



UNDER CONSTRUCTION



BUILDING WEB SITES

AS A PROJECT-BASED

LEARNING ACTIVITY

FOR ABE/ESOL CLASSES:

TIPS FOR TEACHERS



WORLD EDUCATION

by **JEFF CARTER**
with Steve Quann

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WITH STEVE QUANN

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Portions of this book originally appeared in an article by Maura Donnelly in *Focus on Basics*, Volume 4, Issue C, published by the National Center for the Study of Adult Learning and Literacy in 2000.

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ACKNOWLEDGMENTS

Thanks to World Education for their support in producing this guide and for the organization's commitment to improving the use of educational technology in adult education. Thanks also to the consortia of state directors of adult education, State Literacy Resource Center staff, and staff development leaders around New England and the Northeast for their strong support of our work in educational technology over the years, including help in organizing many of the training programs from which this guide evolved. In particular, our Web publishing training and technical assistance has been supported in recent years with the help of Janet Isserlis, Abe Kreworuka, David Rosen, Jana Sladkova, and Ralph Silva.

Many individuals assisted with the development of this guide. We especially want to thank Diana Satin, Maura Donnelly, and Eric Appleton for their comments and suggestions, which are scattered throughout the book, and to Charissa Ahlstrom, Emily Hacker, Cindy Fischer, and Sally Waldron for reviewing early drafts.

Thanks to everyone at World Education for their suggestions and assistance. Special credit should be given to Lou Wollrab, not only for his help with this guide and with all of our Web publishing efforts, but for being World Education's original champion of teacher and student publishing on the Web.

Finally, thanks to all the teachers and students who have participated in our Web publishing workshops and minigrant programs over the years. Their projects, along with their feedback and enthusiasm, have been the keys to shaping and expanding our still-developing understanding of this subject.

Portions of this book were taken from an article by Maura Donnelly which originally appeared in *Focus on Basics*, Volume 4, Issue C, published by the National Center for the Study of Adult Learning and Literacy in 2000.

1 INTRODUCTION

Computer and Internet technology in adult basic education (ABE) is often used as essentially a one-way content delivery system. Educational content is pushed out to the learner—via video, Web, or software—and the learner accesses it. So-called drill and kill software is often cited as the quintessential example of this type of learning.

Learners may very well see improvement when using technology in this manner. And yet much of the educational research literature today argues that greater learning progress occurs when technology is paired with instructional strategies like project-based learning, which actively engages students in more intellectually complex work that demands higher-order thinking and relevant, real-life problem-solving skills.

Proponents argue that project-based learning has particular promise in adult basic education because its emphasis on real-life problem-solving supports certain key characteristics of adult learning. For example, adult learners are thought to be motivated to learn by their own needs and interests, to center their learning around their day-to-day lives and prior experience, and to prefer self-directed kinds of learning activities.

If you are a teacher, and these characteristics seem to apply to many in your classroom, a project-based learning activity may be appropriate. What kind of technology-assisted project-based learning activities make sense in the adult literacy classroom?

A student in my class today ran across a student's Web page from a few months ago, which gives information about places for the homeless to get help with food, clothing, shelter, etc. My student said, "This is exactly what I have been looking for!" and printed it out for a friend who has been having trouble. It seemed like a perfect example of a student using the technology to share the knowledge that he already had, information that I would never have been able to give.

—Eric Appleton, Computer and Literacy Teacher at the Fortune Society in New York City

During [our] project, students read and assessed other Web sites, read and peer-revised each other's writing, and used writing and e-mail to communicate their ideas and thoughts. All of this literacy work was done for a purpose the students had decided upon, designed, and implemented.

—Maura Donnelly,
former adult literacy teacher at
LaGuardia Community College in
Queens, New York

One answer might be to connect project-based learning to an activity that supports underserved communities to develop meaningful content for the Web. The lack of meaningful online content for underserved communities was well documented by an influential Children's Partnership's report in 2000. Their report cited significant lack of meaningful Web content for large numbers of Americans, including a lack of local community information, a lack of information written at lower literacy levels and in non-English languages, and a lack of cultural diversity.

Many people attending ABE programs across this country are among those affected by this information gap. A Web site project might offer a way for these individuals to address this problem by building their own online resources that reflect their own communities, cultures, and interests.

Finally, a Web site project also can be used to enrich and strengthen real-life information technology (IT) skills, as well as the real-life "soft" skills (communication, working as team, etc.) that are valued in the workplace.

The Goal of this Guide

Building Web pages is not a common activity in adult literacy classrooms. Nonetheless, there are many adult basic education teachers and students around the country who have worked on Web site projects as a class project. Over the years, we have been fortunate to have facilitated a number of initiatives and institutes dedicated to Web publishing as a learning activity. The purpose of this book is to report what we have learned about Web development in general and share what we have learned, from teachers and students, about developing a Web publishing project in an adult education setting.

Our goal is to provide adult literacy and ESOL (English for Speakers of Other Languages) staff developers and teachers with some simple, user-friendly pointers. It is not intended to be a complete, step-by-step, “how to” manual or a technical guide to building Web pages. While some technical aspects of Web design are discussed, this guide is not a complete instructional manual on Web site design. There are many, many excellent books and tutorials devoted to HTML (the markup language used to make Web pages) and other technical aspects of Web page design. The Web-based companion to this guide (at www.literacytech.org) keeps a reasonably up-to-date list.

Instead, this book is meant to be a companion to those kinds of books, specifically directed at adult literacy and ESOL staff developers and teachers who are thinking of building Web sites as a classroom activity. The audience we address throughout the book is teachers, but the guide might also be useful to staff developers and others. Each chapter represents a major step in the process, from planning and building the site to reviewing and testing it. It is designed for people with at least some familiarity with computers but with little to no experience making Web pages. At the same time, we hope experienced “techie” will pick up some tips on how to apply their knowledge to a classroom project.

Ready? Let’s get started!

2 GETTING STARTED

This chapter discusses some basic preparation that teachers should take before suggesting a Web project as a class activity, and then, assuming the class is interested, how to settle on and refine their idea for a site. Remember, though, that a Web site may not turn out to be the most effective medium for what your students want to accomplish. Teachers are encouraged to work with their learners to determine what they want to communicate, and then determine the most appropriate medium for the project.

Preliminary Considerations

Before you gauge your students' interest in building a Web site, it's worth taking a look to see if you have the basic resources required. (Later, you'll want to take another resource inventory to make sure you have everything you need for your particular project.)

- First, it's a given you'll need **access to computers**. Do your students have access to computers any time of day? What about your class? Anytime? An hour a week? Do you have to sign up to use the computer lab ahead of time? How far ahead of time? Do you want to spread out the project over the length of a course or teach it as a single, concentrated unit? A realistic assessment of the degree of access your students will have to computers in and out of class is an important prerequisite step. (Of course, you'll also have to decide how many class hours you actually feel is appropriate to devote to this project in light of your other curricular objectives.)

- It's important that your project's design, scale, and scope reflect a **realistic assessment of the amount of time your students will actually have to work on it**, especially in terms of computer access time.
- In addition, you'll want to **make a realistic appraisal of your software situation**. Do you have Web design software (like Dreamweaver)? Graphics software? You can actually produce Web pages with nothing more than text editor (like Notepad), but if you want to make and edit graphics or photos, you'll need some sort of graphics software package.
- Another consideration is **Internet access**. Are your computers hooked up to the Internet? You can design Web pages without being connected to the Internet, but when you are done you will need some way of copying those files to a Web server that is connected to the Internet. (For more about Web servers, see page 43.) Does your program have a Web server or an Internet Service Provider (ISP) that provides this service? You'll need one or the other to actually publish your files to the Web, and we recommend getting this squared away in the pre-planning stage. We've encountered teachers who have completed sites but haven't thought through how and where pages will go, or who made assumptions that turned out not to be true. As happened to one teacher when their project was just about finished, "we created the pages and were ready to go live but the staff person who promised to take care of this aspect for us was now unavailable. I didn't know what to do. I was stymied and the project was stalled."

If you are having trouble answering these questions, don't be discouraged! If your school or program has a techni-

cal support person, they should be able to help you. In addition, you may want to consider recruiting an outside volunteer for help with these preliminary issues (and for additional technical help later in the process).

The Teacher's Background and Experience

It's not necessary for the teacher to have much specific experience in making Web pages in order to start a Web project with a class. However, every teacher we have met *without* that kind of experience took some time to learn the basics ahead of time before taking the plunge with their class. There are many books and tutorials that can be used for this purpose (see our Web site, www.literacytech.org, for ideas).

What's most important is to be comfortable and confident around computers and in surfing the Web, and to have a good sense of file management so that your Web pages and all the files that go with them (images, sounds, movies, etc.) are organized well. Knowing a little about editing images will be helpful too.

How Does this Project Fit?

We have found that Web publishing is a viable way to engage students at different levels. Publishing on the Web is possible even for students with very limited literacy skills, using one of the online tools discussed on page 17.

Whatever level is being taught, we have found that there are three questions that teachers should consider before suggesting the idea to students:

Before starting to do Web design projects with my students, I had worked with computers for a few years as a technician doing networking and administration and had taught computer literacy for about a year. However, I only knew the basics of HTML and site management. I had been maintaining a very basic Web site to hold curriculum for my computer classes, with a separate page for each class that I updated before the class began. The background I had in computers was very useful, but I don't think that it's necessary. It is important to know some basic technical details before beginning the project, however. This will help you field some of their questions when they come.

—Eric Appleton, Computer and Literacy Teacher at the Fortune Society in New York City

The purpose of [our] project was not to make my students into Web designers but rather to encourage them to write and give them a vehicle for publishing this writing. This said, many students were also interested in learning about computers in general and wanted to be involved in all aspects of the project, including the more technical ones.

—Maura Donnelly,
former adult literacy teacher at
LaGuardia Community College in
Queens, New York

Terms to Know

WWW or Web	Both are used as shorthand for the World Wide Web, by far the most common method for accessing Internet resources. Many people use the terms Internet and World Wide Web interchangeably, but actually the two terms are not synonymous. The Internet is basically a huge network of networks. It connects millions of computers together around the world. The World Wide Web is one way of accessing and moving around this giant network, using a piece of software called a Web browser to access documents called Web pages.
Hypertext	Any piece of text in which text and pictures can be linked to one another. When you click on a link in a hypertext system, you “jump” to another object or another page that is linked to it. Web pages are the most famous example of a hypertext system.
HTML	Stands for HyperText Markup Language. This is the language used “behind the scenes” to format Web pages, like making the headlines big, or the text bold. HTML is “platform independent”—that is, any HTML code works on Macs or PCs or any other computer with a Web browser.
Tags	These are the specific HTML commands that you place in an HTML file. For example: <code></code> (the command for “bold”).
URL	Stands for Uniform Resource Locators. This is the string of characters (such as <code>http://www.google.com</code>) that act as addresses to locations (usually pages) on the Web.
Links	A link on a Web page, when clicked on with the mouse, takes you to another part of the same page or another page altogether. That page can be on your site or on another site. Using HTML, you can select any text or graphic to be a link to a specified URL. A text link is often underlined.
Web Sites and Web Pages	A Web page is a single HTML-tagged document. A Web site (sometimes written as website) may consist of anywhere from one to many thousands of Web pages.
Home Page	The first page you want people to see on your site is called the home page.
Publish	In this context, we are referring to the process of making your pages accessible to other people browsing the World Wide Web, by placing them on a server connected to the Internet.
Web Browser	The software used to view Web pages. Internet Explorer is one example.

- What are the educational goals for this project? How does this fit with the rest of what the students in this class are trying to achieve?
- What is the desired duration of this project? A semester? A month? A year? Longer? Consider carefully your class's needs. Are they more likely to stay with a project if it is spread out over time? Or are they more likely to enjoy working intensively and a short but concentrated effort?
- How will you assess this project?

Your Students' Prior Background and Experience

Understanding your students' prior knowledge and experience with the Internet and the Web is another key step before determining whether a Web site project is right for your class. Students in an adult education class may very well have different levels of experience and interest in the Web. Some students frequently use computers, already have e-mail accounts, and are experienced at surfing the Web. Some may have designed their own sites. For others the hook might be the connection to other interests, such as digital photography.

Of course, some students may not have much experience with the Web or the Internet at all. As one teacher notes of her experience, "A few students had never used computers and were, in the beginning, almost paralyzed with fear that they would break the machines." These students will probably benefit more from basic lessons on using computers and the Web, which is outside the scope of this book. There are, however, a number of resources devoted to introducing adult education students to the Internet, such

I wanted students to work on many language and computer skills: when they were doing research using Internet resources and children's library books I brought in, I wanted them to improve their reading comprehension and vocabulary; when they worked on writing their essays, I wanted them to improve their spelling, grammar, sentence structure, punctuation, and paragraphing; when they worked on the computer, I wanted them to improve their ability to search for information on the Internet, use a scanner to scan photos, copy Web addresses to give credit for information or photos they used, choose from layout options, upload images, and type their essays.

— Diana Satin, ESOL/Computer Teacher at the Jamaica Plain Community Center's Adult Learning Program in Boston, Massachusetts

[My] students were members of the local community who came to the center to improve their reading, writing, math, and English skills and get their certificates of General Educational Development (GED)... The class met for nine hours a week, of which one-and-a-half hours a week were spent in the computer lab. The first day of class, I polled my students on their expectations for the class, their personal goals, and their interests. The interest in "learning computers" was overwhelming... Our first few weeks in the computer lab were spent reviewing the basic components of a computer and their functions.

—Maura Donnelly,
former adult literacy teacher at
LaGuardia Community College in
Queens, New York

as *Surfing for Substance*, a guide published by the Literacy Assistance Center of New York City.

And even students who have experience using the Web may not realize how documents are actually published to the Web. "When I asked my class if they wanted to create a Web page, I got a collective blank stare," notes a teacher, referring to his group of ESOL students. "They needed not only to understand what a Web page was, but also the value in creating one."

Be sure that you have buy-in from your students; at the very least, make sure that they agree to the benefits of doing this project. Building Web sites can sometimes hit some frustrating snags—not an uncommon experience anytime you are using technology, but one that is a lot less difficult to deal with when everyone is committed to moving the project forward.

Deciding on an Idea: What's the Web Site Going to Be About?

Once your students are "hooked," we believe it will not be difficult to elicit ideas for a project. Nonetheless, many teachers prepare a few suggestions ahead of time. Others suggest starting off by coming up with the basic idea for the site yourself, and then moving toward a more student-directed project by helping the students fill in the details.

Some of the sites we have seen include:

- A collection of educational sites rated and ranked by students;

- Interviews with local health, and other community resources, designed to introduce these resources to other members of the community;
- Collections of personal biographies and photos;
- A Web site devoted to the history and/or culture of the local community, from the students' point of view;
- A Web site focusing on economic development opportunities in the local community;
- Text and photo diaries of local attractions or community locations;
- A collection of interviews with local people about their jobs;
- A Web site in which two or more classes from different communities compare political, social, economic, and environmental experiences.

It may be helpful to actually show some examples of Web sites on topics of interest to your learners, especially those produced by other ABE classes. Teachers may wish to design a Web site evaluation activity around such a review, such as the one at the end of this chapter.

“As a group we discussed what would be involved in building a site, what we might want to have on our site, and any reservations we had about making the site,” recalls one teacher. “After a week we put the idea to a vote and the class decided to participate in the project.”

Ideas may also grow out of other class activities. As another teacher told us, “I think [our] topic came up

I introduced the idea of a virtual school visit project. In a virtual school visit, two classes come together to be electronic pen pals. The participating students exchange e-mails and eventually each class creates a Web site that is framed as a tour of their school for their partner class. The structure of this project was ideal for my students. First of all, to communicate across a distance using writing was new for them. They did not generally write letters. While some students were already using e-mail to communicate with people outside of our class, this gave every student the opportunity to develop a relationship with someone simply using words. Secondly, the prospect of creating a Web site, while daunting at first, intrigued many of the students. We had been using the Internet to do research during the year and we had looked at some student-created sites. Students had expressed an interest in creating their own site, in getting their writing and voices out there.

—Maura Donnelly,
former adult literacy teacher at
LaGuardia Community College in
Queens, New York

because throughout the year students are always given the opportunity to give a presentation to the class, and usually the topic they choose is their culture or country, so a theme was already present.”

Site Evaluation Activity

This is an evaluation framework designed by Maura Donnelly for her project.

Answer the following questions about each site you visit:

- Is it easy to move around this site?
- What do you think of the background color and the color of the fonts?
- Can you read this easily?
- Do you like the use of pictures?
- What would you change about this site?
- What about this site do you think we should try to include in our site?

Working individually or in pairs, students can review the sites with one or more of these questions in mind and e-mail their thoughts to the teacher. Without any such guiding questions, students often wrote back that they liked or did not like a site or that they thought a site was nice.

The LiteracyTech Web site

The LiteracyTech Web site (<http://www.literacytech.org>) includes a Web-based complement to this guide. It includes links to software resources, additional reading, and Web sites—many designed by adult basic education (ABE) teachers and students—that illustrate many of the ideas and issues described in this book.

3 PLANNING

Once the group has a basic idea for a site, there is a strong temptation to jump right in and start making pages. Try to resist this temptation. Instead, work with your students to develop an overall plan for the project. Not only does this greatly increase the likelihood that you'll complete the project successfully, it also mirrors the way Web sites are developed by professional Web designers. And many Web site planning tasks (such as mapping roles to tasks, developing a schedule) can be good experiential learning activities on general office work.

For example, you may want to start the planning by asking your students to spell out the goals and objectives for the site. Understanding what the group wants to achieve with the site will be an important factor in making decisions about content, design, and navigation. For example, let's say your ESOL students have decided that they want to put a virtual tour of the local library on the Web. Who is the audience for this site? Is it other ESOL students in your program? Newcomers to the community? If the answer is other ESOL students, how might this influence decisions about the amount and style of writing on your site?

Other preliminary planning questions might include: What needs will this site address? What kinds of questions will the audience for the site likely have?

Worksheet 3.1 is a template for organizing a discussion about these early planning decisions. Remember to refer back to your answers to these questions (or whatever ques-

Much of the actual work for the Web site took place in our classroom, not in the computer lab. We wrote about and discussed what we wanted on our site and then worked on particular pages.

—Maura Donnelly,
former adult literacy teacher at
LaGuardia Community College in
Queens, New York

We used a focusing question to guide us: "If [other students] were coming to visit, what would we show them?" First we talked about the level of detail we would show. Were we talking about a visit to our school, our class, our city, our borough, or our homes? Some students wanted to get personal and show their homes, family, friends, and workplaces. Other students wanted to show pictures of our class, our computer lab, and fellow students and include examples of our writing. Still others wanted to show the visitors New York City and especially our borough, Queens. We had much discussion about this; the students' individual pages reflect this diversity of thought.

— Maura Donnelly,
former adult literacy teacher at
LaGuardia Community College in
Queens, New York

I learned that the best way to keep students involved and motivated was to give them a structure to work in. We tried to do a collaborative project once before that was not completed. I took more of a leadership role this time and defined the deadlines, the major parts of the project, etc. Students helped me put this into practice. Before, I had asked the students to define the project, the deadlines, everything.

– Eric Appleton, Computer and
Literacy Teacher at the Fortune
Society in New York City

tions you and your students decide are important) when making design and navigation decisions later in the process.

Models of Development

There isn't a single best model for developing a Web site with your class. Here are a few examples:

Students as Contributors. The reality is that in some cases, a large chunk of the Web site development may fall to the teacher, other staff, or outside volunteers, while the students focus on one or more discrete tasks, such as writing the stories or taking photos for the site. The advantage of this kind of model is that it is the easiest to manage; the disadvantage is that there is a danger that the teacher will take on all of the decision-making tasks and the resulting site will not adequately reflect the students' views and interests. (Another disadvantage is that the teacher might feel overwhelmed by having so much work to do!)

"Modular" Sites. Another model that is frequently employed is something we have come to call "modular" development. Modular sites are those sites in which individual students are primarily responsible for their own (usually single) pages, which are not particularly interdependent on each other. The pages often have their own look, and often their only connection to the rest of the pages on the site is via the home page. Students may collaborate together on just a small portion of the site, such as the home page.

Imagine, for example, a project in which each student produces a single Web page describing something about his or her personal histories. The class as a whole might contribute ideas to the design of a home page, from which there are links to all of the individual stories. There is some

Planning a Web Site

Web site idea:

What are your objectives for this site?

(Examples: To describe a community resource; to provide resources for other students; to establish an identity for ourselves in the community.)

What is the main audience for this site?

Who else may be interested in looking at the site?

What will users expect to be able to do with the site?

What is the key message this site should convey?

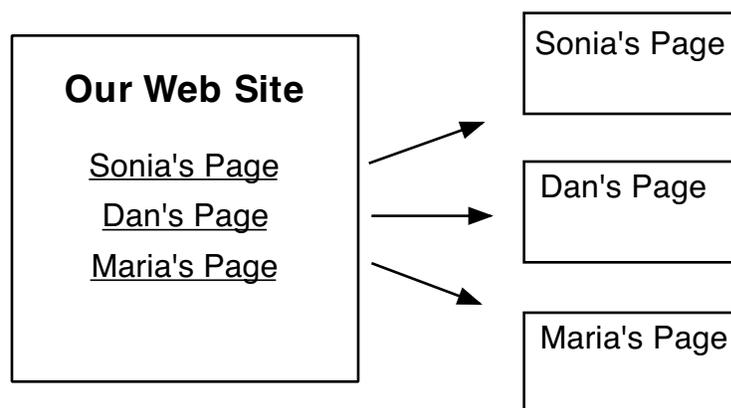


Figure 3.1

teamwork involved, but there is more of a focus on individual work. Figure 3.1 illustrates this kind of a structure.

Modular sites can be an effective way to manage a project in an adult education setting, where class attendance can be sporadic and student turnover can be high. The advantage is that if one student is unable to finish his or her particular page, progress on building the rest of the site continues unabated. (If a project is more reliant on interdependence among the students, and, for example, a student who was responsible for taking all of the photos for the site leaves the class, progress on the site may grind to a halt.)

Many of these projects are able to take advantage of free Web-based applications that assist people in creating and publishing very simple Web pages. (A reasonably up-to-date list of these can be found on www.literacytech.org.) With these tools, you can actually write and publish your site using nothing more than your Web browser.

“Real-Life” Models. These are the really ambitious projects, which may attempt to model the “real-life” Web site development process as closely as possible. In these

One thing I have done to work with lower-level classes is to create a template for a Web page with a number of questions included as prompts to help the writing happen. The student can then save the file and you can put it into a Web page. That would be the type of project where the teacher does most of the technical work and the student just does the writing.

– Eric Appleton, Computer and Literacy Teacher at the Fortune Society in New York City

I wanted my students to work together to help each other through the whole process. This was necessary because the Internet connection in our computer lab was down during the time we were working on this project, and students had to share a few of the office computers, so two or three would sit at a computer to work together. Some students had experience with e-mail, searching on the Internet, the Internet in general, and typing, and some had stronger language skills, so they helped each other as they could. Interestingly, a few years later I tried doing the same project when the Internet in the lab was functioning, and it was not as successful because each student had her/his own computer to work on, and they made many more mistakes than the previous group that we couldn't keep on top of to correct.

— Diana Satin, ESOL/Computer Teacher at the Jamaica Plain Community Center's Adult Learning Program in Boston, Massachusetts

projects, the site development and design is much more uniform and depends on the work of an interdependent team of people with one or more specific roles, such as content creator, editor, or graphic designer. Any project that more closely models real-life development has the advantage of providing students with more opportunities to gain technical and workplace skills that they can apply outside the classroom.

The important thing is to use a model that makes sense not only for your students, but also in terms of the time and effort you are able to put into managing the process. Class sites do not have to be hugely ambitious in scope to be valuable. Even publishing just one piece of student writing on the Web can be a powerful experience for many students.

Forming a Project Team

Whichever model makes sense for you and your students, working as much as possible as part of an identifiable team presents an excellent learning opportunity for everyone involved and adds a sense of cohesiveness and shared mission to the project as a whole. If the process is designed and implemented as a unified team effort, each person will be more likely to have an opportunity to learn from others as the site is being developed.

Whatever the site, it's almost always advantageous to identify exactly who is part of the project team right from the beginning, and to clarify each person's role in the process. Class time needs to be devoted to discussing the interests and expertise of the individuals in the team, and to map that expertise and interest to the expertise required by the project. If you want to try to adopt the roles that are found in real-world Web development, Figure 3.2 outlines

the most important of these roles. Because of the high-level vocabulary involved, teachers working with lower-level students may choose not to use these exact terms and definitions with their students, but for any teacher or team leader, it's probably worth understanding these roles as you plan the project.

Clarifying roles and knowing how to interact with a team is very important to the success of the project, both in the classroom and in the real world. If a project begins with loosely defined roles for the entire group, it is much more likely that an important set of tasks will be unaccounted for and the project will hit a snag. Even with a project where each individual member of the class is building a page on his or her own, it may still be useful to identify those roles so that the students can better understand and assess their success in taking them all on.

Of course, whether in the classroom or real life, members of the team can play multiple roles. Likewise, it's not necessary for students to fill every role role, either. For example, it may be useful for the teacher, a technical support person (if you have access to one), or an outside volunteer to help with some of the technical aspects of building the site. (This could be a terrific opportunity for technology-savvy members of your local community to get to know some of the members of your class.) Many, if not most, of the professional sites on the Web are built by project teams; only a few members of that team actually write the HTML that produces the pages. The other roles in the process, such as project manager, content developer, and information architect, are equally valid and important, and it's essential that you and your students understand this. You do not need to teach your students to be proficient in HTML in

It is important that you spend time in the class talking about the organization of the project. If the class will work as a group to complete the Web site, students will inevitably take on different roles. It will help everyone if you can define these roles and their responsibilities. Maybe you will have a group of students responsible for photos, a group for editing and another group responsible for designing the pages and uploading them. In this way, you can make each group responsible for discovering the necessary knowledge of their role. The photographers will learn to use the digital camera, download, crop and edit photos. The editors will establish the tone of the Web site, as well as the necessary sections and content for each page. The Web design group will have to learn how to build the pages and upload them to the server. These are just examples and your class could be organized in different ways, but the important thing is to be organized yourself and help students with deadlines and their responsibilities as part of the class.

– Eric Appleton, Computer and Literacy Teacher at the Fortune Society in New York City

The complexity of this project demanded various skills and strengths: writing, humor, linear and nonlinear thinking, leadership, research, an understanding of the World Wide Web, consensus building, e-mail, critical thinking, photography, and all aspects of design; and students were given the opportunity to share their talents. One student who understood how to use the cameras demonstrated this for the others. A student who was very efficient and personable was able to effectively lead the class through some decision-making sessions. Some students were diligent and resourceful about gathering various types of information about New York City landmarks. Students who had a strong sense of the navigation and flow of Web sites were able to explain and illustrate this for the students who were not so Web savvy. We all took on the roles of expert and novice, apprentice and master.

—Maura Donnelly,
former adult literacy teacher at
LaGuardia Community College in
Queens, New York

order to build a Web project! You simply need to identify the person(s) who will take on that role.

Teachers often credit the assistance of staff and volunteers as a critical factor in the success of a project. “My husband was kind enough to come to class and teach students how to scan their pictures,” said one teacher, “while I helped students with other aspects of their pages. Our school has two lab staff people, a technology coordinator who maintains the hardware, and an assistant computer instructor who assists teachers in the lab. All this assistance, together with classmates helping each other, was necessary to keep the students moving forward on the project. It would have been impossible to complete it successfully without them—or at least quite frustrating.”

At the same time, make sure you utilize the talent present in the class. There may already be a student who is tech savvy enough to help you and other students; we have also seen some students develop technology skills quickly and take enough of an interest that they can become “the expert.” A teacher may do well to tap this talent.

Resource Inventory

Once you have decided on the basic material that will be included on the site, you may want to compile a complete list of resources that will be needed. For example, if you are going to have photos, where will they come from? Do you have a camera? Worksheet 3.2 is designed to help you identify the resources you’ll need (including human, programmatic, software, and hardware). What other resources might you need?

Figure 3.2

Typical Web Development Roles

<u>Role</u>	<u>Responsibilities/Skills Needed</u>
Project Manager	<p>The project manager facilitates communication between team members and is responsible for focusing the team on their goals and their schedule. We frequently assume during the course of this book that the teacher will be playing this role—but this does not have to be the case, as there may be adults in your classroom who have project management experience—or who would like some—who might take on this role. Note that if a teacher is going to be the project manager, this does not mean that the teacher is responsible for making all the decisions about the site or the site content. The project manager’s job is primarily to facilitate the process; he or she should be skilled at facilitating discussions and helping groups come to decisions.</p>
Content Developer(s)	<p>Typically writers, editors, and photographers. The typical kinds of content that go into basic sites include photos, graphics, pieces of writing, and maybe even some multimedia (video clips, for example). The content developers may be responsible for gathering existing content, converting that content (for example, by scanning photos), and/or for producing new content. For content developers who are gathering and converting pre-existing materials, it is likely they will need to have or learn at least some understanding of how to use tools such as word processors, digital cameras, scanners, and graphics software.</p>
Information Architect(s)	<p>This is the increasingly popular term for those who are responsible for designing the structure of a site, much in the same way that a traditional architect designs a building. This usually takes place at the beginning of the planning process, organizing the content and mapping the relationships between different pages and pieces of content. They also work with the graphic designer to design the site’s navigational system. A key skill here is the ability to visualize relationships.</p>
Graphic Designer(s)	<p>Graphic designers are responsible for the visual “look” of the site and the layout of the pages. They create the logos and graphics and overall appearance of the pages (colors, backgrounds, etc.). They also design the navigational elements of the site. Often, but not always, they will produce Web page templates for the site, although that function may fall to those involved with Production. Graphic designers are usually visually creative and often are skilled in art and drawing. They will probably need to have or learn at least a basic knowledge of computer graphics software.</p>

Figure 3.2

Typical Web Development Roles (cont.)

<u>Role</u>	<u>Responsibilities/Skills Needed</u>
Multimedia Designer(s)	Some sites may include animation and video, in which case you will likely need a multimedia Designer. The multimedia designer typically works with the content developer(s) to develop the proper formatting and delivery technology for this kind of content, and with the graphic designer to integrate the multimedia elements into the overall design. Multimedia designers will likely need to know or learn how to use multimedia design software as well as tools such as video cameras.
Programmer(s)	Some sites may require optional scripting or programming in order to create certain interactive features, such as when a user fills out a form and has the results sent back to them. If a programmer is needed, they will have to have experience working with programs such as perl or php. Don't worry about this, however—remember that many, many sites do not use any programming or scripting beyond basic HTML.
Production	The production roles include everything involved with actually putting the Web pages together using HTML (or an equivalent, like XHTML). In this book, we refer to that stage as "building" the site. Basic HTML is not necessarily required (because a Web editor may be used), but remember that basic HTML is very easy to learn. Experience using a word processor is probably sufficient background for most people. You don't even have to be a good writer!
Testers/Evaluators	These are the quality assurance people who review and evaluate the site in terms of the targeted audience's point of view once the first draft is done. Members of the team involved in other roles could play this role as well, but it may be wise to have at least some testers who are not involved in the rest of the development of the site, in order to give it a fresh eye. (This might be an excellent opportunity for lower-level students to get involved.)
Webmaster/ Web Site Editor	This is the person or person(s) who will be responsible for the ongoing maintenance of the site, such as updating information, and making changes and additions. Depending on the level of editing needed (and the type of software used to edit the pages), this person may or may not need to know much HTML.

Resource Inventory

Hardware/Software

What hardware and software will be needed?

Content

Where will the content (such as text and photos) come from? Will original content have to be created?

Roles

Who is taking on each of the key roles (content developers, graphic designers, etc.) in the development of this site? What set of skills will be needed for each of these key roles?

Hosting

Where will your site be hosted on the Web?

Program

What is the role of your program in the site development process? For example, will your program be hosting the site on their Web server?

Other

Deciding on the Site Content

Are you using or modifying existing graphics and photos, or creating all your graphics and photos from scratch? If you are using preexisting graphics or photos, where are they coming from? Will they need to be scanned, or changed to the proper format? (Many graphics, and most photos, are already in the proper format, but if not, most graphics software programs can open them and convert them to the correct format. See **Graphic File Formats**, on page 33.)

Remember that not every phase of your project needs to be high-tech. For example, disposable cameras are very inexpensive and almost every film development service offers to provide your photos on compact disc in addition to or as an alternative to prints. These electronic images will most likely be in the proper format and can be used on your Web site. As of the writing of this book, in 2003, this is much cheaper than buying a digital camera to produce those electronic images.

At this point you'll also want to start thinking about the overall look of the site. After reviewing the content, those responsible for graphic design ideas may want to suggest a design direction. For example, a site that is going to be devoted to photos of student artwork might have a graphic design that resembles an art gallery.

Drafting a Schedule

One of the most common problems we have seen with class Web projects is underestimating the amount of time it will take to accomplish each step. Perhaps the most effective way to prevent this from happening is to draft a realistic project schedule. A class that meets for two hours twice a week is not going to pull a Web site together in two weeks. But it also may be difficult to pull it together in 12 or 16 weeks, if access to computers is limited.

The schedules in Figure 3.3–3.5 can be used as a model for drafting your production schedule(s). They are designed for class projects that follow a standard Web development process, and you'll likely want to adapt it to meet your particular needs.

Even with a project schedule, it is often difficult to gauge the time it will take to finish a project. Much depends on the depth of the lessons that accompany the projects, participants' skill levels (either in language or computer competency), the amount of writing and editing expected, the amount and complexity of graphics or multimedia elements involved, and the level of technical support required. With those warnings in mind, we suggest planning for at least 30–40 hours of class time for a comprehensive project.

Figure 3.3

Planning (3–5 hours)

Goal	Who	Target Due Date
Initial Idea	_____	_____
Review Goals and Target Audience	_____	_____
Form Project Team; Clarify Roles	_____	_____
Draft Map of the Site	_____	_____
List Content Elements	_____	_____
List Functional Elements Needed	_____	_____
Resource Inventory	_____	_____

All tasks should be completed by: _____

Figure 3.4

Model-Building & Sample Pages (10–15 hours)

Goal	Who	Target Due Date
Form Project Team & Assign Tasks	_____	_____
Start Creating Content	_____	_____
Text (specify)	_____	_____
Graphics	_____	_____
Photos	_____	_____
etc.	_____	_____
Draft Sample Page(s)	_____	_____
Review a Sample Page(s)	_____	_____

All tasks should be completed by: _____

Figure 3.5

Building the Site (15–20 hours)

Goal	Who	Target Due Date
Second Draft Map (if necessary)	_____	_____
Finish Content Conversion/Creation	_____	_____
Draft Template(s)	_____	_____
Review Template(s)	_____	_____
Finalize Template(s)	_____	_____
Build Draft of Site	_____	_____
Evaluation	_____	_____
Additional Drafts (if necessary)	_____	_____
Publish	_____	_____

All tasks should be completed by: _____

Navigation and the Site Map

On a Web site, the user can usually choose a number of different ways to navigate the site, but the possible paths he or she can take are determined by the information architects and designers of the site. If there are too many options, the navigation can be confusing. If it's unclear, the users may get lost, or not be able to return to where they started.

Most sites are hierarchal in terms of organization. Figure 3.6 illustrates how this kind of site is organized.

Note, however, that not all sites are organized this way. For example, a class might decide to build a Web site chronicling a trip they took together. Their site may be organized in a linear fashion in order to recreate the experience of going on the trip from start to finish. Figure 3.7 depicts this site's basic organizational structure.

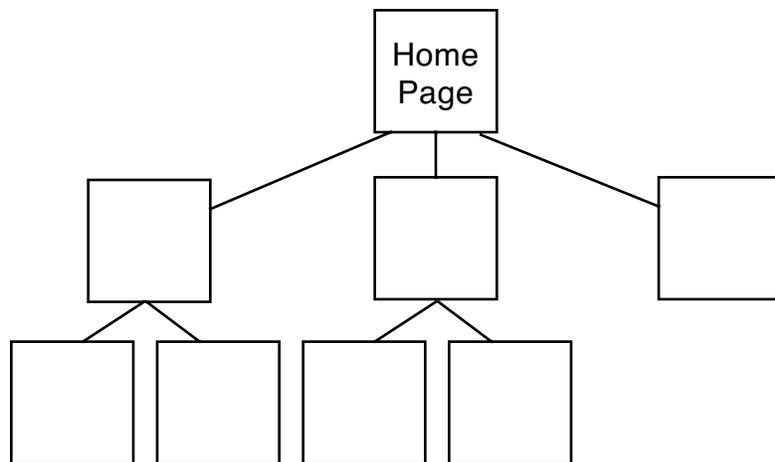


Figure 3.6

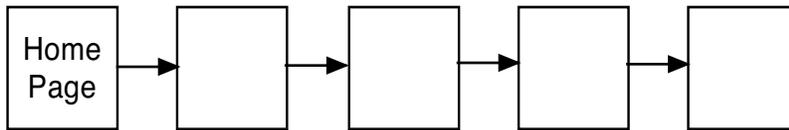


Figure 3.7

Most sites, however, are hierarchal, and an important first step is to decide on the major categories of that hierarchy. These are almost certainly going to be the major links on the home page of the site.

For example, the home page for the site depicted in Figure 3.6 might look like the page in Figure 3.8.

A site map is basically a diagram that shows the relationship between all of the pages on your site. It basically provides the blueprint for your project. Moreover, the process of working as a group to build the site map—thinking carefully about how users will travel through the site—often leads to great new ideas for additions to the site.

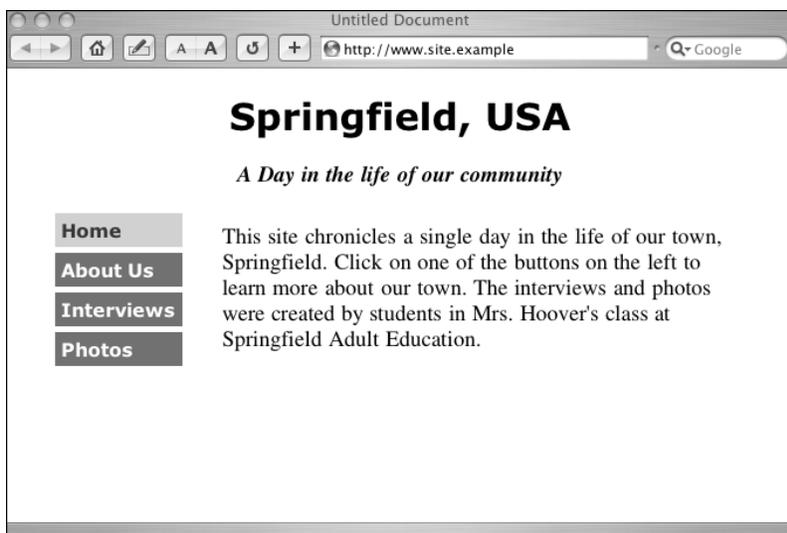


Figure 3.8

A hierarchal site map resembles a family tree or an organizational flow chart. At the top of the map is the home page; links are represented by lines leading to other pages below the home page. By understanding where each page sits in the hierarchy, the information architects can help the designers determine which navigation elements are needed on each page.

There are many ways to develop site maps. Some people prefer to draw it out on paper; others use the “sticky-note” method, using individual sticky notes to represent pages; and others use a chalkboard, or whiteboard; a group of York, Maine ESOL students used construction paper and string, as shown in illustration 3.9.

Remember that orientation is also very important. What are the visual clues that will let users know where they are on the site? Make sure it is clear how to get back to the home page.



Figure 3.9. A team in York, Maine construct a map of their site using construction paper and string to represent the links between pages. Photo: York Adult and Community Education

Organization and Navigation Activity

Materials Needed:

Yellow sticky-note pads, whiteboard or chalkboard

Ask each member of the team (or those members of the team responsible for the information architecture) to write down the kinds of information they expect to be included on the site. Gather all of the notes and remove any duplicates. Ask the group to arrange the remaining notes into categories by sticking them on a large whiteboard. These initial groupings can then be reviewed and revised until the group agrees. The final agreed-upon categories likely represent the major or "top level" categories of the Web site.

Graphic Design and Storyboards

Designing how the pages will look is not just a matter of making them pretty. In Web site design, graphic designers use colors, images, and other graphical elements to support the navigational structure of the site. For example, as shown in Figure 3.10, images that look like buttons are usually used to indicate a link to another page. Visual depictions of a house might be used to indicate a link back to the home page. The graphic design also captures the mood and tone of the site.



Figure 3.10: This site, designed with students at West Paris Family Learning in West Paris, Maine, has clear navigation buttons on every page.

One way to help your students arrive at decisions regarding the graphic design is to bring in examples for them to choose from. One teacher suggests bringing colored paper into class to show choices of background color, and printouts of some design choices, and asking the class to vote on which to use and how to place them. Again, using examples from existing Web sites may help with this process.

Many factors regarding your site's intended audience come in to play when designing the look and feel of the site. Consider:

- How can color, contrast, and font size affect the readability of the site?
- Does the background color make the text less readable?
- How difficult will it be for people with certain disabilities to navigate the site?
- Is the site too busy or complicated for your intended audience?
- Are there any cultural considerations to consider regarding colors, graphics, or word choices?

When the time comes to design pages, don't start off using your HTML editor, pick up a pad of paper and some pencils or markers. Drawing out your design ideas makes it easier to try out and edit ideas, and it can be a fun activity too, especially for those students who are not that comfortable with computers. This process is sometimes referred to as "storyboarding"—much like how film directors draw storyboards of key scenes before they shoot a movie. After your

group has agreed on a design based on the storyboards, then you can plan how you will create these designs on the computer using your HTML and graphic design software programs.

Graphic File Formats

As of this writing, there are two file formats that are in regular use for Web sites. Your graphics will need to be saved in one of these two formats in order for them to be displayed on your site.

GIF

GIF stands for Graphics Interchange Format. The GIF format is ideal for navigational buttons, icons, and diagrams, or any graphics with large blocks of a single color. Files saved in this format end with “.gif”.

JPEG

JPEG stands for Joint Photographic Experts Group. This file format will be familiar to you if you are a digital photographer—many digital cameras save images in this format by default. As the name implies, JPEG was designed with photographs in mind, and is almost always the best choice for photos. Files saved in this format end with “.jpg”.

As a rule, you’ll probably want to use JPEG for photos and GIFs for everything else. Of course, in the classroom it may be fun to experiment to see which you like best.

4 SAMPLES AND TEMPLATES

Now it's time to start working with HTML, or HTML-editing software. As noted in the introduction, this book is not a tutorial on HTML. (Check www.literacytech.org for a list of free online tutorials.) However, we can offer a few tips on how to introduce the concept of HTML to beginners.

HTML is a simple markup language that allows Web publishers to create Web pages. HTML is really just a series of tags that are integrated into the text of a text document, and thus a Web page made with HTML is really just a plain-text file that can be created and edited using any text editor, such as Notepad.

Of course, there are also several HTML editors available, which allow you to create pages without knowing how HTML works at all. Working with these programs is easier for most people because you can see what the page is going to look like as you work on it, much like creating a newsletter in PageMaker or a letter in Microsoft Word. However, we suggest you and your students learn (at least) some basic HTML. While HTML editors are very useful, occasionally they will produce an unexpected result or error, and in those cases it might very well be easier to go in and fix the HTML in a text editor. You can build a site without knowing a thing about HTML, but it is probably going to be helpful to know the basics.

HTML tags are usually English words (such as “blockquote”) or abbreviations (such as “p” for paragraph), but

Once we had decided on some basic components of the site — a first page, individual pages, e-mail with our key pals, local landmarks, and our school and class — we set about designing the site. This design work included the aesthetics of the site as well as its navigation and flow. This last component, the flow, was possibly the most difficult aspect for students. We placed ourselves in the mind of the visitor and, with all of the components of the site on the blackboard, we asked: “Where would I go next?”

—Maura Donnelly,
former adult literacy teacher at
LaGuardia Community College in
Queens, New York

they are distinguishable from the regular text because they are placed in small angle brackets. So the paragraph tag is `<p>`, and the blockquote tag is `<blockquote>`.

If you decide to teach your students some HTML, we have found that a great way to illustrate this is to open the HTML file in Notepad and a Web browser at the same time (see figure 4.1).



Figure 4.1: In this example, the file "mypage.html" is open in both a text editor and a Web browser. You can try this yourself by creating a file in Notepad or another text editor, typing the text as shown above, and saving the page with the name "mypage.html." Open the file in a Web browser and it should look like what you see in the second window.

Templates

In professional Web design, the key to effective Web production is the use of templates. For students unfamiliar with the concept of templates, this can be a particularly useful concept to learn, as templates are used in the production of other kinds of electronic documents as well.

A template is the basic skeleton of a Web page. These are simply files with some basic HTML tags already in place for the static elements that will appear across many of your pages, such as the navigation bar and or site logo. To make a new page, you simply make a copy of the template and drop in your non-static content. Many sites use just a few templates. One approach that many people use is to build a template for each level of the site, assuming your site has a top-down, hierarchal structure.

In addition, many Web-authoring tools have built-in templates. You may want your class to experiment with these as well.

Templates are important for two reasons:

- **Efficiency.** Not only does this approach save a significant amount of time and effort, but it also reduces HTML errors.
- **Consistency of design.** Your goal should be to create a site where a user can expect the navigational elements and overall look of the site to be the same. This doesn't mean all the pages have to look exactly alike. But the menu bars and navigational elements should have a consistent look and placement on every page so that the user isn't confused about how to navigate the site.

We suggest starting by creating a sample page, with all of the content you're expecting will be on that page included. The next step is to review the sample. Is there anything missing? Are there any issues you did not anticipate? Anything you want to change?

After reviewing and approving sample pages with your team, you can delete all of the content while saving the elements that you'll want repeated on other pages, such as the navigational menu, or a site logo. The resulting file can then be saved as a template. See figure 4.2 for an example.

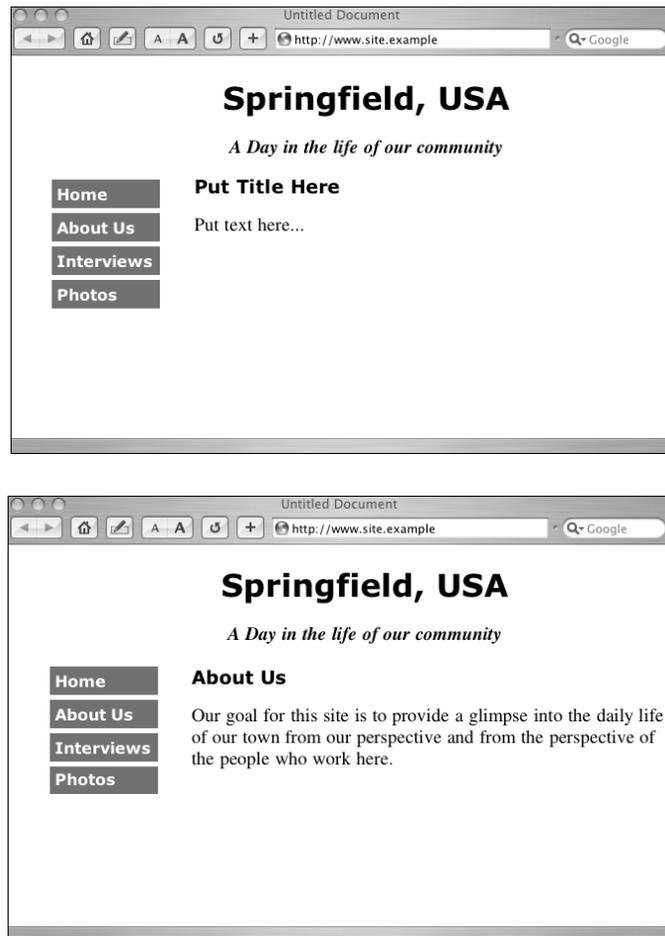


Figure 4.2: A template, and a page based on that template.

Tips to Bear in Mind Before You Start Building the Site

- Always make backups! Nothing is more frustrating than losing hours of work because a computer has gone down and there is no backup of your files.
- Make sure students write down their passwords in a safe place if they are using one of the Web-based applications discussed on page 17. That way, if they want to add or edit something later, they can.
- Document Your Work: We recommend writing down any specifications or process steps that might be difficult to remember later on. This includes typefaces (font, font size, spacing, attributes, etc.) and graphical measurements (how wide is our menu bar supposed to be?).
- Remember that once published, a Web site is available to anyone in the world with access to the Internet. Consider discussing privacy issues with your students, such as whether they want their names, photos, or other identifying information included on the site (for reasons related to politics, safety, or documentation, for example). As the site is developed, be careful to monitor for private information or other content that may not be appropriate to publish outside of class.

5 BUILDING THE SITE

Creating and Collecting the Content

The content of Web pages usually includes:

- Text
- Illustrations
- Photos

As noted previously, advanced sites may also include multimedia, such as sound, video, and animation. If the work involved in collecting the content for your site is assigned during the planning stages, people can be working on this simultaneously with the template-building steps described in Chapter 4.

While it is not necessary to have created or collected all of the content during the planning and model- and template-building stages, we highly recommend having all of it ready before you start actually building the site.

Content, of course, can come from a variety of sources depending on the objectives and purpose of the site. Students may be writing up interviews with local community members, or writing their own stories; taking pictures or scanning in existing pictures; or designing logos or graphics using graphics software.

Building a Draft of the Site

The first draft could be a rough draft of the whole site, or just a particular section or module. It's not necessary for

From the beginning of the project, students were adamant about having pictures on the site. We could get access to a digital camera through the college but opted instead to supply the students with their own disposable cameras. A digital camera would have been easier from a production point of view: it would allow us to simply download the images directly into the computer. But disposable cameras allowed the students to carry cameras with them and snap pictures as they went about their lives... The students had to pick four or five shots each to put on their individual pages and write captions for their pictures. This short writing task proved to be relatively easy: it was writing about something with which they were connected. The captions were a fun break from the longer pieces of writing they were creating for the site.

—Maura Donnelly,
former adult literacy teacher at
LaGuardia Community College in
Queens, New York

I paired the novices with the more proficient students. As everyone mastered basic computer techniques, we quickly moved on to word processing and writing. Students created first drafts of their personal stories on the computer, revised and edited them, and designed texts using various font styles, sizes, and colors and clip art. Depending on the student, this process took one or many sessions. During this time, the students signed up for their own e-mail accounts and I began to e-mail their assignments to them each week.

—Maura Donnelly,
former adult literacy teacher at
LaGuardia Community College in
Queens, New York

all of the content to be complete, but enough should be finished so that you can evaluate the project effectively.

Evaluating pages is easy, because even if your pages are not “live” on the Web, you can open them with a Web browser to preview them, as noted in Chapter 4.

If you have reviewed your designs thoroughly, evaluated your resources carefully, assigned and clarified roles appropriately, and built all of your templates ahead of time, building the actual site is actually the easiest step in the entire process.

As you create files for the site, be sure to keep it all organized. Having a system for naming files is a good idea, so that you can troubleshoot when links don’t seem to work or when images seem to go missing. It’s also best not to use spaces, capital letters or symbols in file names.

Evaluating the Draft

Some of the questions you will want to ask include:

- Is the **purpose** of the site and the **intended audience** clear?
- Does the site seem **organized**?
- How easy is it to **find things** on the site?
- What **additional content or functionality** would you like to see?

The checklist at the end of this chapter includes a helpful list of frequently overlooked elements of Web page design. It’s useful to have a checklist on hand as you finalize your draft site.

In addition, it's always advisable to recruit individuals from outside the design and development team to evaluate your site.

We recommend selecting or adopting an existing Web site evaluation tool. There are many excellent examples available for free on the Web. The Web-based companion to this guide (at www.literacytech.org) keeps a reasonably up-to-date list.

At the very least, make sure you arrange time for everyone participating to review each other's work. Consider giving a related assignment, such as practicing forming questions and asking for more information about what another student contributed to the site. If students are responsible for their own pages (as in the "modular" model discussed on page 14, you may want to have students sign up for e-mail and put their e-mail address on their pages so others can make comments.

It's quite likely that students will want to make changes, so be sure to build time for implementing those changes into your schedule. As one teacher points out, "once the site was up and the students were able to take a look at it, many wanted to make changes. Some did not like their photographs and planned to bring in a new one or they wanted to add captions to their pictures."

Publishing the Site

Once your site is ready to be published on the Web for the world to see, you need to copy the pages to a **Web server**. (This step is not necessary if you are using one of the Web-based applications discussed on page 17, which publish the pages for you automatically.)

As noted earlier, a Web server is a computer connected to the Internet with software specifically designed to make Web sites accessible to others on the Web. If you have a Web server at your school or program, you'll need to contact the individual who maintains that server (often referred to as the webmaster) to see how you can get your files on the Web. If you do not have access to a server at work or school, you may need to contact a local Internet Service Provider (ISP) that will post your files on a server for a fee.

Copying your files to a Web server is usually as simple as copying files in any other situation. Figure 5.1 illustrates the basic concept. The webmaster, or whoever is responsible for the Web server you will be using, will provide the details for how you will copy your files to the Web server. You will likely need an FTP (stands for File transfer Protocol) program to do this. (There are several free FTP programs available and many Web design programs have built-in FTP software.)

The details depend on how your computer is set up and how your server is set up. Again, we strongly advise that you obtain your server space and consult the webmaster at the outset for details on how to manage files and transfer them between your machine and the server.

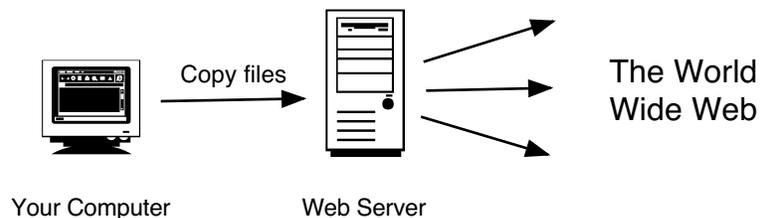


Figure 5.1

If you have been keeping your files organized in special folders (for example, you might decide to keep all of your illustrations in a folder named “images”), be sure that the copies on your Web server “mirror” this structure—in other words, if you have been using an “images” folder while developing the site, make sure that there is an “images” folder on the Web server for the copies of those files as well.

Evaluating Your Sample Pages: A Checklist

Here's a checklist of some often-overlooked elements that should probably be on every Web page.

- ✓ Be sure to name and save each document in a way that is easy for you and others to remember.
- ✓ Don't forget to title each page (using the "title" html tag: <title>This is my Title</title>) so that some identification appears on the title bar of the document. Otherwise, for example, it will appear as "untitled" when your page comes up in a search engine result. Note: Creating a title is different than saving the document with a file name.
- ✓ The Web site's name should be on each page so that folks who come to your page from somewhere other than your own home page will know where they are.
- ✓ You'll probably also want to indicate a title or topic for that particular page or section—again, so people will understand where they are on your site.
- ✓ Every page should have a link back to the home page (people hate to get "lost" on a site). Some people like to use icons (such as a little house!).
- ✓ Good rule of thumb on graphics: graphics load more quickly the smaller they are, so it's best to keep them under 30K.
- ✓ Include information as to who created the page, and contact information, so that visitors to the site can contact you if need be.
- ✓ Every page should note when it was created and/or last revised.

6 REFLECTION, SELF-EVALUATION, AND ASSESSMENT

Reflection has been shown to increase knowledge integration, so it is useful for teachers to reflect on what they do in the classroom. Learner-centered teachers involve students in this process. Student evaluations can provide a mechanism for reflection while providing a means for assessment.

One way a learner can see what she or he has accomplished is by the use of a rubric. Ideally, teachers review the rubric with the class before the project begins. In this way students can see what the project will entail, the skills they will be working on, and what is expected of them. After the project is completed, students can do a self-evaluation by filling out the rubric and answering a few reflective questions. Using the rubric, teachers can then meet with students and provide feedback on their progress. They can share what they learned from the project and discuss any next steps they might like to take. A reflection, self-evaluation, or assessment tool will not only assist the student and teacher in gauging knowledge integration, but teachers can evaluate the project's success in order to learn about ways in which the project could be enhanced next time around.

The table on the following page provides a sample rubric. This can be a useful starting point for designing your own set of questions.

Web Project Rubric

Criteria	Incomplete	Not-Yet Proficient	Partially Proficient	Proficient	Exemplary
Content	Information is incomplete or not correct. The Web page does not have a clear purpose or central theme.	Information is not always clear or correct. The theme or main idea of the Web page is more or less clear but does not relate to the purpose or theme of the project.	Information is clear and correct. The theme or main idea of the Web page is more or less clear and related to the purpose or theme of the project.	The content has accurate and useful information. The theme or main idea of the Web page is clear and related to the purpose or theme of the project.	The theme or main idea of the Web page is clear, and pages link to related information. The content has accurate and very useful information. The theme or main idea is very clear. The Web pages link to quality information.
Writing Process	Difficult to understand the main idea, many errors in spelling, grammar.	Many errors but a reader can understand the main idea.	Easy to understand, with some errors.	Clear, concise, and basically well written; still has a few errors.	Clear, concise, and well written and edited with no serious errors.
Development Process	Written sheet submitted to teacher.	Text for page entered into simple word processor or HTML-creation program.	Draft page is printed from within browser; text on page relates to original plan.	Evidence of revision of page; text relates very closely to original plan.	A reflection of development process is given to the teacher.
Web Skill	1 page.	1 page with TITLE, heading.	2 pages (or 1 page with links to other resources).	3 pages with clear order, labeling and navigation is clear; links work	3–5 pages with clear order; labeling and navigation is clear; links work. Used storyboarding.
Layout	Layout has no structure or organization.	Text broken into paragraphs and/or sections.	Uses headings; sections labeled; some formatting.	Organized and consistent; good formatting.	Appearance of the page looks professional.
Images	No images, or images that are the wrong type.	Images unrelated to page; images recycled from other pages on the Internet; images too big/small or poorly cropped or have color problems.	Images related to page/text; images were recycled from other pages on the Internet. Images too big/small or poorly cropped or have color problems.	Images are related to page/text; some images are produced by student. Most images are correct size or resolution.	Images have strong relation to page/text; some images are produced by student; images have proper size, resolution, colors, and cropping.
Group Work	Never works toward group goals or contributes. Is not sensitive to the feelings of others.	Sometimes works toward group goals and contributes. Is not often sensitive to the feelings of others.	Usually works toward group goals and contributes. Is usually sensitive to the feelings of others.	Works toward group goals and contributes. Sensitive to feelings of others. Helps identify needed changes and action.	Consistently works toward group goals; is sensitive to feelings of others and values all members. Encourages group action for change.

7 FINAL TIPS

I want to avoid giving the impression that this project was a breeze. I want to avoid generating in readers the feelings of self-doubt that I experience when I learn about innovative projects and best practices that seem to come off without a hitch. I find that that rarely happens. It is from hitches that I learn about my students and about myself as a teacher. So, while creating a Web page was not easy, it was a memorable and creative learning experience for myself and for my students. — Maura Donnelly

Over the years we have collected a number of additional tips, ideas, and potential pitfalls to watch out for:

- Planning is the most important part.
- Start simple, and then add. One thing that can kill a project is being too ambitious. Plan it so that the basics are sure to be completed, while encouraging the more ambitious ideas for later drafts.
- As experienced teachers know, even when something worked well with one class, don't be surprised if the interest level or the dynamics of the class make it a flop the next. Conversely, don't give up on the idea of doing it if it wasn't totally successful the first time around.
- Involve the rest of the program. Maybe it could be linked on the program or school's site. Other classes could read and talk with the Web developers about their experience.
- Train your peers, if possible. What happens if you leave?

We had all of the raw stock for the site: student photos, photos of class events and trips, original student writing in the form of captions, introductions, short pieces created during the year, each student's end of the year writing celebration piece, and our e-mail conversations with our key pals. We were ready to put together our site... I blocked out two computer lab sessions, or a total of three hours, to do this work. This did work with students who had all of their components ready, but it took much longer than I planned. In the end, only a few students were able to lay out their own pages. The remainder of the layout I did myself after the end of the term. Students were still handing in their chosen photographs and their final writing on the last days of class. This led to hours of extra work for me scanning photographs and laying out pages.

—Maura Donnelly,
former adult literacy teacher at
LaGuardia Community College in
Queens, New York

I would say that there are certain ingredients necessary to successfully carry out such a project: working Internet access, technical support, teaching support, a collaborative group of students who are invested in doing the project, and enough class time.

— Diana Satin, ESOL/Computer Teacher at the Jamaica Plain Community Center's Adult Learning Program in Boston, Massachusetts

I found that I was not able to follow through on all the ideas that I had about the project when we began. I had brainstormed a ton of different ideas related to an Education Web site, but I found that it was best to keep it simple, proceed one step at a time, and follow from there.

– Eric Appleton, Computer and Literacy Teacher at the Fortune Society in New York City

Students were comfortable sharing their writing with the class and participating in peer revision and critique. This environment also allowed me to truly take on the role of facilitator. I was not the keeper of all of the knowledge in the room; I became one of a rotating group of teachers.

—Maura Donnelly, former adult literacy teacher at LaGuardia Community College in Queens, New York

- Don't forget you can print out pages from the site and put them in each student's portfolio.
- It's easy for teachers to get captivated by the technical aspects. Remember to integrate the technology with the overall classroom goals. Remind students that they are working on speaking when they are working together and asking questions. Teach some new vocabulary or help with pronunciation. Make sure you have set aside enough time for peer and teacher editing if the class is writing something.
- Once the site is published, it may be useful to have students put the URL on slips of paper. They can give these to other students, classes, friends, and family so that others can see the work they put into it.
- In our experience, projects almost always take longer than expected. Don't be conservative when it comes to allocating time for each part of your project plan. Make sure there is enough slack in the schedule to accommodate unexpected circumstances.
- Finally, remember that in many cases, even when a site is finished, it's never really finished. Most Web sites are fluid, ever-changing entities, and can continue to be a catalyst for student engagement well past their official "completion" date.

“One unexpected outcome of this site is that it allowed the community of our class to continue,” one teacher notes. “This community now has a life that is not bound by our classroom nor by our student-teacher relationship. We are a group of people who struggled to create something of which we are proud and that will continue to connect us.”

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Additional resources and links can be found at:
<http://www.literacytech.org>