teaching lessons.
- Technology offers multiple ways to conduct test and performance assessments, both as part of traditional measures such as tests and quizzes and in supporting performance measures such as portfolios, exhibitions, and student writing.
- Test assessment includes norm-referenced tests, which compare a student's performance to other students of the same grade or age, and criterion-referenced tests, which compare a student's performance to a set of specific objectives or standards.
- Proponents of standardized tests contend that these tests accurately measure student performance while encouraging schools to reform educational practices. Critics believe that standardized tests measure only a limited amount of student knowledge while forcing schools to deliver a narrow, teach-to-the-test curriculum.
- Standards-based assessment is used to measure student performance in terms of specific national, state, or local standards.
- Instructionally supportive assessment involves the use of multiple forms of evaluation data to provide a more complete picture of what students know and are able to do academically.
- Performance evaluation is based on assessing how students perform when they are asked to complete specific tasks or assignments.
- Rubrics provide known-in-advance performance criteria for students to use in completing school assignments, and as such, offer ways for teachers to more fairly evaluate the work of every student in a class.



## KEY TERMS

Academic content  
Assessment  
Criterion-referenced tests  
Electronic grading software  
Enduring understandings and essential questions

Evaluation  
High-stakes tests  
Instructionally supportive assessment  
Learning assessments  
Lesson development  
Norm-referenced tests

Performance assessments  
Standardized testing  
Standards-based assessments  
Student learning objectives

Student performance rubrics  
Teaching goals, methods, and procedures  
Test assessments  
Understanding by design (UBD)



## ACTIVITIES FOR YOUR TEACHER PORTFOLIO

### 1. LESSON DEVELOPMENT USING STUDENT LEARNING OBJECTIVES AND BACKWARD DESIGN

After reviewing the “Ecological Footprints” and “Rainscapes Show the Water Cycle” lesson plans, choose a lesson you would like to teach and outline it using a learning objectives format and understanding by design approach.

- How do these frameworks for lesson development differ?
- How are they the same?
- What are their advantages and drawbacks?
- How might you utilize a student learning objectives or backward design model in a 3-day plan for reading groups and in a 3-week plan for science study?
- Do you prefer one format or the other for your lesson planning or does one planning framework work better with one type of lesson rather than another?

### 2. CURRICULUM DEVELOPMENT: THE LIFE CYCLE OF PLANTS

The life cycle of plants is a common science topic in elementary and secondary schools. Many teachers have students grow bean plants or flowers in the classroom as a way to engage directly in the study of plant biology. How might technology change the study of plants in the lower and upper grades? For example, teachers and students might visit the Plants in Motion website to see QuickTime movies, use digital or video cameras to show plant growth, utilize electronic devices to measure changes in plants, or develop a PowerPoint presentation of their research findings.

- In what other ways might technology be used in the study of plants?
- How might these uses of technology transform the teaching and learning experience?

### 3. HAVING STUDENTS PLAN A LESSON

Ask your students to plan a lesson for the class as a way to involve them in the processes teachers use to create stimulating learning experiences for their subject. Choose a common topic for the group—such as the planets in the solar system for grades 3 through 6—about which students are likely to have a basic working knowledge. Explain the parts of a lesson plan, and then ask students to design how they think the academic material might best be taught.

Middle and high school students will enjoy a variation of this planning process by learning about Howard Gardner’s theory of multiple intelligences (1983, 2000, 2006). Again, choose a common topic that everyone knows about in general, and explain Gardner’s eight intelligences (2006): linguistic, musical, logical/mathematical, spatial, bodily kinesthetic, intrapersonal, interpersonal, and naturalist.

Divide the class into groups of four to five students each and give each group two of Gardner’s intelligences. Ask them to design a lesson that uses the intelligences specified to teach about the solar system or some other topic. When they have finished, discuss with the students what intelligences they believe they possess most strongly and how they think teachers could use those intelligences in the teaching of English/language arts, mathematics, science, history/social studies, and other subjects.

# 8

## Communicating and Networking with Websites, Blogs, Wikis, and More

Far from undermining libraries, the Web puts the world at students' fingertips. Letters and notes are still appropriate in many circumstances, but email, instant messaging, and electronic conferencing provide writers with an immediate and much larger audience. Educators need to tap into students' inherent interest in these methods of creating and sharing writing.

—National Commission on Writing in America's Schools and Colleges (2003)

### CHAPTER LEARNING GOAL

#### Information Communication

Using communication technologies to enhance learning through interactive information exchanges and networking

### CONNECTING to the NETS

#### NETS-T

- 2 Design and Develop Digital Age Learning Experiences and Assessments
- 3 Model Digital Age Work and Learning

#### NETS-S

- 2 Communication and Collaboration

### NEW TECHNOLOGIES

- Email and instant messaging
- Teacher-/student-authored websites
- Teacher-/student-authored blogs
- Digital image scanners
- Wikis and wikitexts



## CHAPTER OVERVIEW

Chapter 8 concentrates on the various ways that teachers and students can use computers and other technologies to share ideas and information in classrooms and online learning environments. The chapter begins with educational websites as an information communication medium, particularly those sites that are “home-grown” by teachers and students working together. Next we turn to email, instant messaging, threaded discussion boards, blogs, and wikis as promising ways for teachers and students to share academic information and engage in collaborative learning.

The chapter relates to NETS-T Standard 3, Part c, which notes that teachers and students should “communicate relevant information and ideas” to multiple audiences using a variety of digital tools. It also addresses NETS-S Standard 2, which calls for students to learn ways to interact and work together electronically.



## FOCUS QUESTIONS

1. How can teachers use communications technologies as teaching and learning tools?
2. How can teachers use email or instant messaging to foster information exchanges with and among students?
3. How can teachers use a website or blog to improve teaching and learning?
4. How can teachers use wikis to promote collaborative learning?

## A Classroom Website

A middle school student asks his teacher, “Miss B., what’s this week’s assignment? I really want to do a great job and get a good grade.” Rather than explaining the assignment, the teacher refers to a technology tool that she has created: “Look at our class website. It has all the information you need: notes from class, links for more research, and a rubric showing how I will grade the paper. Post an entry in our class blog. It’s interesting to see what everyone has to say.”



*Students today communicate information rapidly with cell phones and other handheld devices. Educators are developing ways to deliver academic information with these devices and use them for learning.*

Using communication technologies to enhance teaching and learning is this chapter’s learning goal. As our vignette shows, communicating information is an essential ingredient of education. To illustrate this point, recall the different teaching methods you have experienced as a student—lectures, discussions, cooperative learning groups, competitive tests, personal writing, interpretive essays, simulations, experiments, educational games, debates, and worksheets. All these instructional approaches—and others you may have remembered—involve communicating information from teacher to students, students to teacher, and students to students. Today, computer-based technologies are changing how the information is communicated, and therefore, how teaching happens in K–12 schools.

All of us are part of multiple communication systems. Perhaps you carry a cell phone, have an email account, use an ATM, engage in text messaging, visit online communities, use PowerPoint as part of class presentations, rely on a personal digital assistant, do online shopping, or access some other technology to share information with other people.

As a teacher, you face an array of new choices about how to integrate **communication technologies** into your instructional practices and related outside-the-classroom professional responsibilities. Communication technologies are electronic tools that use computers and the Internet to make possible the rapid exchange of

information between people. Electronic communication is also known as **computer-mediated communication** and encompasses many different kinds of information exchanges between people.

There are multiple communication technologies that you might use in your teaching, including the following:

- **Email (electronic mail)** and **instant messaging (IM)** are forms of online communication that feature short electronic exchanges between individuals, such as between teachers and students or family members or between administrative and educational personnel.
- **Teacher or classroom websites** are Internet sites developed by teachers to communicate information about themselves and their classes to students, family members, and school and educational personnel.
- **Blogs** (short for **weblogs**) are publicly accessible online journals written by individuals (such as teachers) for others (such as students, families, and other educators) to read and comment on.
- **Online discussions** are electronic forums where teachers and students discuss educational topics. Online discussions are a common component of many teacher websites and blogs.
- **Wikis**, from the Hawaiian word meaning “quick” or “rapidly,” are websites that teachers and students create together by reading and revising each other’s ideas and comments.

In schools, different authors use each of these communication technologies to communicate with different audiences for different educational purposes (see Table 8.1). These communication technologies raise important questions for teachers:

- How might you use a classroom website, email, instant messaging, online discussion boards, blogs, or wikis with students, families, or other teachers?
- What skills and perspectives do you and your students need to learn to convey information using communication technologies?
- What combination of communication tools will create positive learning experiences for you and your students?

Answering these questions is an essential step in building your own information communication system as a teacher, a process that can be likened to customizing your cell phone or selecting components for a home entertainment system. Cell phones, for example, offer wide choices from calling plans to photo and video capabilities to Internet and email access. You choose the phone and features you need and can afford. You make similar choices when choosing a home or apartment entertainment system. You might build a system piece by piece through purchases of a television, stereo receiver, DVD player, and separate speakers to create surround-sound video and audio environments, or you may prefer having multiple functions built into one or two pieces of equipment. Just as you select the options that fit your needs and lifestyle, a teacher selects the communication components best suited to his or her teaching style and the class's needs.

**TABLE 8.1** Comparisons of Communication Technologies

Type of Communication Technology	Purpose	Author	Audience	Uses by Teachers
Instant messaging (IM)	Instantaneous communication between two or more individuals	Individual	Individual	Communicating with colleagues
Email	Sending and receiving messages over the Internet	Individual	Individual or group	Communicating with students and families Communicating with other teachers
Discussion board	Exchange of ideas and information about a topic, usually moderated by an editor	Group	Group	Electronic discussions of academic material
Teacher-made website	Collection of Web pages related to a specific topic or activity	Individual	Group	Information for students and families Publishing student work
Blog	Online journal, usually maintained by one or two bloggers, featuring comments by readers	Individual	Group	Personal reflections on teaching Sharing ideas with students Professional teaching portfolio Information for students and families
Wiki	Web pages created by a collaborative group of writers and designers	Group	Group	Group projects by students Group projects among teachers





## Communicating Electronically as a Teacher

Today's students are immersed in multiple electronic communication environments, regularly using email, instant messaging, blogs, or other electronic systems to talk with one another. So many of these electronic communication systems are being used in schools where administrators are instituting bans or limits on the devices during school hours. The widespread popularity of electronic communication among children and adolescents raises important questions as to how these technologies will become new catalysts for teaching and learning in and out of school.

Teacher and classroom websites, email, instant messaging, discussion boards, blogs, and wikis are the major components of any communication system you might create as a teacher. Practically speaking, it is not necessary to use them all. For example, you might choose to create a class website or blog, but not engage in email or instant messaging with your students or their families. Or you might establish an online discussion group or create a class wiki, but not use any other electronic communication options. You decide the technologies that will best meet your needs and the needs of your students.

To consider how you, as a new teacher, might use communication technologies to create engaging and productive educational activities, it is helpful to know the similarities and differences between synchronous and asynchronous electronic communication.

- **Synchronous communications** occur in real time, as with cell phone conversations or instant message exchanges. Individuals converse as if they were meeting face to face; they do not have to wait any length of time for a reply to their statements.
- **Asynchronous communications** involve a time delay, as experienced in email messages, threaded discussions, or blogs. Communicators wait for replies to their statements, although usually the time lag is dramatically shorter than for a letter or postcard sent through postal mail.

As a teacher, you already employ synchronous and asynchronous forms of communication as you convey information to your students. A classroom discussion happens synchronously when students and teachers ask and respond to questions. The comments you write on student papers are delivered asynchronously when the papers are returned after you grade them. In digital environments, the modes of delivery are different, but the ways of communicating information are similar.

### Social Networking for Educators

Many people associate electronic information communication with **social networking**, a practice marked by controversy. Social networking is the process of sharing personal information and profiles online through text messaging, chatting, blogging, or viewing online communities (such as Facebook, MySpace, or Webkinz). While 96 percent of youngsters ages 9 to 17 use social networking technologies, most school districts have rules against social networking during the school day (National School Boards Association, 2007). Social networking has created unhappiness and misunderstandings between educators and students. School officials worry about inappropriate behaviors online by students as well as electronic distractions from academic activities. For their part, many students resent adult restrictions on one of their most popular forms of social and computer interaction.

At the same time, more and more teachers are engaging in **educational networking** (also called *social networking for educators*). Educational networking involves teachers using social networking technologies for educational rather than social purposes. More than 70 percent of the nation's school districts have student website programs, 50 percent engage in online collaborative projects with other districts, and 33 percent have organizational or student blogs that are used for communication and instruction (National School Boards Association,



## VOICES

from the classroom

*A high school teacher commented on how she used communication technologies to promote thoughtful learning by students.*

My students were able to gain practical skills while still being challenged to think and analyze. While I try to diversify activities in the classroom by utilizing multiple intelligences, many hands-on activities do not provide practical skills for the future. Technology can combine the two in many ways. In addition to practical skills, students were forced to think about communicating through multiple forms of media.

2007). Students too value using technology for educational activities; 59 percent of students in a national survey indicated they spend time online talking about educational topics, including plans for college, career choices, jobs, and schoolwork (National School Boards Association, 2007).

Teachers can use educational networking in many productive ways:

- Teacher-to-teacher discussions about curriculum and instruction
- Book groups
- Connecting to national educational policy and reform organizations
- Exchanging information on educational research
- Group editing of projects and writing

Ning is an online service that allows users to create their own social networks, quickly and without needing any technical skills. Your network can be private (only invited people can join) or public (open to anyone). Ning reports it had 220,000 active accounts in April 2008.

Ning, with its capacity to create private networks, lets “instructors take advantage of social networking in a neutral setting” (EDUCAUSE Learning Initiative, 2008, April). Teachers can control who is part of the network and what the members of the network are talking about online. Initially, conversations can be among teachers only, for professional development purposes. Eventually, as the technology becomes more widely used, student contributions can be added to the network.

## Using Electronic Communications in Your Teaching

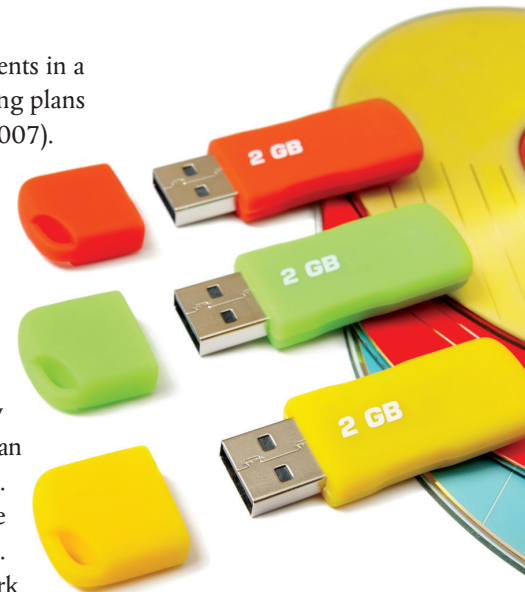
Teachers have five major ways to use electronic communications in their inside- and outside-the-classroom professional work:

- Teaching interactively
- Sharing information
- Building learning communities
- Publishing student work
- Energizing student writing

**Teaching Interactively.** An electronic communication system extends the impact of your teaching well beyond the information taught in the classroom or presented in the textbook. Teachers know time is fleeting—there is never enough of it to teach everything students need to know. At school’s end each day, teachers think, “If only I could increase time teaching the material, my students would learn so much more.” Trying to respond to this dilemma by developing paper-and-pencil homework for students is a large task—organizing the activities, making the copies, logging in what has been completed, and trying to individualize assignments to fit the needs of different students. Developing your own electronic communication system offers an efficient way to continue teaching your students when class or school is not in session.

Teachers can post class notes, inquiry questions, homework assignments, writing ideas, Web links for further research, suggestions for further reading, and experiments and other activities to do outside of class on a teacher or classroom website. Email, instant messaging, and discussion boards promote electronic exchanges of ideas among the members of your class. Your teaching continues electronically as students, reading and reviewing what you write and post, connect what they have been learning in school with outside-of-school activities. The process becomes interactive as students respond by submitting their own ideas, inquiries, and homework. These kinds of electronic interchanges can build and sustain momentum for learning with a generation of students accustomed to online communications.

Keeping students engaged with academics is important to your success as a teacher. Lectures and teacher-led discussions, followed by worksheets and tests, reach only some of the students some of time. A far larger majority of students learn most of what they know by trying it out for themselves in minds-on, hands-on learning situations. As psychologist Howard Gardner (1983)



PEARSON  
**myeducationkit**

Go to the Tutorials section of Chapter 8 in MyEducationKit and access the practical tutorial and skill-building activity titled “Social Networking.”



Go to the Assignments and Activities section of Chapter 8 in MyEducationKit. Complete the video activity entitled “Approaches to Online Learning” and respond to the questions that accompany the video.

has noted, schools mainly teach to one or two dominant learning styles, pronouncing those who do not learn well in these ways to be insufficient in their attempts to learn. The challenge for today’s teachers is to expand how they teach so that more students will succeed and, enjoying this success, stay connected with academic learning. Active engagement using Web-based materials and activities puts students in the position of “doing” math, science, history, or language arts instead of listening to teachers tell them about these subjects.

Teaching online extends the ways that you can connect with your students. For example, students can review online notes or lesson plans before an exam. These materials aid in the recall of key information perhaps forgotten or missed in class. To create increased levels of student engagement, post the items used in your teaching—lesson plans, lecture notes, discussion questions, skill practice worksheets, ideas for further study, and student-written materials to reintroduce the ideas and information presented in class. Then pose thoughtful questions and interesting activities that ask students to interact with the information through individual and group discussions and presentations, both online and in class.

**Sharing Information.** A teacher’s electronic communication system has the potential to open a 24/7 flow of information between the classroom and students’ families and caregivers, as well as with other teachers and school administrators. In one national study, researchers from the Harvard University Family Research Project found that 36 percent of families used the Internet to communicate with schools, although only once or twice a year. Those families tended to have higher incomes, more education, and greater access to computers. Still, researchers found a positive connection between Internet-based family communication and higher academic achievement and expectations among twelfth-grade students (Bouffard, 2008). Just how Internet-based family–school communication helps student achievement is still not completely clear, but the researchers believe that the availability of online information may promote greater family involvement in student learning.

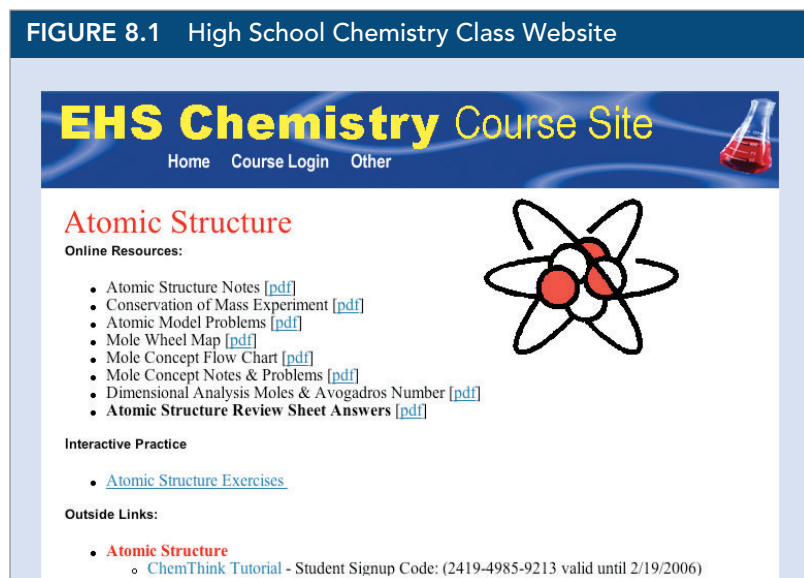
As a new teacher, it therefore makes sense to provide information about class assignments, grading policies, upcoming activities, homework, and other topics online in an easily updatable format. Figure 8.1 shows the material one high school chemistry teacher posted for the study of atomic structure, one of the required topics in his curriculum.

There are numerous advantages of posting information online. Rather than spending valuable in-class minutes giving assignments, students and their parents can be directed to the website to find answers to their questions. Everyone receives the information in the same way, minimizing

confusion or doubt. Moreover, when families consult a teacher’s website, students may be less likely to say, “I don’t have any homework.” Adults can locate the actual assignments and due dates online.

Other teachers and building administrators also benefit when they are able to see that information is being communicated to students and families in ways that are consistent with the mission and goals of the school. Relying solely on electronic communication, however, may disadvantage families who do not have computers or who are intimidated by school organizations. Researchers from the Harvard Family Research Project recommend that teachers establish multiple ways to communicate with families, both electronic and nonelectronic, while exploring the uses of new social networking technologies like blogs to increase family involvement (Bouffard, 2008).

**FIGURE 8.1** High School Chemistry Class Website



Source: Reprinted by permission of Shawn Sheehan, Easthampton High School.

**Building Learning Communities.** An electronic communication system invites students to join a community of learners who are exploring topics of interest. As students read what you have posted, contribute their own ideas, and respond to what everyone else has said and done, an important collaborative activity is created. In this venue students feel part of something meaningful and relevant. Adolescents in particular are drawn to online discussions as ways to make sense of issues of self-identity and personal values. Blogs produce a similar type of collective experience by providing an electronic space for people to share ideas and interests together.



From a learning standpoint, the impact of learning communities can be quite powerful. As literacy educator Frank Smith (1998) has noted, children “learn from the company they keep.” As a teacher, encourage students to be part of groups that devote themselves to serious study and academic accomplishment.

“I Wonder Questions,” written and answered in online “I Wonder Journals,” are immediate ways for students to explore topics of personal interest. Many topics produce interesting and extended “I Wonder” explorations, such as the following questions from second-graders: “How do snakes shed their skin?” “What is an estuary?” “Where is Madagascar?”

Rather than send students to the library or to an Internet information source to find information by themselves, teachers can post “I Wonder” questions on their website for group investigation. Younger students, with the assistance of siblings or adult family members, can research and submit what they have learned. Over time, these collective explorations will produce an impressive collection of information by everyone in your classroom.

Middle and high school students, too, have “I Wonder” questions that they would like answered. These questions are often centered on issues connected with self and peers. “What do you think?” and “What would you do?” questions open an effective format for generating online discussions among members of a learning community. Middle and high school students want to express opinions and make their voices heard on many current topics. By asking their views, and the reasons behind those views, teachers actively involve students in thinking deeply about their beliefs and why others may have different ideas.

**Publishing Student Work.** A teacher’s electronic communication system can be an inviting way for students to publish and display work done in the classroom or at home. Class activities and assignments take on new meaning when students realize that their work is going to be seen by more people than just the teacher. Students enjoy creating something that others are going to see, hear, or read. Every year, school science fairs, poetry readings, history projects, music and dance performances, art exhibitions, and dramatic plays generate great interest and energy from students. These students enjoy doing the work because the activity is meaningful to them and because there is an audience who is going to see the end result. Using your communication system to display the products, performances, and publications of your students generates enthusiasm and anticipation.

Classroom newspapers or newsletters that many teachers once produced using the school’s copying machine have become a new experience when published online, for the following reasons:

- Production is much quicker because the material can be scanned into the computer and arranged graphically without lengthy cutting, pasting, arranging, and rearranging by hand. The results are visually appealing, particularly when students’ original color choices are preserved.
- Students’ work gains permanence; it is no longer confined to paper copies that get lost, ripped, or discarded before and after they are viewed by family members.
- There are opportunities to involve students in the process of creating and maintaining your news sharing system. “My class website is a work-together, everyone-learns-from-each-other concept,” said one second-grade teacher who had previously spent hours after school and on weekends producing a paper newsletter for families. Her young students could not help



produce a newspaper at the copy machine, but they could go to the computer and help select which drawings, writing, and photos to post; decide in what order to present images; add their own text (either directly or through dictation to a typist); or assist other parts of the design and production process. For these students, the online newsletter became publishing that they helped to create, both the material being showcased and the electronic format being used.

**Energizing Student Writing.** Establishing an electronic communication system opens multiple possibilities for students to write to you and to each other. It is an opportunity to emphasize writing at a time when the teaching of writing in schools has become, in the words of The National Commission on Writing, “the neglected ‘R’” (2003, 2006). Looking at classrooms around the country, the commission painted a dismal picture of the state of writing in K–12 schools:

- Nearly all elementary school students (97 percent) spend 3 hours or less a week on writing assignments, or about 15 percent of the time they spend watching television.
- Nearly three-quarters of K–12 students “never get a writing assignment from their history or social studies teachers.”
- In high schools, 4 out of 10 students “never” or “hardly ever” write a paper of three or more pages.
- By the end of high school, “most students are producing relatively immature and unsophisticated writing” while one in five young writers “produce prose with a substantial number of errors in grammar, spelling, and punctuation.” (National Commission on Writing in America’s Schools and Colleges, 2003, p. 20)

Despite writing’s decline in schools, teenagers—and younger students—write eagerly and expressively for their own pleasure (National Commission on Writing in America’s Families, Schools and Colleges, 2006). Some 85 percent of 12- to 17-year-olds send text messages, email, or post comments on social networking sites, although 60 percent of those teens do not think of their personal electronic communications as “real” writing (Lenhart, Arafeh, Smith, & Macgill, 2008). Journal writing is another favorite nonschool writing activity for many youngsters; 49 percent of girls and 47 percent of African American teens keep their own journal (Lenhart, Arafeh, Smith, & Macgill, 2008).

Ask those same students to write in school and you may observe reluctance or resistance. For many young writers, school writing assignments connote formal language, appropriate grammar, and correct spelling—conventions of writing they do not all feel confident using. By contrast, online writing seems easier to do, less restrained by adult roles and expectations. We discuss more about the issue of students writing in online environments later in this chapter.

No matter what subject you teach, you will be a teacher of writing and a teacher of communication. Every subject area requires students to write, whether it is an interpretive essay, a science report, a statement about how to solve a math problem, or a historical analysis. Similarly, every subject requires students to be able to communicate what they know and what they have learned using different forms of written expression. This may be through tests and quizzes, but also through student-created papers, presentations, portfolios, or performances in both print and electronic formats (Kist, 2004). In every case, students must learn how to clearly convey their ideas to others in words, images, symbols, and sounds.

Beyond the expectations of all the different curriculum standards, written communication is an essential skill in an information society. Writing allows students to “connect the dots in their knowledge” and is central to self-expression and civic participation (National Commission on Writing in America’s Schools and Colleges, 2003, p. 14). Writing as well as verbal and artistic communication allows the communicator to express mental images of facts and information that would otherwise remain inaccessible in the mind of the individual. New synchronous and asynchronous communication technologies may be key to the successful teaching of writing in schools as they utilize habits that students want to practice—communicating textually through computers and cell phones—while offering to teachers instructional opportunities that were unavailable even 10 years ago.

## Email and Instant Messaging

Email and instant messaging (IM) are examples of communication technologies that have become so widespread that while most of us simply take them for granted, teachers can use them to connect to students, colleagues, and families in new ways. Email is short for electronic mail and refers to messages sent between people using the computers and the Internet. Instant messaging (IM) or *text messaging* refers to real-time typed text interactions between people using computers or mobile devices like cell phones or personal digital assistants (Consortium for School Networking, 2007; EDUCAUSE Learning Initiative, 2005, November).

Adults use email and instant messaging for workplace communication, business networking, online shopping, family talk, and recreational pursuits. For example, more than one in four people—some 53 million Americans—use instant messaging, and the numbers are growing steadily, up 29 percent since 2000. Americans sent nearly 160 billion text messages in 2006 alone, double the number sent in 2005 (Boss, 2007).

Adolescents and children—a segment of the population where nearly four in every five individuals use the Internet—are the largest consumers of email and instant message technologies (Lenhart, Madden, & Hitlin, 2005). Table 8.2 presents recent statistics about email and instant messaging use among teenagers and young adults.

Young students are motivated by the ways that email and instant messaging enable them to communicate using the forms of talk they have with friends and peers in school corridors, neighborhood street corners, malls, and playgrounds. It allows them to use **textspeak** (see below), an abbreviated collection of symbols and letters that are used for quick communication when using cell phones or instant messaging on a computer. This is a sample email message with textspeak and Standard English translation:

Hey, Wuz ^? Nm here. U look gr8 2day  
Wht R U doing 2morrow?

Nvm. I don't care. Lol, j.k. b.r.b. ok.

Do u know wht 4 HW? Me neither. w/e  
will fail 2gether.

Hi, what's up. Not much here. You look great  
today. What are you doing tomorrow?

Never mind. I don't care. Laugh out loud, just  
kidding. Be right back. Okay.

Do you know what the homework is? Me  
neither. Whatever, we'll fail together.

**TABLE 8.2** Email and Instant Messaging Use among Teens and Young Adults

Email	Instant Messaging
89 percent of adolescents send or read email.	62 percent of individuals ages 18 to 27 use IM.
Email is a more popular activity than visiting movie-, music-, or sports-related websites (84 percent); participating in online games (81 percent); getting news about current events (76 percent); or sending or receiving instant messages (75 percent).	21 percent use IM several times a day, and 46 percent say they use IM more often than email. Only 1 in 3 individuals ages 28 to 69 and beyond use IM.
Teenage girls (93 percent) are the most frequent users of email technology	More than half of IM users report they are doing other things—surfing the Web, watching TV, talking on the phone—“ <i>virtually every time</i> ” they are IMing.
	Nearly half post “away messages” while about 1 in 3 have constructed online IM profiles for others to see.
	Most IM users are communicating with 1 to 5 people. Additionally, most text messaging happens over the computer, but one in three teenagers have used a cell phone to send text messages.

Sources: Adapted from Lenhart, Madden, & Hitlin, 2005; Shiu & Lenhart, 2004.



Interestingly, instant messaging is rapidly becoming the communication system of choice for many young students, ages 12 to 17. When asked which modes of communication they use most often when communicating with friends, online teens consistently choose IM over email in a wide variety of contexts (Lenhart, Madden, & Hitlin, 2005, p. vi).

### Strategies for Using Email and IM with Your Students

Email may be the more useful communication tool for teachers, having its own built-in recordkeeping system. When you email someone, you have a record of what you said, and you have a record of what is said back to you. In schools, email provides a basic accountability structure for everyone involved. Knowing that there is a record of the correspondence, students have a reason to post school-related questions and comments using appropriate and thoughtful language. Instant messaging, by contrast, is intended for informality and immediacy, and those qualities are less useful when trying to convey school information to students. Email allows you to craft a thoughtful reply, and spell check it, which is preferable to dashing off a quick response. Following are additional ideas for teachers interested in using email and instant messaging in their teaching.

**Use Password-Protected Student Communication Systems to Email and IM.** Teachers must implement a password-protected student communication system before using email or other Internet-based communications with students. Such systems minimize the risks associated with the Internet, such as exploitative merchandisers, scam artists, political extremists, predatory individuals, or other unsavory influences. There is also the possibility of exposure to computer viruses, spam, and various privacy infringements. Password protection restricts who can access your communications with students and your students' communications with you, thereby reducing the risk factors associated with Internet use. Many schools provide password-protected spaces for teacher/student/school communications.

**Use Email and Instant Messaging to Teach about Spelling.** Email and instant messages that use textspeak emphasize the “deliberate misspelling” of words (Templeton, 2004, p. 58). Rather than decry the use of nonstandard language, teachers can explore word use and spelling patterns explicitly with students. By paying attention to the “conventions of this ‘underground’ genre,” students can become better spellers, more aware of the patterns of word sounds and the structures of word spellings (Templeton, 2004, p. 59). For more on how teachers can respond to the growth of email, instant messaging, and other new technology, see the position paper “Beliefs about Technology and the Preparation of English Teachers” on the website of the National Council of Teachers of English (NCTE).

**Establish Email Connections to Libraries, Museums, and Universities.** Libraries, museums, universities, and other educational organizations offer a host of email options for teachers and students. Students may ask questions on any number of academic topics and get responses from experts in that field. For example, Ask a Historian at George Mason University and Ask an Earth Scientist from the University of Hawaii (mentioned in Chapter 6) allow students to get answers to science-related questions by email. More and more educational and community organizations are providing resources to schools via email as well. One key learning goal when using email is formulating thoughtful questions based on topics in the curriculum. Remember that it may take some time for an organization to reply to a request so it is important to let your students know that not every question will get an immediate response.

**Initiate Email Correspondence with Elected Officials and Other Public Policy Makers.** Writing letters to elected officials or other public policy makers is a time-honored way



Go to the Assignments and Activities section of Chapter 8 in MyEducationKit. Complete the video activity entitled “E-mail in the Classroom” and respond to the questions that accompany the video.

for citizens to communicate with and potentially influence government policies. As students in high school civics learn, letters from everyday people can persuade legislators to change policies. In Massachusetts, a letter writing campaign by an elementary school teacher and her students is credited with helping to change a racially insensitive symbol of a pilgrim hat with an arrow through it that was used by the state's turnpike authority. Many people, including Native American groups, were offended, and legislators noted the impact of the elementary school children's letters on their decision to enact a new symbol. The turnpike's symbol today is still a pilgrim hat; however, no arrow is part of it.

Email offers a way for students to express their views to public officials. As part of social studies or English classes, students can prepare a cogent written argument advocating a change in governmental policy. Many times, emails sent to local officials receive prompt and personal replies, whereas those sent to national politicians usually receive a form letter response from a staff person. Also, change happens slowly in U.S. society on most large national issues, so students will need to be prepared for more inaction than action after they share their ideas. Still, email writing puts students in an active stance vis-à-vis the government, demonstrating that everyone's voice matters in a democratic society.

**Hold Online Office Hours.** Some teachers hold online office hours—regular times when they answer student questions and discuss class assignments electronically. Such arrangements function much like a telephone homework hotline, only using computer email (or in some instances, instant messaging). The day before a big exam is one popular time for such teacher–student conversations. Many students prefer to communicate using email because they do not enjoy face-to-face conversation where they lack the time to formulate thoughtful questions and considered responses.

Online communications with students has critics. Some teachers do not wish to be constantly accessible to students, preferring to draw distinct boundaries between communications in and out of school. Others worry about privacy if teachers and students are communicating in the open space of the Internet. Online office hours require careful management to ensure safety and privacy for teachers and students. Some necessary precautions include the following:

- Using password-protected sites
- Having more than one email or IM account to conduct school business in one space and personal communications in another
- Maintaining an archival record of communications



## Websites and Blogs for Teachers and Students

Using free or inexpensive communications technologies, elementary and secondary teachers can produce “home-grown” websites or blogs to reach and teach students. Indeed, teacher-made sites have become part of the educational process in every subject area and at every grade level (Risinger, 2004). As one principal told a new teacher candidate from our campus during a recent job interview: “Your site was really impressive. It was a deciding factor in our wanting to hire you.”

Teachers generally build one of two kinds of online sites:

- *Teacher/classroom website.* A teacher website is primarily devoted to your work as a teacher and professional educator, highlighting who you are and what you have accomplished in your educational career, but also including information about your classes and work done by your students. Such a site might additionally serve as an online digital portfolio, a topic we discuss in Chapter 11. A classroom website is primarily devoted to the activities of your classroom. It differs from the teacher website by giving more attention to work of the students



Go to the Assignments and Activities section of Chapter 8 in MyEducationKit. Complete the video activity entitled “Website Supports Learning” and respond to the questions that accompany the video.

**FIGURE 8.2** High School History Class Website

June 23, 2009  
9:42 AM

## Welcome to Ms. Brown's homepage!


Welcome to my website. This page can be used to find resources and connect to the Moodle website for each of my classes. On the Moodle site you will find weekly syllabi, classroom assignments, notes, and resources. If you need help logging on the the Moodle Server, please see me!

[Connect to the Moodle Server](#)

### WEB RESOURCES

In the My Links section of this page you will find some good internet resources for your classes. The most important link is to my portaportal website collection. We will use this site on a regular basis to do classroom research.

[Ms. Brown's Portaportal](#)



Source: Reprinted by permission of Kelley Brown, Easthampton High School.

than to work of the teacher. Figure 8.2 shows a classroom website developed by Ms. Brown, a teacher at Easthampton High School. Both teacher and classroom websites serve to engage students in academic material by giving them ways to publish their work and pursue their interests in a subject.

- *Teacher blog.* A blog (short for weblog) serves as an online journal where you post information and ideas related to your teaching (EDUCAUSE Learning Initiative, 2005, August; Penrod, 2007). It can also be a site for online interactions between you and your students or between you and other educators (Knittle, 2008; Warlick, 2005). Blogs are multipurpose instructional tools. “Students can comment on items posted. Teachers can pose questions and

ask students to respond. Students can also read other students’ comments” (Risinger, 2006, April, p. 130). Figure 8.3 shows a middle school teacher’s blog page featuring websites related to Ancient Greece, the current topic of study, archives of past topics, a calendar, and news of interest to her students concerning the Westminster Dog Show and the new Olympic Stadium in China.

Deciding whether to create a website or blog depends on your information communication goals as a teacher. Some teachers prefer to put more emphasis on personal accomplishments through a teacher website while other educators stress the writing and research of their students through a classroom website. Blogs offer new possibilities for posting information and fostering student interaction through online discussions, as we will discuss in the next part of this chapter.

In either case, building a website or blog is an opportunity to think expansively and ambitiously about how to integrate communication technology into your teaching. To date, many teachers have used these sites as tools that provide students and families with basic information about class requirements, homework assignments, grades, and special events at school. Yet, websites and blogs can be much more than conduits of administrative information (Downes,

2004). They can be lively, interactive teaching and learning environments, particularly when students are involved in the design, construction, and maintenance of a site.

**FIGURE 8.3** A Middle School Teacher’s Blog Page

### A PLACE IN THE WORLD

A year of curriculum and happenings in my seventh grade social studies classroom.

[Email Me](#)

[Archives](#)

[February 2008](#)

[January 2008](#)

[December 2007](#)

[November 2007](#)

[October 2007](#)

[September 2007](#)

[August 2007](#)

February 2008

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	

[Pages](#)

[Home](#) [About Me](#) [Contact](#)

---

**February 23, 2008**

**Ancient Greece websites**

Here are some interesting Ancient Greece websites. If you find any other good sites, please bring them to class and I will post them here.

[BBC Schools Ancient Greece](#)

[British Museum Ancient Greece](#)

[Timeline of Art History from the Met](#)

[Discovery Channel Ancient Greece Page](#)

[Ancient Greece.org](#)

Posted at 06:54 PM | [Permalink](#) | [Comments \(0\)](#)

---

**February 13, 2008**

**For My Dog Loving Students**

Here is the latest news from the Westminster Kennel Show- [Uno the Beagle](#) wins "Best in Show" and [Beagle Is Top Hound](#).

Posted at 09:20 AM | [Permalink](#) | [Comments \(0\)](#)

---

**February 12, 2008**

**China Olympic Stadium**

Here is an [interesting article](#) about the "Bird Nest" stadium that was built for the upcoming Olympic games. There are great photographs

Source: Reprinted by permission of Dinah Mack, JFK Middle School.

## Differences between Websites and Blogs

Differences between a teacher or classroom website and a teacher blog may appear small since both usually feature postings from the teacher, class schedules, links to other sites, and a calendar of events.

One major distinction is ease of site creation and management. Blog technology is designed to offer a direct route to maintaining a constantly updated site. It offers many resources that appear whenever the blog opens: a calendar, active links

to other websites, an archive of past blog postings, a podcasting list, a place to publish student work, and an online discussion forum.

Another difference is a blogger's ability to interject a personal voice by sharing information and opinions in an informal style. While websites can also feature a personal voice, they have tended to utilize the formal tone of a news report. Blogs, by contrast, are almost always more casual in style. Some teacher blogs sport a relaxed look with lots of links to photographs of their families or of themselves engaging in education-related activities or hobbies outside of school. Others may include top-ten lists of favorite teaching websites, interesting places to visit in the world, best books, or preferred sport teams, as well as other student-engaging information, along with commentary about work being done in school.

Tech Tool 8.1 (pages 220–221) offers three approaches to creating your own teacher website or blog: a do-it-yourself option, commercially available templates, or free online tools for creating websites or blogs.



## Creating Your Own Teacher Blog

Blogging is an immensely popular online activity. Worldwide, it is estimated that “a new blog is created every second” (Berson & Berson, 2006, p. 124). In the United States, over 11 million people have authored blogs and 32 million people have read one (Pew Internet and American Life Project, 2006). Blogs are appearing in unexpected places; for example, city mayors and other elected officials from around the country are blogging with constituents as a way to promote citizen involvement in municipal government (Viser, 2008).

The teenage blogging population is growing dramatically—more than half of all youth have contributed to a blog and nearly one in five have created their own (Rainie, 2005). Blogging is very popular among teenage girls. Researchers from the Pew Internet and American Life Project found that among 12- to 17-year-old Web users, nearly one in three—35 percent of girls and 20 percent of boys—have created online journals or blogs (Lenhart, Madden, Macgill, & Smith, 2007).

Reading a personal blog is similar to opening someone's journal or diary, where the mundane facts of everyday life are paired with fascinating details, preferences, dreams, and soliloquies. Other blogs focus on particular topics and purposes, such as Paper Cuts from the *New York Times*, which discusses books and literary ideas.

K–12 teachers have many ways to tap into the blogging phenomenon:

- *Student learning.* Blogs create new forums for student learning. English teachers are using blogs to promote literacy learning through writing and the analysis of language (Huffaker, 2004). Social studies and science teachers are asking students to access news-related blogs as part of class and homework assignments. Blogs usually have definite points of view, and students can analyze the ideological perspectives of different sites on issues ranging from immigration reform to global warming.
- *Student/family communications.* Teachers can use a blog to “promote a ‘transparent’ classroom environment in which parents feel connected to and involved in their child's education, and teachers enhance their responsiveness to students while fostering a sense of community” (Berson & Berson, 2006, p. 125). And like other electronic communication options such as teacher websites and threaded discussion boards, blogs enlarge the classroom by creating opportunities for students to discuss ideas, share experiences, and present points of view.
- *Professional networking.* Blogs offer ways for teachers to communicate with other teachers, enabling them to stay current professionally and to receive support from colleagues concerning questions or issues in the classroom. Some teachers use microblogging tools as a way to establish connections with colleagues (Knittle, 2008). This form of blogging involves



## YOUR JUDGMENT MATTERS

As you think about the growth of blogging among middle and high school age students, consider the following questions:

- Why do you think blogging is such a popular communication activity among teenage girls?
- Why do you think blogging is considerably less popular among teenage boys?
- What do the online patterns of girls and boys suggest to you about gender roles among today's youth?
- What instructional implications do you see in the blogging behaviors of teenagers?



Go to the Assignments and Activities section of Chapter 8 in MyEducationKit. Open the Web activity “Teacher Blogs and Web Building” to further explore Tech Tool 8.1.





## TECH TOOL 8.1

### TEACHER WEBSITE AND BLOG-BUILDING RESOURCES



As you think about building your own teacher website or blog, it is important to recognize that you have choices and trade-offs ranging from costly, design-your-own site software programs to less expensive preassembled commercial sites to open source resources that offer free templates to teachers and schools.

Look at the following three ways to customize your website or blog. Each option lets you create a basic information communication site and then allows you to add further features and functions such as email, online discussion boards, weblinks, or video and audio selections.

Which approach will work best for you and why?



#### Approach 1 (Website and Blog-Building Software)

Purchase, download to your personal computer, and learn a communication software program such as Dreamweaver or FrontPage. Such programs enable teachers to build personal websites that range in scope from the functionally basic to the elaborately sophisticated. While such programs take time to learn, the products they produce are comprehensive in scope and attractive to view. Communication software like Dreamweaver are really just design programs; you will still need more tools to take what you have designed and publish it on the Web. A teacher might put a personally designed site on a school system's server or pay for space on a public site.



#### Approach 2 (Commercially Available Template)

Access a commercially available website or blog builder such as TaskStream, Go Daddy, or eBlogger. These programs allow users to create many features and functions, although they do not produce either the variety or quality of graphics of the Dreamweaver or FrontPage software programs. Commercially available programs have the added feature of being password protected while offering you a ready-made publication portal for your site on the Internet. You and your students can then go online without encountering the potential dangers of communicating on the Internet where anyone can read your material.

sending short text messages (around 140 characters) to friends or professional colleagues. Microblogging is useful because it does not take much time to establish and maintain contacts or send updates. Twitter and Plurk are two popular microblogging tools for you to consider.

There are three basic types of education-related blogs:

- "Official face" blogs serve as formal information centers for schools. Some of these organizational blogs include contributions by teachers and students.
- Single-purpose blogs address one subject area within a school, such as science or language arts.
- Active learning blogs involve students and teachers in conversations around parts of the curriculum (Harris, 2006).

As you begin to envision your own teacher blog, think of an instrument panel with multiple control buttons, typically featuring "Pages," "Archives," "Categories," "Blogroll," or "Meta." Figure 8.4 shows a blog page from a cultural diversity in education course for new teachers.



## Approach 3 (Open Source Software)

Use a free online course management system (CMS) for educators such as Moodle that provides email, online discussion boards, instant messaging, and discussion forums for school districts and individual classrooms. Moodle offers numerous different administrative functions including grade record keeping and posting, selective content releases, and various filtering options. Many teachers and schools choose these systems because they are free of charge and fairly easy to use. Ease of use means that such programs may not offer some of the more advanced features found in communication software programs or commercial sites, but many teachers may not have time or need to learn more complex systems. Open source programs generally are not password protected, which may be a drawback to use in schools.

You may prefer to choose another open source option such as WordPress that you can access directly online from your home computer. Blogger is also another free blog-building option for teachers. While not an open source program, its interface is easy to navigate and it produces a professional looking site. Edmodo, a free microblogging tool, invites teachers and students to share ideas and information. Teachers can post homework assignments and invite discussion both in and out of the classroom via this easy-to-use platform.



### CONTACT INFORMATION



TaskStream <https://www.taskstream.com> This is a subscription service.

Moodle <http://moodle.org> Available for free online. Users are required to register.

WordPress <http://wordpress.org/about> Available for free downloading.

Blogger [www.blogger.com/about](http://www.blogger.com/about) Available from Google.

Edmodo [www.edmodo.com/blog](http://www.edmodo.com/blog)

Go Daddy [www.godaddy.com](http://www.godaddy.com)



The basic components of a blog include the following features:

- **Heading.** There is a heading section where you can include your name and the name of your blog (“TEAMS Tutoring Blog” in Figure 8.4).
- **Pages.** Under the Pages icon is an “About” section where you will create and update information about yourself and your site. You can add more pages as needed, and readers can post questions or comments in response to this information. For instance, you might create pages that connect users to the essential administrative information they need about your class and its assignments. Other pages could provide more abstract and conceptual connections, with

FIGURE 8.4 TEAMS Tutoring Course Blog

**TEAMS Tutoring Blog**  
Multicultural Leadership & Tutoring in Schools

**DISCUSSION QUESTIONS**  
December 4th, 2007 by rwm  
How do the findings in Ferguson's research affect your view of the achievement gap?  
Ferguson believes that the key to meeting the achievement gap is not to support homogeneous tracking, but to modify teacher attitudes and practices with students. Do you agree or disagree and why?  
How do you intend to change your teaching practices to support academic achievement by all of your students?  
More information about the research can be found at the Minority Student Achievement Network web site at <http://www.msanetwork.org/>  
Posted in Graduation Rates, School Dropouts and Achievement Gaps | No Comments »



## Blogs for Teachers

As blogs are becoming established in society as sources of information, how can teachers best utilize this new form of interactive communication technology? This question has many different responses. On the one hand, blogs are increasingly popular forms of communication. It has been estimated that 8 percent of the population keep a blog while 40 percent read one regularly (Windham, 2007). In this context, many observers believe that teachers need to create and read blogs in order to understand firsthand how this technology affects people's lives and patterns of communication. On the other hand, other educators worry that blogs are inappropriately displacing paper-based communication—letters, memoranda, reviews, and reports—so teachers need to teach students to communicate in traditional ways, not encourage them to rely on electronic mediums as sole sources of information.

This debate aside, teachers' use of blogs is growing not only because blogs are a convenient way to maintain a class website, but because blogs also provide new avenues for educators to communicate with one another about issues that matter to them personally and professionally. One of the great advantages of blogs is how they make possible "highly personalized discussion forums that foster communities of interest" (EDUCAUSE Learning Initiative, 2005, August). For this reason, keeping and/or reading blogs is an important new form of professional development for educators, a way to stay current in one's academic fields while also maintaining a pulse on what is happening in the profession of teaching.

*Teacher Magazine* ([www.teachermagazine.org](http://www.teachermagazine.org)) is one important resource for teachers looking to find interesting and useful education-related blogs. In the Blogboard section of its website, *Teacher Magazine* hosts a variety of blogs by and for classroom educators about topics such as education reform and teaching for social change, teacher leadership, literacy

learning, gifted children, the work lives of new teachers, and middle school pedagogy. This website is maintained by Editorial Projects in Education, a Bethesda, Maryland-based non-profit organization that is also publisher of the widely read and highly respected newspaper *Education Week*.

*Teacher Magazine* has links to blogs from *Education Week*, including one written from widely divergent political perspectives by educators Deborah Meier and Diane Ravitch. *Education Week* has a blog detailing changes in the No Child Left Behind (NCLB) law as well as a site focusing on the learning challenges facing culturally and linguistically diverse students. *Teacher Magazine* includes other useful online resources on its website: Web Watch, providing weekly news from the Web, Trend Tracker, summarizing the latest educational research, and Classroom Technology, addressing issues about the use of technology in schools.

As a teacher, reading blogs written by other educators is part of how blogs may be useful to you professionally. Additionally, blog posts invite responses from readers. You can express your ideas in print at any of these educational blog sites. Using what is called "trackback," you can post a response to an issue on your own blog and link that comment back to the original blog where you first read about the issue (EDUCAUSE Learning Initiative, 2005, August). Referencing other bloggers in your blog widens the network of ideas being discussed, adding to the information sharing potential of the educational blogosphere.

*Teacher Magazine* is one of a number of organizations maintaining education-related blogs; *learning.now* from PBS Teachers is another, devoted to exploring the impact of the Internet on teaching and learning in schools. Look online to find other excellent blog sites where you can read and contribute to discussions about every important educational issue.

links to sites developed by experts and organizations in a field of study as well as connections to work done by students.

- *Archives*. The Archives icon organizes posts on the blog by month. Here you can place past information so readers have a library of material to review.
- *Categories*. The Categories icon serves as a place to organize posts into different topics or themes. In the example in Figure 8.4, categories in the TEAMS Tutoring Blog include Digital Divides and Disconnects; English Language Learning; Graduation Rates, School Dropouts, and Achievement Gaps; How Students Experience School; and so on.
- *Blogroll*. Blogroll is a place to link to other recommended sites and Web resources.
- *Meta*. This section serves as the credits section, explaining which software has been used to create the site. The TEAMS Tutoring Blog in Figure 8.4 used a template provided by WordPress, an open source blog-building software program.

## Design Decisions in Building a Teacher Blog

You have four key design decisions in building your teacher blog: content posting, reader response, audience, and authorship. Each of these decisions will help determine how effectively your teacher blog achieves your communication goals.

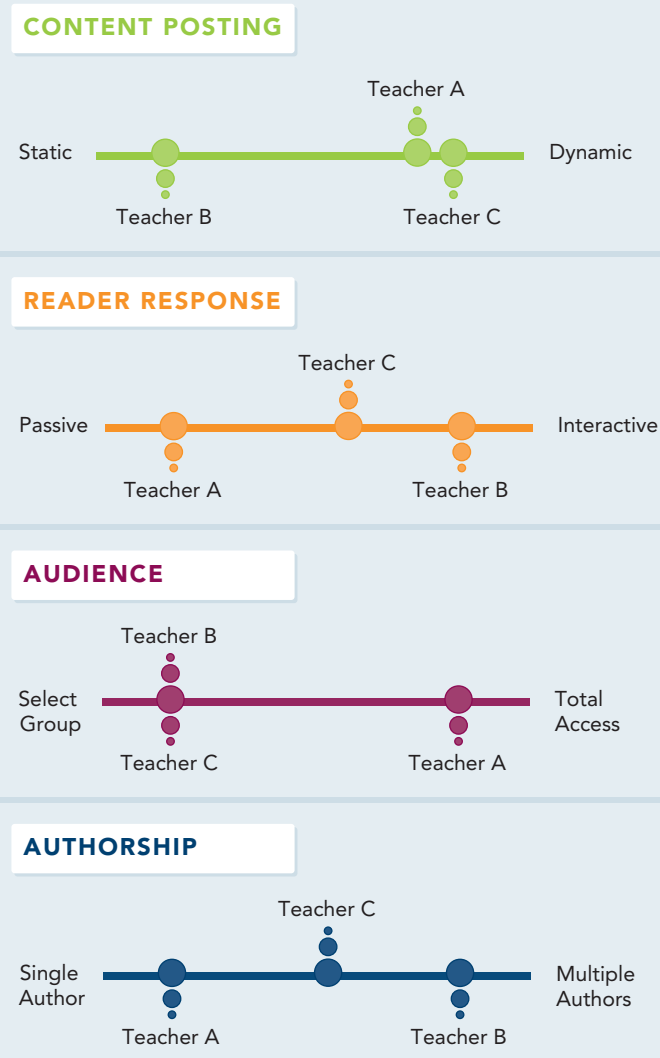
- *Content posting.* Content posting refers to how much and how often new content is posted on your site. Some teachers might post material at the beginning of the school year and leave it there unchanged, resulting in a basically static site. Others will change the content on a regular basis, making visiting the site a more dynamic experience for student readers. You decide how often you want to post new material on your site. Blogs make multiple postings easy to manage technologically because you can keep track of them by date and topic.
- *Reader response.* Reader response refers to the participation of student readers, from simply reading what is posted to actively responding to online material. You decide how you want to receive comments at your site. Within many blogs, comments from readers are posted for everyone to read, the idea being that students read each other's comments and make their own replies. The conversation is among the students while the teacher/blogger interjects occasionally to guide the discussion by adding comments or by reorganizing the postings. In other cases, the flow of information goes from the teacher to students and back from students to the teacher, thus limiting the amount of online conversation students have directly with each other. In either case, blogs with frequent postings encourage students to express their views whenever new material becomes available.
- *Audience.* Audience indicates who may access a site. You decide whether access is limited to a small group (for instance, the students in a course) or extended to anyone who is online (all Internet users).
- *Authorship.* Authorship explains who may create content on a site. Some sites have a single author, whereas other sites depend on multiple authors. You decide whether to be the sole author of material or to open the site to include the contributions of students. Blogs usually have multiple authors since they invite readers to add their views and comments on the topics being discussed. Multiple authorship can also take place in a wiki, a form of collaboration technology we discuss later in this chapter.

### Examples of Blog Design Decisions by Teachers

When creating a blog, you must decide among the various design possibilities for content posting, reader response, audience, and authorship. Teacher A in Figure 8.5 is the single author of a site that is open to all Internet users. He changes the site regularly, but readers do not offer electronic responses to his material. If you were to plot his site on the four bars in Figure 8.5, he is at the right end of the content posting and audience bars and at the left end of the reader response and authorship bars.

Teacher B in Figure 8.5 is not the sole author of her blog site. She includes her students as creators of the site content, but she changes that content only once or twice during the school year. Access is limited by a password protection system

FIGURE 8.5 Teacher Blog Design Decisions





to the members of her classes, but she requires every student to respond to what they read online as part of how the site is used instructionally.

Teacher C constantly posts updated material on her site, usually every week. Her students read and respond electronically to questions, informational postings, and digital resources, but the audience is limited to the members of her classes. She is the primary but not exclusive author of the site. Her students are given class credit for adding material to the site.

The choices and distinctions outlined in Figure 8.5 are not absolute, and the use of blogs is being reinvented every day by users. You will join that ongoing negotiation as you decide the role of websites and blogs in your electronic communication system as a teacher. One tool that will assist you greatly in creating your blog is a **digital image scanner**, the focus of Tech Tool 8.2.

## Analyzing Teacher-Made Websites and Blogs

Many school or school district websites resemble commercial sites in their presentation of organizational information that often includes a mission statement, curriculum expectations and standards by grade level, and names and backgrounds of faculty and staff as well as the schedule of academic and extracurricular events. By contrast, teacher websites and blogs are intended to catch the interest of students, inform families and colleagues about coursework and events, and, even more important, serve as an entryway to learning—anywhere, anytime. These websites are as original as the teachers who build them.

Creating a website or blog requires planning. Ideas for what inspires you and your students will emerge through analyzing what others have done. To assist you in this analysis, we present a set of criteria for evaluating teacher-made websites and blogs in Table 8.3.

**TABLE 8.3** Criteria for Analyzing Teacher-Made Websites and Blogs

Parts of the Site	Key Questions
Design/aesthetics	<ul style="list-style-type: none"> <li>• Is the site clear to read and navigate?</li> <li>• Does the structure of the site follow a logical pattern?</li> <li>• Does the site draw people in?</li> <li>• Are there pictures or other visuals?</li> <li>• Does the site look complete or does it appear “thrown together”?</li> </ul>
Information	<ul style="list-style-type: none"> <li>• Does information on the site relate to a class and its educational content?</li> <li>• Is the information easily available (directly written or downloadable)?</li> <li>• Is there a variety of information?</li> </ul>
Links	<ul style="list-style-type: none"> <li>• Are there links to related sources and sites?</li> <li>• Are there too many links without providing needed information for students?</li> </ul>
Contact information	<ul style="list-style-type: none"> <li>• Is there an easy way to contact the teacher?</li> </ul>
Discussion options	<ul style="list-style-type: none"> <li>• Are there ways to leave messages, ask questions, or discuss information and topics?</li> </ul>
Up to date	<ul style="list-style-type: none"> <li>• Is the information up to date in relation to class work and homework assignments?</li> <li>• Does the page contain a reference stating “last updated on . . .”?</li> </ul>
Class logistics	<ul style="list-style-type: none"> <li>• Are assignments posted?</li> <li>• Is a class syllabus or outline posted?</li> </ul>
Overall impressions	<ul style="list-style-type: none"> <li>• What do you like most about the site?</li> <li>• What do you like least about the site?</li> </ul>



## TECH TOOL 8.2

### POSTING AND PUBLISHING WITH DIGITAL IMAGE SCANNERS



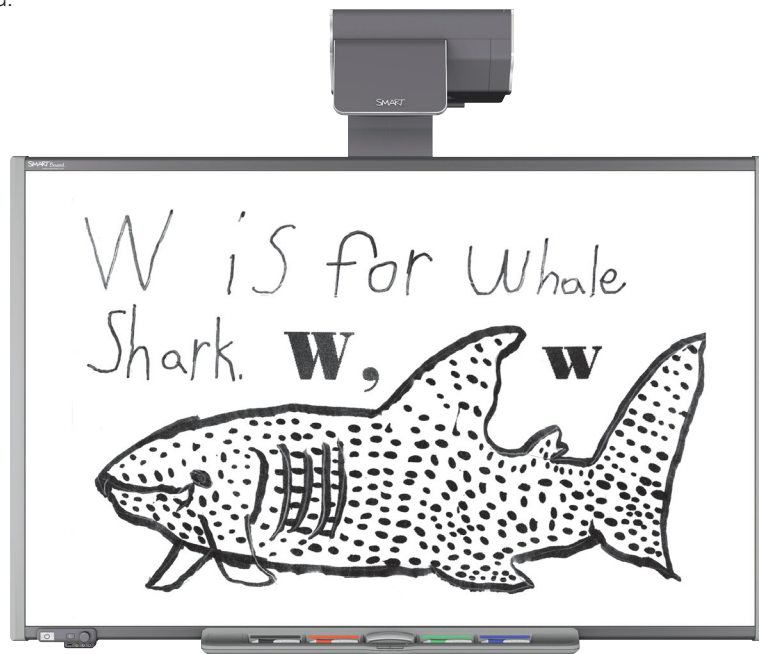
Teachers and students are writing and drawing continuously. The act of putting pencil to paper (or fingers to keyboard) is fundamental to how teaching and learning happens at every grade level. Think of what you have written or drawn in the past week: notes, exams, research papers, fiction stories, nonfiction essays, poems, scientific diagrams, mathematical calculations, historical timelines, and on and on.

All these forms of personal writing and drawing raise two important points about how you and your students use blogs, websites, wikis, and the other communication technologies discussed in this chapter:

1. Some of your writing and drawing is on computers and some is not, because there are times when it is easier to compose or calculate on paper than to use a computer word processor, drawing program, or calculator. Consequently, most of us create a variety of electronic and paper materials useful to our academic work.
2. At the same time, it is often useful to have an electronic version of writing and drawing that you have done by hand—or that someone else has published in books, magazines, and other sources. Computer access to paper materials allows teachers and students to easily store, edit, and publish what has been created.

Digital image scanners are tools that provide teachers and students with computer storage of handmade or already published writing and drawing. Think of a digital image scanner as an electronic transfer agent, photographing paper materials into a digital format to upload to a computer. The screenshot shows a student's drawing of a whale shark that has been scanned and posted to a classroom website.

Scanners are a vehicle for online publishing, making it possible to upload printed or drawn information (your own writing or drawing or that of your students) to a teacher or classroom website or blog. Scanners also allow teachers to add visual images to handouts, class notes, and learning resources that they are creating for their students.



Board courtesy of SMART Technologies; copyright © 2001–2009 SMART Technologies ULC; all rights reserved.

#### CONTACT INFORMATION



Information about digital image scanners is available online from manufacturers such as Epson, Hewlett Packard, and Microtek.



Using the criteria presented in Table 8.3 (p. 224) to examine the quality and effectiveness of sites created by colleagues in your school district or other educators on the Web, consider the following questions:

- How well do the sites you visited meet the evaluation criteria?
- What other criteria might be added to the list?
- How has the assessment of other sites influenced the design of your site?

In the design and development of their websites and blogs, some teachers concentrate on creating interaction rather than displaying information. Their goal is to attract students and families to use the site not solely as a source of information, but as a place where they can contribute material and extend learning outside of school.

Locally authored teacher sites generally lack the flash and style of expensive, commercially produced sites because in Web design, money makes a difference in terms of impressive graphics and ease of navigation. However, local teacher sites have a sense of authenticity and engagement that more expensive sites never match, especially when students have been involved in the site's creation and maintenance. Students feel a great sense of ownership and investment in a website or blog that they helped to author and on which their work is displayed. They want people to view the site over and over again. Students, teachers, and families will return repeatedly to even an ordinary-looking site if students helped to create it and it contains information they want to see.

Examples of locally created websites and blogs are found throughout the Internet. *Social Education*, the journal of the National Council for the Social Studies, has identified engaging Web pages created by history and social studies teachers at all grade levels (Risinger, 2004, 2006, November/December). These sites feature contributions by teachers, students, and community members. They showcase examples of student projects and publish excellent work done in class. They also contain teacher courses and assignments, summer reading and film viewing lists, important Web links such as Women's History Month and Hispanic Heritage Month sites, and current information related to events like Student Government Day.

### Strategies for Incorporating Reader Response

Effective online interaction with students depends on a teacher's ability to act as a moderator—that is, carefully guiding a complex process where the emotions, beliefs, understandings, and conceptualizations of students are all in the mix. Moderating an online discussion is like trying to drive a car from the back seat. You can give guidance to the driver, but you do not have direct control of the wheel. The following suggestions can help you become a successful discussion leader in online learning situations.

**Focus on Issues That Have Meaning and Relevance to Your Students.** When using online discussions, student enthusiasm and interest is high at the beginning. There is excitement about the possibilities of using new forms of computer-based communication. When you find your students beginning to lose interest and enthusiasm, focus on issues and topics that have meaning and relevance to them. Ask in class what interests them about a topic and use that information to craft questions for them to address in the online setting.

**Stress the Importance of Active, Thoughtful Participation.** Some students are not engaged in online discussions, composing only short one or two sentence replies that are too general to advance the flow of ideas or to help the writer think about the topics under consideration. Other writers go to opposite extremes, becoming overengaged and posting judgmental and personally disparaging remarks about other students. Too little or too much participation by students requires teachers to play a crucial discussion management role. Before any online discussion begins, make it clear that you will be an active director of the communication process. This means that every student is expected to be a productive contributor to the discussion, and will be graded accordingly.

Requiring students to participate in online discussions can result in thoughtful, articulate responses, in part because students have the time to reflect on and revise their text. Online writing can promote the discovery of knowledge and new ideas through communicating with others in a meaningful dialogue.

**Emphasize Rapid versus Delayed Feedback.** Students need feedback—from teachers and peers—to make any learning situation feel successful, including online discussions. In theory, electronic discussions promote thoughtful conversation as students compose their own postings and read what others have written. Powerful connections are made when students are able to exchange ideas and information with other people who expresses genuine interest in reading what has been written. There is an intellectual connection—your personal ideas are being expressed and discussed—as well as the additional connection of reading what someone says in response to your statements. Finally, there is the possibility of a change in thinking as you reconsider your ideas based on the feedback you receive from others.

When feedback happens rapidly and thoughtfully, writers and readers both benefit. Writers recognize that they have an interested audience for their ideas; they are not just writing for the teacher. They also realize they have an opportunity to get valuable feedback about their ideas. Readers learn from the postings of writers and become aware of how important is it to take everyone’s ideas seriously. When it is a reader’s turn to write, she or he expects others will respond thoughtfully.

**Establish Clear Rules for Online Conduct.** In an unmoderated online discussion, it is easy for some students to try to dominate the conversation. As the discussion leader, a teacher must find ways to engage everyone and to bring forth ideas from students who are participating the least. Clear rules for online conduct, agreed on beforehand, provide a structure for online comments and responses. Rules protect individual differences that inevitably become part of every discussion and promote civility in the expression of opposing opinions. Posting the policy for responding in online discussions makes each student responsible for playing by the rules, just as in sports. One short statement might be sufficient to keep the dialogue focused on the topic: “As in face-to-face interactions in class, discussions online will refrain from judging others’ views as wrong or ridiculous. Disagreeing and stating why you do so is acceptable as long as no one is disparaged through name calling or using negative labels or put downs.”

**Respond Directly, but Tactfully.** A blunt “That’s wrong!” will make it less likely that a student will respond eagerly the next time a question is asked. As a teacher, you need to affirm student comments even when those comments are not what you were expecting when you asked a question. However, affirming someone’s statements does not mean always agreeing with those statements. When a student’s information is incorrect or a comment is ill considered, you need to respond in ways that correct the information or rebuff a negative or discriminatory tone. For example, “Your comment made me recall a source you may find interesting. It offers more information than you have seen thus far.” Or: “One’s viewpoint is constructed by one’s influences and life experiences. Take a look at [source or writer] and consider how your ideas conform to or disagree with this viewpoint.” Offering bland affirmations—“Good job” or “Nice comment”—may cause students to dismiss your responses as insincere or disinterested. The statements “I find that interesting,” “I had not thought of that,” or “Thank you for mentioning it” all confirm that your attention is on what the student is saying.

**Develop an Online Reading Response Form for Your Students.** Teachers at the middle and high school level often ask students to post their responses to outside-of-class reading assignments on an online discussion board. Asking students to provide unfocused comments can produce statements lacking clarity, detail, or analysis. At the same time, making an online reading reaction entry too formal (in the style of a research paper with footnotes and citations) detracts from the ease and spontaneity that many students feel when posting on the Web. Figure 8.6

**FIGURE 8.6** Online Reading Response Form

Name: \_\_\_\_\_

Class: \_\_\_\_\_ Date: \_\_\_\_\_

Title of the Reading: \_\_\_\_\_

1. Describe the professional and personal background of the author.
2. Consider the big themes we have been discussing in class. Select one of those themes, identify it, and write a paragraph summarizing what the reading tells you about the theme. Use at least two quotations of at least a sentence in length from the reading to explain your thoughts.
3. List several adjectives that best describe your opinion of the reading—and its usefulness for this course.
4. Assign the reading a letter grade, from A to F, with A indicating a highly favorable rating and F a failure. Comment about the criteria you used to establish the grade.



provides a template for an online reading response form. As you read it, consider how you might use this form or a variation with your students.



## Wikis as a Collaborative Learning Strategy

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Go to the Tutorials section of Chapter 8 in MyEducationKit and access the practical tutorial and skill-building activity entitled “Wikis and Blogs.” Use the tutorial to learn how to create your own online interactive site.

A **wiki** is a website or blogspace that is collaboratively edited and maintained by a group of people (EDUCAUSE Learning Initiative, 2005, July). Wikis allow individuals or groups to edit the same Web page—“users can visit, read, re-organise and update the structure and content (text and pictures) of a Wiki as they see fit” (Augar, Raitman, & Zhou, 2004, p. 95). First appearing in the mid-1990s, wikis have grown in popularity because of the way they involve users in the process of sharing information collaboratively (Tapscott & Williams, 2006). In addition to the online encyclopedia Wikipedia (discussed in Chapter 5), there are now wikis in many wide-ranging areas including:

- WikiTravel, a worldwide travel guide
- Wictionary, a collaboratively developed dictionary
- Cookbook Wiki, a compendium of information about global cuisines
- WikiEd, a wiki for educators (developed by the Curriculum, Technology and Education Reform program at the University of Illinois at Urbana-Champaign)
- WikiHow, an effort to create the world’s largest how-to manual
- WikiIndex, a wiki featuring information about wikis
- Wikibooks, a site that hosts more than 25,000 jointly created open-content books
- Curriki, a site featuring online, open source curriculum materials for K–12 teachers

In schools, wikis allow students and teachers to do the following:

- Use technology in meaningful ways in their classroom
- Collaborate with peers and colleagues
- Synthesize and explain the content they are learning through written expression and different forms of multimedia expression
- Publish their writing and other creative or scientific work
- Receive feedback about their learning both inside and outside the classroom

*Letting students create and post their academic projects on school and classroom websites and wikis is a powerful way to promote active engagement and personal investment in learning.*



It is true that these goals can also be achieved through the use of teacher- and student-authored websites and blogs, but wikis, because they are designed for collective writing and editing, promote high levels of collaboration and interaction among students. Certain kinds of educational projects, as we shall see in the rest of this section, lend themselves to the collaborative possibilities created by wikis.

### Collaborative Learning Environments

Wikis make possible **collaborative learning environments** for teachers and students. Collaborative learning happens when students together work on different parts of a problem and discover key concepts and information for themselves. In such environments, the role of the teacher is focused on supporting peer-to-peer interaction and social learning. Collaborative learn-

ing environments encourage students to work in teams, to question processes, to make mistakes, and to monitor each other's reasoning.

Wikis have the technological capacities to model and support student-to-student collaboration. First, students need to participate with others because one individual cannot always have all the information required to build a wiki. The idea is for the group, not one or two individuals, to create a wiki. Second, wiki technology keeps track of the writing and editing process in ways that allow everyone to see what has been contributed and what has been changed.

Figure 8.7 shows a sample page from a wiki being created by high school history teachers and their students about a key topic in world history, the relationship between the religions of Islam, Judaism, and Christianity. The text highlighted in green shows a new contribution to the page while the text highlighted in red shows material that has been deleted from the text. Being able to view changes to a text while they happen helps everyone learn the material. The students can see how text can become more focused and clear as it is edited, while the teacher can keep track of which different students are adding to the text.

Collaborative learning experiences in school mirror the way information is created in society where no one individual can know enough to completely solve complex social and technological problems. Working together on a wiki becomes a way for students to understand the processes by which knowledge is generated, evaluated, and revised by groups of individuals in business, government, and many other fields (Leuf & Cunningham, 2001).

## Building a Standards Wiki

Just about every teacher, as we discussed in Chapter 6, faces the challenge of teaching a standards-based curriculum, mainly because almost every school uses some set of local, state, or national curriculum frameworks to guide teaching and learning. In Chapter 6, we suggested teachers maintain a standards connector web as a way to keep track of exemplary Internet resources they can use to meet different learning standards from their curriculum framework. Teachers can also use wikis to help them address curriculum frameworks, using what we call a **standards wiki**, a collection of academic information and class notes related to specific curriculum frameworks. Teachers and students working together can create it.

Figure 8.8 shows a page from a U.S. history wikispace created by one of the authors and a group of high school history teachers and students. In this wiki, learning standards from the Massachusetts History and Social Studies Curriculum Framework are displayed on the page. Teachers and students are invited to click on a standard, read what other teachers and students have written, and add their own contributions and resources. The goal is to build a collaboratively developed and maintained collection of learning materials to use in teaching the state's mandated history standards for high school students.

**FIGURE 8.7** Edited Page from a World History Wikispace

The Quran was assembled during the reign of the caliph Uthman (Muhammad did not actually write down the messages that God revealed to him). It contains both surahs (which are like chapters) and ayas (which are like verses). Normally, it is arranged in length, from the longest to the shortest, except for the opening surah. It can also be arranged chronologically, with surahs from Mecca and Medina. The Meccan surahs tend to be more poetic, filled with imagery, and generally shorter. The surahs from Medina are longer and deal more with questions of law.

**C. Islam's historical relationship to Judaism and Christianity**  
Like the Torah, the Jewish holy book, and the Christian Bible, the Quran contains many kinds of writing, including stories, promises, warnings and instructions. There is a reason for the similarity of the Quran to Jewish and Christian holy books. Muslims, like Jews and Christians, believe in one God. They regard Adam, Noah, Abraham, and Moses as important in religious history. **Muslims regard Christians and Jews as "people of the book"**

**D. The relationship between government and religion in Muslim societies**  
Islam holds that political life can only function properly within the context of Islamic law. To such believers, since **God's** law is universally true and beneficial to all people, any state law or action opposed to God's law would be harmful to the citizens, and displeasing to God. Many Muslims consider the Western concept of separation of Church and State to be rebellion against God's law. There is a contemporary debate in **Islam** whether obedience to Islamic law is ultimately compatible with the Western secular pattern, which separates religion from civic life

WHI21.JPG

**Islam's historical relationship to Judaism and Christianity: A. Allah is the same God worshiped in Christianity & Judaism B. All 3 religions believe in a day of judgment, heaven and hell. C. Christians & Jews are recognized as "people of the book," because each religion had**

**FIGURE 8.8** Sample Standards Wiki Page

**U.S. History II: Reconstruction to the Present, 1877-2001**

Students will analyze the causes and consequences of the Industrial Revolution and America's growing role in diplomatic relations. Students will study the goals and accomplishments of the Progressive movement and the New Deal. Students will also learn about the various factors that led to America's entry into World War II as well as the consequences of World War II on American life. Finally, students will study the causes and course of the Cold War, important economic and political changes during the Cold War, including the Civil Rights movement, and recent events and trends that have shaped modern-day America.

**Industrial America and Its Emerging Role in International Affairs, 1870-1920**

**USII.1 Explain the various causes of the Industrial Revolution.**  
A. the economic impetus provided by the Civil War  
B. important technological and scientific advances  
C. the role of business leaders, entrepreneurs, and inventors such as Alexander Graham Bell, Andrew Carnegie, Thomas Edison, J.P. Morgan, John D. Rockefeller, and Cornelius Vanderbilt

**USII.2 What are the important consequences of the Industrial Revolution.**  
A. the growth of big business  
B. environmental impact  
C. the expansion of cities

**USII.3 Describe the causes of the immigration of Southern and Eastern Europeans, Chinese, Koreans, and Japanese to America in the late 19th and early 20th centuries, and describe the major roles of these immigrants in the industrialization of America.**  
• *Seminal Primary Documents to Read:* Emma Lazarus, "The New Colossus" (1883)  
• *Seminal Primary Documents to Consider:* Yonahill Kano, "East Goes West" (1937)

Other examples of possible wiki projects include the following:

- Science Fair and National History Day projects
- Student-developed texts and open-content source books
- Literature circles and book discussion groups
- Teacher-to-teacher projects and information exchanges

### Creating a Wikitext

Wikis can be used in K–12 classrooms whenever students or teachers are involved in collaborative and group projects. In so doing, they fundamentally shift the nature of the learning experience. Instead of students just reading the textbook, they can become involved in creating the textbook for their class by constructing an online educational **wikitext**. You can think of an educational wikitext as a collection of electronic resources that have been created together by teachers and students (Fontaine, 2008).

The idea of a wikitext is a promising new instructional model. Students are put in decision-making roles, becoming “not only readers and writers, but also editors and collaborators” (Richardson, 2006, p. 5). There is a heightened sense of engagement as students participate in collaboratively building wiki pages. Moreover, students come to see curriculum content as meaningful topics rather than simply information that must be learned for a test (Leuf & Cunningham, 2001, p. 16).

One model for using a wikitext comes from a foundations course for future teachers at Old Dominion University (Allen et al., 2008; Xiao, Baker, O’Shea, & Allen, 2007). Professor Dwight Allen and his graduate teaching assistants selected 77 topics typically found in foundations of education textbooks for inclusion in a student-written wikitext (provisions were made for student-generated topics to be included as well). Each student was asked to write a thousand-word essay on one topic, citing at least five references, including both scholarly and popular sources. A “sidebar” was required for each entry, reflecting how traditional textbooks approach the topic. Students also created five multiple-choice questions and one essay question to accompany their wikitext entry. Members of the class then rated each of the entries and the most highly rated ones were posted on the class wikispace.

Elementary, middle, or high school teachers can do their own versions of a wikitext development process, as one secondary school teacher noted: “I take six new terms . . . and create a page in the wiki for each term. I give the students a template and say, ‘This is a structure of what I want you to find. Find examples, write reviews.’ Then I pair them up, and they complete the wiki forms in groups” (Standen, 2006).

A wikitext approach places students in new roles as content creators, not simply content receivers. The new teacher candidates in Dwight Allen’s college course reported that many felt their “wikitext was more useful for them because of its structure—specifically, the wikitext was broken into short, 1,000 word articles rather than the lengthy chapters characteristic of many traditional texts” (Xiao et al., 2007, p. 23).

K–12 students can use a wikitext to review important academic content without having to reread large amounts of information. Plus there is the added incentive for students of wanting to read what they and their classmates have written online. Professor Allen’s students reported they spent more time interacting with the wikitext than with traditional textbooks in other classes. The collaborative writing and editing inherent in wikis seems to engage students in reading academic material in personal and critical ways.

Creating your own wiki is fast and easy. A number of companies provide free wikis on the Web. These services include a basic site (with some advertisements), but include the option to upgrade features and eliminate ads for a small yearly fee.





- PBworks (PB for peanut butter) provides descriptive videos on its website that make it easy to learn how to create a wiki. Available online at <http://pbworks.com/academic.wiki>
- Wikispaces has an ongoing program to provide 250,000 free wikis to K–12 teachers throughout the United States. Available online at [www.wikispaces.com/site/for/teachers](http://www.wikispaces.com/site/for/teachers)
- TiddlyWiki is a free open source tool that teachers and students can use for short writing activities such as book reports, research journals, or class notes. Available online at [www.tiddlywiki.com](http://www.tiddlywiki.com)

## Strategies for Using Wikis with Your Students

Effective wiki projects depend on a teacher's ability to establish and maintain collaboration among students. The following suggestions can help you do wikis with your students:

- *Group processes.* Teachers can organize wiki projects in two basic formats: (1) a group of students (usually three to five in number) can contribute to a single project—for example, a science research project on a common topic, or (2) individual students can do their own individual projects for others to read and respond to—for example, a review of different time periods in a history class. Each format has advantages and drawbacks. Working together, students can support and extend each other's learning, but some group members may not contribute equally to the common goal. When everyone is responsible for a project, it is clear who has done the required work, but the element of collaboration is minimized. You can choose the format that works best in your classroom or use both at different times.
- *Nature of the wikitext.* Teachers must decide whether to have students create a new wikitext every time they teach a course or ask students from one class to work with the wiki material that other students have previously created. Either approach works well, depending on the situation. In many cases, history projects, research reports, and science experiments lend themselves to new wikis each year, as students discover new information and take material in new directions. By contrast, when teachers ask students to work with a set body of material such as a required curriculum framework, then it may make more sense to create a wiki that students will add to and improve year after year as the course is taught.
- *Inappropriate or plagiarized material.* Teachers may find that students post inappropriate or plagiarized material on a class wiki, either purposely or unknowingly. In addition to having clear rules about what to post, teachers do need to be careful editors of online content. It is possible to set the preferences of a wiki so that only the teacher has final control over what material is made public and what is not. It is also possible to lock certain pages so that only the teacher/editor can change them. Such features of wiki technology allow teachers to carefully monitor what is posted online while also teaching students about the importance of clear, accurate, and fair materials.
- *Grades for students.* Writing for a wiki represents a new and different form of academic work for many teachers and students. As such, it may be different from grading with the typical criteria for class assignments. There is no right or wrong answer as with a multiple-choice test. Students need a clear definition of what is expected of them beforehand so they recognize what they must do to receive a passing grade. The accompanying wiki project grade form outlines the specific areas that one teacher expected her students to cover in developing postings for an informational wiki on community health issues covered in a high school science class. Groups of students were expected to both create a wiki page entry and present their findings to the class in an oral presentation. You can certainly modify this form to fit your classroom and subject area.



## WIKI PROJECT EVALUATION FORM

Components of Your Wiki Assignment	Criteria for Evaluation
Group Participants	Basic Contributions of Each Member
Introduction to Wiki Page	General Information Issues Clearly Identified
Resources Provided	Accurate Empirical Articles and Data
Clarity of Information	On Wiki In Class
Citations	APA Format
Summary of Findings	Summary Given
Written Presentation	Quality of Presentation
Oral Presentation	Quality of Presentation



## TECHNOLOGY TRANSFORMATION LESSON PLAN

### BLOGGING THE NEWS FROM ROOM 145

#### Reading and Writing Using Web Communication Tools

<b>Grade(s)</b>	Elementary and middle school
<b>Subject(s)</b>	English/language arts
<b>Key Goal/Enduring Understanding</b>	News is what's happening now. People share news by broadcasting it on television or radio or publishing it in print newspapers, on the Internet, or through other media. Without these sources, news would travel slowly through face-to-face communications. For more than 200 years, newspapers served as formats for delivering the news to mass audiences. Today, Internet technologies such as blogs provide personal ways to share news with interested readers and viewers.
<b>Essential Question</b>	How can a classroom blog publish news about student learning and school activities to audiences of families, students, and teachers?
<b>Learning Standards</b>	<p><b>National Council of Teachers of English (NCTE)</b>—<i>Standards for the English Language Arts</i></p> <p><b>Standard 4:</b> Students adjust their use of spoken, written, and visual language to communicate effectively with a variety of audiences and for different purposes.</p> <p><b>International Society for Technology in Education (ISTE)</b>—<i>NETS-S, 2007</i></p> <p><b>Standard 1: Creativity and Innovation.</b> Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.</p> <p><b>Standard 2: Communication and Collaboration.</b> Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.</p> <p><b>Standard 6: Technology Operations and Concepts.</b> Students demonstrate a sound understanding of technology concepts, systems and operations.</p>



## Learning Objectives

Students will know and be able to

- Write short news reports about academic learning activities to regularly post on a classroom blog.
- Compose captions, photos, graphs, and drawings to post on a classroom blog.
- Download photos from digital cameras, insert video clips, and scan text and drawings into a classroom blog.
- Write in different genres for a classroom blog, including factual news reports, entertainment reviews, announcements, comics, opinion pieces, and advertisements.

## Technology Uses

The lesson uses computers, word processing software, scanners, and a class blog as key technology tools.

Minimal Technology	Infusion of Technology
Students read and view media such as newspapers and television to find examples of news reporting.	Students read and view media such as websites and blogs to find examples of news reporting.
Students write news reports using paper-and-pencil technologies.	Students write news reports using computers with word processing software.
Students share classroom news through a paper-based newspaper. Families read the classroom newspaper but typically do not respond to what they read.	Students share classroom news through a Web-based blog. Families read the classroom newspaper and use the interactive capabilities of a blog to respond to what they read.

## Evaluation

This lesson uses multiple forms of evaluation, including rubrics based on English/language arts standards for different writing genres and technology standards for Web-based publication.

## LESSON PLAN DESCRIPTION

### Introduction

“Blogging the News from Room 145” uses computers, word processing software, scanners, and a class blog for students to share their academic and creative news with an audience of family members, other students, and teachers. The lesson demonstrates the differences between the old media of newspapers and television and the new media of websites and blogs.

### Lesson Focus

This lesson plan addresses two realities of classroom teaching. First, students are newsmakers. Every day, they are learning and doing something new—writing, drawing, calculating, observing, and concluding thoughts about topics they are studying in math, science, history, and language arts. Yet in many schools the news about day-to-day student learning is rarely shared with anyone other than the classroom teacher. Family members, other students and teachers, and even students themselves fail to note the compelling learning experiences that are happening all the time in school. They take for granted what is truly extraordinary, the changes occurring in themselves.

Second, many teachers write a weekly classroom newsletter summarizing the learning activities of students. These newsletters are typically paper documents shared with families, school administrators, other teachers, and the students themselves. Less commonly, teacher-written classroom



newsletters are posted on a classroom or teacher website. Rarely are students directly involved in the process of writing and designing these classroom newsletters for various audiences.

In this lesson plan, as a way to learn about news writing, Internet communication technologies, and the role of an audience in the writing process, students are directly involved in creating, designing, posting, and publishing the academic learning news from their classroom. Unlike a school newspaper that is written and copied on paper and distributed by hand, a classroom news blog provides an easily updatable, regularly evolving electronic record of what is happening academically in a classroom.

Additionally, a classroom news blog invites readers—family members as well as other teachers and students—to write back to student bloggers, just as newspapers invite readers to “talk back” to the paper by emailing reporters, columnists, and editors. A class news blog gives readers the opportunity to comment on and participate in students’ learning experiences, while giving students the experience of an on-the-Web, interactive exchange with readers.

### Lesson Design—Minimal Technology

A minimal technology version of this lesson plan features a classroom newspaper that is assembled and copied by teachers for distribution to students and their families. Alternatively, students assist teachers in creating the newspaper by copying and collating the final publication. In either case, such newspapers are paper documents composed of writing and drawing by students along with a letter to families written by the teacher.

Another version of a minimal technology lesson plan is organized around a daily classroom meeting time where teacher and students share the news with each other. Students write and draw their news reports using paper and pencil, and then read and show their work at the class meeting. Teachers may archive these reports so students can read them later in the school year. However, since it is not easy to organize and save student papers day after day, in many cases, the student news reports are unavailable after a week or so.

A paper classroom newspaper can be an especially labor-intensive activity for teachers, who must do much of the work of newspaper production, including layout, copying, and distribution. Even a daily classroom news meeting takes considerable planning by teachers in order to fit such a meeting into the regular schedule of curriculum time and related school activities.

## LESSON ACTIVITIES USING TECHNOLOGY

1. ***Decide on Categories for Your News Blog.*** To begin this lesson plan using technology, it is important to decide with your students what categories you will have on your classroom blog. Categories, like the table of contents in a book, organize material into easily identifiable areas. Readers can consult the categories as a way to navigate around the site and locate material they want to read or view.
2. ***Use a Newspaper as a Model.*** Because a classroom blog is a collaborative activity, ask your students what kind of categories they want to create for their website. Younger students may not know how to make that decision. One idea to guide them is to use a local or national newspaper as a model for how those publications create different sections for readers. Most newspapers have feature stories, an entertainment section, sports pages, an editorial page, a place for letters to the editor and opinion columns, comics, product advertisements, help wanted listings, and other categories. A classroom blog might feature a version of such categories and then invite students to write material for each section.
3. ***Use Academic Curriculum Topics in Your Blog.*** Formatting by major academic curriculum areas and topics is a second way for students and teachers to choose categories for a classroom



blog. An elementary school class might have sections on its blog for mathematics, science, history, and language arts as well as special features that the students decide to include. A middle or high school class might organize its blog by major subtopics in one curriculum area; for example, a class on U.S. government could have separate blog areas for its major areas of study—the president, Congress, the Supreme Court, political parties, and electoral politics.

4. **Give Roles to Students.** Giving students individually meaningful roles in writing and producing is part of the successful publishing of your news blog. Rotate the students through each of the roles on a reporting team so that everyone has an opportunity to experience each function. As the blog develops over time with the addition of new topics, students can choose different roles.
5. **Organize Curriculum Teams.** To begin, you might establish separate teams for each curriculum area—math reporters, science reporters, history reporters, and language arts reporters. Team members then have separate roles within the team, such as writers, editors, designers, and scanners. Ideally, all the students will serve on more than one curriculum area team during the year. Collectively, the team decides what material they want to post on their blog. The writers are then responsible for creating the initial draft of each posting, while the editors and designers ensure that the post is clearly and artistically done. The scanners have the responsibility of using computers to post the final copy on the blog.
6. **Encourage Talking Back to Your News Blog.** Once material has been posted on your classroom news blog, you have the potential for more exciting learning to happen when readers (particularly members of student families) respond in writing to what they have read. When readers “talk back” to your blog, students get important feedback about their work and they can respond to the responses as well. Such exchanges between student writers and outside-of-the-school readers expand the way blogs can be used instructionally by teachers. Getting readers to respond takes some advance planning by teachers. You want to avoid a situation where readers state, “Nice job!” or “Good work!” Such comments, while seemingly pleasant to read, offer no substantive feedback to students and establish no basis for further communication between student writers and blog readers.
7. **Review Key Steps in Talking Back.** There are two key steps that you can take to promote successful talking back to your classroom news blog.
  - Encourage families, other teachers, and students in other classrooms to write back with substantive observations and meaningful comments about what the students have posted.
  - Encourage student writers to create posts that invite comments from readers. A science news report might include questions to readers about the topic or a math report might feature instructions to readers about how to solve particular kinds of problems. The idea is to give readers a reason to respond to student writers.
8. **Teach about Old and New Media.** News, by definition, is information that is shared with people who want to know it. People read newspapers, watch television, listen to radio, and scan the Internet to learn about what is happening in their community, nation, and world. News reporters are writers who record the news in words and pictures and share it through multiple forms of media. Sociologists reference the terms *old media* and *new media*. Old media refers to traditional sources of information such as newspapers, magazines, and television. New media refers to Internet-based sources of information such as websites, blogs, wikis, streaming video, and more. A classroom blog teaches students about the differences between old and new media. Clearly, news that is presented on the Internet via websites, blogs, and other new technologies is a markedly different experience for readers than reading newspapers, watching television, or listening to the radio.



Go to the Technology Transformation Lesson Plan section of Chapter 8 in MyEducationKit and access the activity “Exploring Community History, Now and Then” to practice transforming a lesson plan using technology.

## ANALYSIS AND EXTENSIONS

1. Name two features you find useful about this lesson.
2. Name two areas for extension or improvement of this lesson.
3. How successfully has information technology been integrated into the lesson?
4. How might students be even more involved in designing, using, and evaluating technology in the lesson?



## CHAPTER SUMMARY

To check your comprehension on the content covered in the chapter, go to the MyEducationKit for your book and complete the Study Plan for Chapter 8. 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 chapter content.

**FOCUS QUESTION 1:** How can teachers use communications technologies as teaching and learning tools?

- Communication technologies provide ways for teachers to connect with their students, promote meaningful learning, and extend academics beyond the confines of regular school time.
- Every teacher has choices to make when creating the type of computer-mediated communication system they intend to use professionally.
- Synchronous communications happen in real time (as in an instant messaging conversation) whereas asynchronous communications include an interruption or delay between responses (as in an email correspondence or an electronic response to a blog posting).
- Teachers have five reasons to use electronic communications: (1) teaching strategies, (2) information sharing, (3) community building, (4) publishing student work, and (5) energizing student writing.

**FOCUS QUESTION 2:** How can teachers use email or instant messaging to foster information exchanges with and among students?

- Children and adolescents are the largest users of email and instant messaging (IM) technologies.
- Many teachers use email as a way to communicate with students, families, and professional colleagues.
- Fewer teachers use instant messaging because the kind of informal language found in IM can be misunderstood or misused.

**FOCUS QUESTION 3:** How can teachers use a website or blog to improve teaching and learning?

- Websites and blogs are emerging as one of the most important ways for teachers to communicate with students, families, and colleagues.
- There are three basic types of education-related blogs: (1) “official face” blogs, (2) single-purpose blogs, and (3) active learning blogs.
- Teachers have three options for creating their own website or blog: (1) a do-it-yourself option, (2) a commercially available option, or (3) an open source option.

#### FOCUS QUESTION 4: How can teachers use wikis to promote collaborative learning?

- Wikis are Web pages that are created and maintained by multiple computer users.
- In schools, wikis enable collaborative learning environments where teachers and students work together to investigate topics and share information.
- A wikitext is a book or booklet that teachers and students create together as part of a class study of a topic.



#### KEY TERMS

Asynchronous communications  
Blogs (weblogs)  
Collaborative learning environments  
Computer-mediated communication  
Communication technologies  
Digital image scanner  
Educational networking  
Email (electronic mail)  
Instant messaging (IM)

Microblogging  
Online discussions  
Social networking  
Standards wiki  
Synchronous communications  
Teacher or classroom websites  
Textspeak  
Wikis  
Wikitext



#### ACTIVITIES FOR YOUR TEACHER PORTFOLIO

##### 1. ORGANIZING CLASSES FOR ACTIVE LEARNING

John Goodlad's classic study of American education, *A Place Called School*, published in the mid-1980s, concluded that at every grade level, from the youngest elementary grade to the senior year of high school, students spend large amounts of their classroom time passively listening to teacher lectures and explanations (1984, p. 107). Teacher lecturing accounts for 18 percent of the time in early elementary grades, 20 percent in upper elementary grades, 22 percent in junior high/middle school, and 25 percent of the time in high school. Discussions between teachers and students, by contrast, amount to only 5 percent of the time at all levels while simulations and role-plays occur less than 1 percent of the time.

- How do you think teachers can design classes that rely less on lecturing and more on active learning by students?
- What teaching methods do you think will foster greater student engagement and why?
- What do you view as the strengths and drawbacks of discussions, role-plays, and small-group work using multimedia technology?

##### 2. ONLINE READING REACTION ASSIGNMENTS FOR STUDENTS

Answer the questions about the following online reading reaction assignment. Each was given by teachers in an upper elementary school or middle/high school setting in science or history where reading outside sources is a key part of the learning experience for students.

**Assignment 1.** Read an article from the class reading list and respond to its main ideas or key themes with an online posting.

- What potential advantages and drawbacks do you see with this assignment?
- Do you think that students are likely to invest time and energy on this assignment? Why? Why not?

**Assignment 2.** Write a draft of a news report, letter to the editor, or a review of an article from the class reading list. Post it online so three other students can respond to your ideas. Revise the paper based on the comments you receive before submitting it to the instructor. In addition, read and respond to two entries by class members you have not given feedback to within the past month.

- What potential advantages and drawbacks do you see with this assignment?
- Do you think that students are likely to invest time and energy on this assignment? Why? Why not?

### 3. ANALYZING INSTANT MESSAGING AND MICROBLOGGING

Instant messaging (IM) and microblogging enjoy enormous popularity among adolescents today. Answer the following questions, and consider how you think adolescents would respond.

- What kind of technology are IM and microblogging? Usually called communication technology because of their capacity to connect people electronically, are they also educational technology?
- Explain how IM and microblogging serve as information technology when teachers and students use them in instruction and academic discussions.
- How are IM and microblogging like or unlike the printing press, telephone, television, or other important historical communications revolutions?
- How does language online differ from Standard English writing or speaking?



## GROWING AND LEADING WITH TECHNOLOGY

This activity offers an opportunity to grow as a teacher and learn to lead with technology. Begin by reviewing the Chapter 8 Learning Goal and New Technologies listed in the chart at the start of the chapter. Then read the following actual classroom scenario and consider how technologies discussed in Chapter 8 might be integrated into the lesson. Follow-up steps to this activity can be completed on MyEducationKit.

### MICHELLE'S BOOK REPORT LESSON

Michelle assigns monthly book reports to every member of her fourth-grade class. The students read a book, write a summary of the book's story and themes, and read their written report aloud to their classmates as part of Book Report Day, the last school day of the month. Michelle varies the genres and types of books from month to month so the students read fiction and nonfiction throughout the year. As the months pass, the students become unexcited by the assignment, showing less enthusiasm for book reading and writing the report while being distracted and disinterested during the read-alouds.

For Michelle, the book report activity integrates the communication skills of reading, writing, and speaking as set forth in the school's English/language arts curriculum. To create interest in and commitment to the reports, she lets students choose their books from a list

she has prepared along with the school's librarian. By asking everyone to read their reports in class, Michelle hopes to entice students to read more books. While the student reports are often read in a monotone and can be difficult to hear, Michelle sees them as ways for students to practice their oral communication skills.

To respond to the following question and complete the full activity, go to the Growing and Leading with Technology section in MyEducationKit for Chapter 8 and click on the exercise “Michelle’s Book Report Lesson.”

- Using the technologies discussed in this chapter, how would you propose Michelle integrate technology into her monthly book report activity in ways that promote student interest and engagement while still practicing the skills of reading, writing, and speaking?