

**LIDA  
WORKSHOP  
MAY 24 2004**

LIBRARIES IN THE DIGITAL AGE 2004:  
HUMAN INFORMATION BEHAVIOUR AND  
COMPETENCIES FOR DIGITAL LIBRARIES

# Website Design and Evaluation Workshop

JOANN JACOBY AND LYNNE RUDASILL

# **Lida 2004 – Website Design and Evaluation Workshop**

---

Room 100- Main Library -MC-522  
University of Illinois at Urbana-Champaign, Champaign, IL, USA, 61801  
Phone 001.217.333.2305 • Fax 001.217.333.2214  
E-mail: [jacoby@uiuc.edu](mailto:jacoby@uiuc.edu), [rudasill@uiuc.edu](mailto:rudasill@uiuc.edu)

---

# Table of Contents

<b>CHAPTER 1</b>		<b>CHAPTER 6</b>	
<b>Introduction – Why Bother</b>	<b>1</b>	<b>Usability Testing</b>	<b>15</b>
<b>CHAPTER 2</b>		<b>CHAPTER 7</b>	
<b>Getting Started for the Design</b>	<b>4</b>	<b>Making your Design Accessible</b>	<b>19</b>
<b>CHAPTER 3</b>		<b>CHAPTER 8</b>	
<b>The Card Sort Technique</b>	<b>7</b>	<b>Website Assessment</b>	<b>21</b>
<b>CHAPTER 4</b>		<b>BIBLIOGRAPHY</b>	
<b>Site Architecture</b>	<b>10</b>	<b>Bibliography</b>	<b>24</b>
<b>CHAPTER 5</b>		<b>NOTES</b>	
<b>Focus Groups</b>	<b>12</b>		

---

## Introduction: Why bother?

*“A library is a growing organism.” – S.R. Ranganathan’s Fifth Law of Librarianship*

*“Use technology intelligently to enhance service.” – Gorman’s Third Law of Modern Librarianship*

W

hy do we worry about designing websites with the user in mind? Traditionally, librarians have set about the task of organizing information for their own purposes, rather than the purpose of the user. Until the advent of the electronic age, we were the keepers of the keys as well as the creators of the locks. In teaching students about the intricacies of the organization of knowledge, one can use an analogy to the legend of Ariadne. Her father, King Minos, created the great labyrinth and placed the ferocious Minotaur within it. When Theseus was tasked with the destruction of the fabled beast, Ariadne provided him with the string that enabled him to find his way back out of the maze. If we compare this story to the modern electronic library, an electrified Ariadne stands at the entrance to the maze and, in place of string, provides the information seeker with the fiber optic cable and the routers necessary to reach the information goal and return with something useful.

What are the reasons for designing websites with the user in mind? Several very good reasons might be:

- To provide more seamless access to the resources of a library.
  - To take advantage of the most current technology in the field.
  - To serve as a public relations tool for the institution.
-

There are many more, but these seem to be the most common ideas behind website design.

Thirty years ago some people were already developing theories concerning how advances in information technology might provide opportunities to inform users in new and different ways. The first versions of the human-computer interface were text driven and targeted at the expert scholar. The development of the graphical interface made it possible for the inexperienced user to seek out information in ways the pioneers of the Internet had only hoped for. Although we are not perfect in all of our assumptions, many opportunities exist today that allow us to develop the human-computer interface to the advantage of the user. In designing our new web pages we can pull from many theoretical areas – Human-Computer Interface theory, subject analysis, user interface design and website usability models. In order to reach our users we employ card sorting techniques, focus groups, usability testing and user surveys as well as transaction log analysis. In creating our site we have to keep in mind the skills, interests, and abilities of our users. A well organized, visually interesting, and useful site is our goal. To achieve this goal we must keep all of these factors in mind.

In the chapters that follow we will explore the experiences necessary for the development of a website targeted at meeting your users' needs. These processes have proven to be the most efficient and cost-effective ways to design for your users. In the first chapter, we will look at the development of a team, a rationale, and a strategy for creating your pages, or re-creating pages that already exist. Next we will explore the concepts of the card sort technique and provide some hands-on experience in the process. The following chapter discusses the possible site structure. Once we know the information we want presented on the site it is time to begin the creative process. Issues to consider in this phase include a comprehensive analysis of needs for both the site architecture and the user, and the creation of mockup sites to provide a framework from which to work. Focus groups in the development of web pages are discussed in chapter four. We will look at the requirements for adequate feedback from the user community as another way in which the users can be brought into the process of site creation. Once a template exists for the information we wish to present, the practice of usability testing will be addressed. How is this accomplished? Who should be involved? How are usability tasks defined? A template for usability testing is also provided. Next we will discuss the topic of accessible design. Two issues involved in this discussion are hardware compatibility and designing for users with disabilities. Finally, a website should be a dynamic tool, and as such it needs to be explored and re-worked on a regular basis to take advantage of technological advances, and user desires. The tools that are available for evaluating your site in an ongoing manner will be discussed and some suggestions for future projects will be described.

The workbook is structured to provide you with some basic information and some of the tools you might need to accomplish your goals. Feel free to reformat the forms that accompany various chapters of this workbook for your own project. A comprehensive bibliography can be found at the end of the work. A CD-ROM with

---

copies of our PowerPoint presentation and a variety of forms and exercises is also included. In the future, if you have any questions about the material, please don't hesitate to contact the authors.

## **Getting started on the Design**

B

efore we touch the computer keyboard it is necessary to think about how our pages will be used. Several questions need to be answered. These questions are listed below. Take a few minutes to consider the questions and write down your thoughts.

- Why are you creating or re-creating this site?
  
  - If you are working on the re-design of a site, what problems have you encountered with it in the past? How do your users feel about the site?
  
  - What is the purpose of the site? Is it providing access to a special collection or an entire library?
-

- Will the pages be viewed by expert users or an inexperienced public with varying abilities? What tasks will they want to accomplish on your site?
- What kind of equipment is your public using to access your site?
- What resources do you have in the way of people, time and money to support the development?

Once you have answered these questions, you will have a much better idea of the target you seek to hit.

### *Designing Your Team*

One of the most important factors in this type of work is the development of a team. True, many individuals have the skills, resources, and talent to create very effective websites on their own. The advantage of a team approach is that it can pull the best talent into the operation and provide a larger base of support for the project. A three-member team is a common and very efficient configuration. One individual, as the team leader, marshals the resources that are necessary for success. This person finds the funding and works with administrative units and users. He or she can also serve as the general coordinator of the group, taking the lead in setting goals and channeling resources. A second member of the group should be an individual with particular technology skills. Thanks to the ease by which web pages are developed through a variety of web-authoring tools, this person does not need to be a research programmer, but someone who is willing and able to figure out the intricacies of PERL or Java or ASP. It would also be helpful to have one individual who maintains a relationship with the user group as member of the team. This might be a reference librarian, or a circulation clerk, or someone in a particularly public position who is aware of the problems faced by users of the current system. If it is necessary, more members can be added to the working group, such as a graphic designer, but keep the team a manageable size of no more than five. It is rarely useful to have more than five members if only because scheduling meetings for more than five individuals can be difficult. When you

---

are implementing some of the other steps suggested, it may be necessary to pull in additional help. The actual planning and implementation group should, however, remain small.

### *Resource Assessment*

After your team has been created, take some time to do a complete resource assessment. You will need funds for materials such as paper for card sorting, rooms to work with focus groups and for usability testing, access to computers and projectors for these processes, recording equipment, incentives for participants, possible software upgrades, and, perhaps most importantly, time. It is easy to forget to factor in the hours it will take to complete a site upgrade. Some sites can be reconstructed for as little as a few hundred euros, while others can cost many thousands.

Decide upon the schedule for the process working backward from the date you wish to have the project completed, but be flexible. There is usually some slippage due to factors outside of your control. Remember that the project is never really finished. You will receive feedback from your users. Their suggestions need to be taken into consideration. Technology will change. Resources will change. Your users are the one constant to focus upon.

### *Speaking of Users*

There has always been some controversy concerning the participation of the user group in the development of library websites. The argument against letting the user in revolves around professionalism and expertise. It is maintained that since the librarian is the organizer of information, he or she is the authority and should decide the manner by which the body of information should be parsed out to the user. This may have been an appropriate view prior to the advent of the Google search engine, but is not entirely valid at this time. We can fight the ease with which our users access information on the Internet, but most would agree this is a futile effort. The university student's behavior is not much different from that of the public library patron. Both user groups want to access the information they need with as little effort as possible. Don't we all?

The same individuals who argue against user participation in the design process frequently fear that there will be too many opinions expressed, and in an effort to accommodate all of these wishes, the site will be unorganized and inefficient. This is where our professionalism does come into play. Users are not dictating the content and structure of our sites, they are advising us. We have to be sensitive to where the bar is set, and not prejudge the results of our inquiries.

---



## The Card Sort Technique

t

he card sort technique is very useful for determining your options and defining your resources. It has been used extensively as means of organizing information in the electronic environment. This is the first real opportunity the user of the page may have to provide input for the design. Faiks and Hyland indicate, “Card sorting works well in the early stages [of web design] because it gives users an opportunity to create a proposed organization as opposed to reacting to one already in place.”(2000) The results of this technique are often surprising and occasionally very refreshing.

The purpose of the card sort technique is to discover the mental model of organization best-suited to the user. Librarians, computer scientists, doctors, and lawyers have certain mind-sets, or ways of thinking about the world around them. Sometimes we forget we are trained to think in this particular way, but our clients are not usually inculcated with this same mental framework. The card sort technique is extremely useful in setting a baseline of user understanding for the structure of your page.

Card sorting is the first opportunity you will have to understand the way in which your users’ minds work. Pay careful attention to what they are telling you. Do not go into the process with any set parameters for the number of headings preferred, or the types of resources you will have on your opening page. This mistake was made at an earlier time by one of the larger universities in the United States. Librarians determined that they did not want the number of entry points on their new website to exceed ten. After using the card sorting technique, it was discovered that users wanted about twice that number. Unfortunately, the librarians did not use all of the information provided to them by users. The result was a large number of dissatisfied patrons, a website that did not serve its purpose, and the unnecessary loss of time in revamping the website to fit the users’ desires. (Faiks and Hyland, 2000)

---

## *The Card Sort Process*

The most common procedure for the card sort technique follows.

1. All entries appearing on the webpage are written down on slips of paper or cardstock.
  2. Select the individuals you wish to use in the process. It is most desirable to have members of your target audience working on this. The number of people working on the card sort is up to your choosing. If you are doing your review of results manually, a minimum of five is suggested, but you can have as many as you can reasonably handle using a statistical analysis package.
  3. Distribute the cards to the participants with the following instructions:
    - Please sort the terms on these slips of paper into categories or groups that make sense to you.
    - The X colored slips indicate main headings we have found or used in the past on the webpage.
    - The Y colored slips indicate sub-headings we have found or used in the past.
    - We have also provided blank slips in both colors for you.
    - You may add terms, re-phrase concepts, or discard items you do not understand or that you do not see as relevant to this page.
    - After you have created your categories, and any sub-categories, please use the paperclips provided to keep your slips together.
    - Please use a separate piece of paper to note any suggestions you might have, any terms that are unfamiliar to you, and any questions that you have.
  4. Be sure to give your sorters adequate time to work through the terms, and ask questions. This can either be a group process completed in one session; a process in which individuals do their sorting and then come together to discuss results; or a process in which individuals work on the cards and simply return them to you for analysis.
  5. After you have collected the results of the card sort, careful analysis needs to be done. If your group of returns is small, your team can easily meet to go over the results. What are the most commonly suggested headings and subheadings? Have your participants developed new categories and/or eliminated old headings? Are there questions concerning the meaning of some of the vocabulary used? Lay the sorting slips out in the manner suggested by your users to get a good feel for how they would like the
-

site organized. Then use your professional judgment in pulling the various suggestions together. Try not to impose what you believe the framework should be before you look at your users' needs.

If you have a larger number of sorting returns, it might be necessary to sit down and do some statistical analysis of the results. An excellent explanation and example of statistical analysis of card sorting results can be found in the Faiks and Hyland article cited in our bibliography. (2000)

## Site Architecture

W

e have now determined the material we would like to have displayed on our site, in terms that our users can understand, and are ready to begin the creative process of web design. Again, there are several questions we need to answer about our user population. Is a "fun" site something that will work well, or is a very scholarly site preferred? How should the navigation aspects of the site be presented? Do we want things to be very straightforward and simple, or, would something more imaginative better suit our needs? How do we decide?

The first step is to define your audience. Are your users fairly sophisticated in dealing with the online world? This demographic would probably include most individuals in developed nations in the 10-30 year age bracket. These individuals have been using electronic resources for most of their lives. These are the game players, the chat room users, and the html coding groups who best understand how to navigate web pages in a variety of ways. Frequently, university faculty also fit into this group, forced to hone their skills to keep up with their students. Are you creating for an audience of public library users? In being sensitive to their needs, you might want to create very straightforward, easy to navigate pages that use color rather than graphical images to best serve their needs. Are you creating your page as a kind of public relations tool for your

---

institution? In this case you might want to include pictures of your institution and its employees to provide a welcoming design for the individual using your site.

The next step is really the fun part of web page development. Surf, surf, surf the web and then surf some more looking for pages created by institutions similar to your own. Then go off and search commercial sites and other less similar sites to see what is being done with web design. Keep a log of these sites, and refer to them when you are ready to start creating your own pages. Note what you like or don't like about these pages. Are they colorful or muted? Have graphics been included? Are there any really innovative uses of pictures, links, or drop-down menus being used? Also look at aspects you don't want for your pages. Sometimes this can also be an inspiration for the designer. While you are surfing for the look and feel of these pages, also look carefully at the architecture of the site. How do the various pages use space to highlight aspects of the site? Does the architecture of the information make sense? Finally, consider the navigational tools on the sites you are exploring. What will work best for your audience? We have included links to a variety of sites that revolve around the same theme in order for you to compare the way in which information is presented.

All of the following sites are referred to as centers for globalization studies:

- University of Indiana <http://www.indiana.edu/~global/>
- University of California, Santa Barbara <http://www.global.ucsb.edu/links/>
- University of Georgia <http://www.uga.edu/globis/>
- University of Pittsburgh <http://www.ucis.pitt.edu/main/>

The audiences for these centers are primarily students interested in international studies, and faculty working in that same area. Notice how different they are, despite that fact that they include the same basic information.

After you have settled on two or three sites that you really like, it is time to get busy creating your site. Here is where the skills of the member of your team chosen for technological ability are incredibly useful. When the team works on a mockup of the desired changes for your site, do consider the technology that your audience is using. Java applets, Flash and other elegant programming for graphic excitement slow down the speed of access for the user sitting at home and connecting to the Internet through a modem. Rather than finding your site exciting and helpful, they will find it incredibly frustrating to sit and wait for your graphics to load. Weigh the addition of graphics to your site with care. The World Wide Web is a visual medium, and the temptation to go overboard with graphics is strong. Remember that your users have to be able to access the site in order to use your resources. The less frustration they encounter in loading your page, the better.

When the general architecture of your site exists, fill in the content you have gathered from the card sorting event. If you have the time and resources, do more than one prototype. You may be surprised at the reactions of your user groups.

---

## Focus Groups

O

nce you have structured a prototype of your page, either in paper, or electronically, you are ready to run some focus groups. The development of theory surrounding the concept of focus groups dates back to the beginning of the twentieth century with the work of Bogardus, Thurstone, Merton, and Lazarsfeld. The method is particularly popular in the world of business. There are many reasons for using focus groups in designing your web pages. Bruce best articulates it in his book on Internet users. “The central problem is how can we develop systems that are able to incorporate the multiple viewpoints of the people who will use them?” (Bruce 2002) We cannot attempt to accommodate the various viewpoints until we know what they are.

The focus group process can be as simple or as elaborate as you would like it to be. The process takes advantage of hearing the ideas of interested parties in a non-threatening, casual atmosphere. There are many books and articles written about focus groups, some specifically relating to the library. The focus group has been found to be a reliable and valid method for gathering research that will enable you to react to the desires of your users.

The process consists of several steps. First, you need to determine the actual focus of your group discussions. Hopefully at this point you will have a version of the web page you are interested in mounting, that has some, but not all of the functionality of a truly robust page. That is, although you might not want to take the time and effort required to have a completed project, you do need to have a reasonable facsimile of your proposed resource. You will want to discuss the general look and feel of the page, its navigational abilities, and any pros and cons of the redesign for your users.

Next, your target group is specified. The audience for your page is the integral part of this event. Decide the specifics of the population you are interested in receiving

---

feedback from and seek out those individuals who fit your profile. Are you particularly interested in reaching experienced users, naïve users, adults or children? What kind of incentives do you have at your disposal to ensure the attendance of these people for the event? It is good to plan to have 8 to 10 individuals participate in the process. This number is likely to provide you with an adequate range of response for the issues you want to see discussed. Fewer than eight may not provide enough variance. In addition, the smaller the group is, the greater the likelihood that one individual can dominate the conversation. You are looking for a great deal of input, not just one other person's ideas. On the other hand, if your group is too large, say over fifteen, it might not be possible for everyone participating in the event to express an opinion. Although a lot depends on the skill of the moderator, your chances of developing some good data are lessened by an unmanageable number of individuals participating in the process.

The question sometimes asked is whether the members of the group should know each other or whether they should be total strangers. That is really up to you. The most important task is developing a pool of participants who will show up for the session. The member of the team working with the target population is generally the best person to gauge who will participate in a positive manner. You might want to include members of your administrative board, active readers and users of your institution, or individuals who have used your reference services before. It is not unusual, if you have the funds, to send announcements to the members of your public describing the events and asking for volunteers. This serves as a relatively effective recruitment tool, and also provides the added benefit of improving public relations and awareness of your library.

Another factor you need to consider at the outset is the venue in which the group will meet. A large oval table in comfortable surroundings is more than adequate to the task. The professional firms that engage in focus group research often have large, nicely appointed rooms with one-way mirrors through which the reactions of the participants can be gauged. This is not really necessary. Focus groups need not be limited to any specific type of facility. They can be held in a private home, a spare meeting room, or a restaurant. As you will see in the script that follows, one of the first things the good moderator does is provide the participants with information about the location of restrooms, food or drink, and other aspects of the physical environment that might become important. This is referred to as "general housekeeping" information. Usually, it is better to hold the focus group in a venue where participants can maintain their focus on the topic at hand. There should not be an overwhelming amount of noise, and the environment should not be uncomfortably cold or warm.

The most commonly debated aspect of focus group research revolves around the qualifications of the group's moderator. It is often asserted that the moderator should not be part of the planning group. On this side of the argument is the supposition that a moderator should be professionally trained to elicit responses and reactions from the participants. This individual has special skills to enable him or her to ask open-ended and probing questions to get at the heart of the matter. This description sounds a little like a reference librarian doesn't it? The moderator should not lead the responses, but elicit them. On the other hand, it is often difficult for an individual

---

unschooled in the resources that are available to focus on the difficulties inherent in navigating a website. The amount of time that might have to be invested in bringing an outside individual up to speed on the important issues of the site redesign is a matter for concern. Whether one chooses to go with an outside agent or someone from within the operation, it is important to have a moderator who is even-handed and one who gives the appearance of interest in what the group participants have to say. In order for the results of the discussion to be fruitful, discussions need to be open, wide-ranging and yet focus on the specific issues at hand. Participants need to feel that their opinions are being listened to and given equal weight.

As mentioned earlier, recruitment of volunteers is very problematic. Indeed, some people are more than happy to participate and let their views be known. Others need more encouragement and need to be shown that there is a vested interest in their participation. Coffee cups, lunch, gift certificates and a myriad of other incentives may be used to assure broad-based participation in the process. It is sometimes difficult to get administrators to understand that some expenditures need to be made in this area. We have found it useful to invite individuals to lunch in a conference room where the proposed changes to the web page can easily be viewed. In addition, it has been helpful, due to the university setting, to offer other small awards of vending cards. The team needs to make it clear to at the outset that you will wait for a certain amount of time after the scheduled event for latecomers and stick to it. This is why a small meal is useful. If one or more participants are a little late, it gives you time to spare before you begin the process.

The team should take some time in the preparation of a script that will be followed during the focus group session. This has two purposes. First, it ensures that there will be comparability between multiple sessions. Secondly, it helps the moderator keep the participants on task for the duration of the session. Questions to be posed should be very open-ended, and revolve around the aspect of the pages you are most interested in learning about. How does it look? How does it feel? Do you like the design? Does it seem useful? (A sample script used for a site redesign follows this chapter.) If you do not have the resources to video-record the event, get it audio-taped. In addition to the actual recording, another individual besides the moderator can take notes during the session. This individual can note body language, intensity of response, and reactions of individuals to suggestions posed.

After the session concludes, work as soon as possible to compile the results of the event. Schedule at least 30 minutes to debrief immediately after completion. This helps to maintain the mood of the interactions that have transpired. Yes, it is difficult to spend this much time in your day on one process, but it is very worthwhile when it is time to write up a report and assess the ideas that your participants have provided for you.

---

## Usability Testing

U

sability testing is the key to creating a site that your client can easily navigate and understand. It much like dress rehearsal when you finally get to see how your audience responds to the site you've created.

Usability testing need not be extensive. Web usability guru Jakob Nielsen (2000) has found that testing as few as five individuals will identify most of the problems with the site. He suggests testing with no more than five participants, making changes based on those tests, then testing again with a small number of users. You do, however, want to ensure that your primary user groups are represented in the group of testers that you recruit. If you are working on a university website, that means that testing with both faculty and students is ideal.

As with focus groups, you will need to provide some sort of incentive or compensation to your testers. It might be a meal, cash, or a gift certificate of some sort - whatever is most likely to attract a pool of willing participants. Aiming to recruit twice as many participants as you think you need is a good idea as there are likely to be some no-shows. Don't forget about the logistics -- where are you going to test and what equipment will you need? In addition to a workstation running the necessary browser and plug-ins, it's a good idea to have a tape recorder or video equipment. If you document the test with audio or video it allows you to concentrate on orchestrating the test rather than taking notes. Recording equipment also provides the opportunity to go back to the test to determine exactly how much time was spent on each task.

The key to usability testing is the script. Thinking carefully about the goals of your site and analyzing the tasks that people will want to accomplish when they visit your site will help you identify what to include in the test script. The usability script outline included in this booklet is organized around tasks (such as renewing a book, finding an article, or setting up an account). As the user performs these tasks, you can ask follow-up questions to find out more about why they choose certain links and how they interpret the labels on your website.

---



Encourage the participants to think aloud and follow-up with probing questions, particularly if they are doing something other than what you expected. Your goal is to find out what works and what doesn't. In particular, pay attention to *why* things don't go as expected. Also, make sure your testers understand that it is the site, not the participants, that is being tested.

Usability experts recommend a rapid analysis of the results, while the reactions of the testers are still fresh in your mind. As always, you will have to realistically assess and prioritize what problems you want to address based on your available resources. Some problems can be fixed immediately, while others can wait until the next major redesign. In some cases you may choose to accept a less than ideal feature due to technological limitations, time constraints, or design tradeoffs.

## ***Usability Question Types***

### **Opening Questions**

How many hours a day do you spend online?

Do you ever do research online? Where? How do you find your articles?

### **General questions:**

What stands out? What is the first thing you notice?

What do you like about the site? What do you hate?

### **Content questions:**

What would you like to see on this site that you've seen at other similar sites?

### **Navigation questions:**

How would you get back to home page from here?

Where would you go to find help?

### **Scenarios/tasks:**

Renew a book

Let's say you have to write a paper on ??? Find an article on this topic.

### **Follow up questions for tasks:**

Why did you select that link? Before you click, can you tell me what you expect to find there?

Is that what you expected?

Now what would you do?

---

## Usability Script Outline

### Opening Questions

### Purpose

How many hours a day do you spend online?

*Determine their level of experience*

Do you ever....

*Determine interest in the site subject, also make them feel comfortable and get them to talking*

### Tasks with Follow-Up Questions

### Purpose

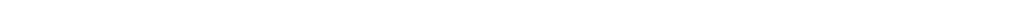
Task:

Task:

Task:

### Other Questions

### Purpose



## Making Your Design Accessible

U

Until recently, usability experts often overlooked one entire category of users, those people who depended on some sort of assistive technology to browse the web. Thankfully, that is no longer the case. Making web pages that are comprehensible to people with disabilities is not difficult and there is a wealth of resources detailing tips, techniques and tools for accessible web design available online. An excellent place to start is by looking at the Web Content Accessibility Guidelines (WCAG) <http://www.w3.org/TR/WCAG10-HTML-TECHS/>. The WCAG includes both guidelines and examples of code you can use to implement the guidelines. There are also a number of sites that will evaluate your current page on accessibility.

Following one key principle will take you a long way toward producing an accessible website: whenever possible, separate form from structure. That is, visual design elements should be separated from hierarchical structure. Perhaps the simplest example is the recommendation to use the tags `<strong>` and `<em>` rather than `<bold>` and `<italic>`. While these tags will be rendered identically by most browsers, the former indicates relative structural characteristics within a document while the latter only specifies appearance. This basic principle informs many of the rules of accessible design.

## WEB SITE DESIGN AND EVALUATION

Another component of accessible design is being mindful of how your presentation of information will be interpreted by someone using a non-standard browser. If your layout and content are primarily visual, it's going to be difficult for someone using a voice browser to use your site. To make your design accessible, you will need to provide textual descriptions of graphical and other non-text elements, such as adding the ALT attribute to your image tags or using a "D-link" to provide links to longer descriptions of information rich visual elements.

Accessible design can be easily achieved using standard html. It is probably easier to build an accessible page from the ground up than to retrofit an existing page, but even a few small adjustments can go a long way toward making your pages comprehensible to people with disabilities.

## Website Assessment

### N

ow that you have your site up and running, you can congratulate yourself for a job well done! But don't forget that web pages are like gardens, after planting they need to be tended, watered, and weeded. Gardeners often pay particularly close attention to new plantings right after first setting them out, to help them establish roots and ensure that they are thriving. A plant may be moved if it is not in the right location, if it is getting too much sun or blocking a shorter neighbor from view. It is much the same with websites. You need to make sure that everything is working harmoniously and that your users are having fruitful and productive visits. Your website is a living, breathing thing that will continue to need care and attention even after launch.

The two most commonly used methods for ongoing site assessment are user surveys and server transaction log analysis. Both methods of gathering user feedback should be employed soon after launch. It's also a good idea to set a schedule for ongoing cycle of assessment and evaluation. For instance, you may want to schedule annual surveys and semiannual analysis of the logs. After you've gone through the procedure once, it is quite easy to do it again.

### *User Surveys*

Surveys are a common way of gathering feedback about how well your site is serving the needs of your users. Surveys can also serve as an opportunity to market your new site and ensure that your target audience is aware of the new resource.

Web-based surveys are common and have a number of advantages. First of all, they are accessible to all of your users, not just those onsite. Second, you can easily include screenshots to help the user recall specific features. It's also handy that web-based surveys can write directly to a database so responses can be sorted and analyzed. But paper-based surveys are perfectly acceptable, as well. In fact, in a recent survey at the Education and Social Science Library where both web and paper-based version of a survey were available, people who were "too busy" to take the web survey changed their minds when given the option to take the paper survey, which they could clearly see was only one page long. Shorter is better, for just that reason. Surveys should have a mix of open and closed-ended questions. Questions about the ease of completing specific tasks or using a specific feature adapt readily to a Likert scale. General impressions, best/worst feature, suggestions for what to add or change lend themselves to open-ended responses. You may want to focus in on areas that emerged as problematic or somewhat contentious during the previous stages of user testing to see if they were resolved satisfactorily during the design process. You should also ask about innovations and new features that you know will please your users, to remind your team of their accomplishments and provide fodder for progress reports and budget requests.

### *Transaction Logs*

Server transaction logs can tell you many things about who is using your site and what they are doing once they get there. Although the transaction logs have many well-known limitations, they are, nevertheless, one of the few non-obtrusive methods for observing user behavior in the wild.

Look at server logs before re-design:

- Platform/browser/versions → use to set monitor resolution, page size/download time, backward compatibility, standards (W3C html, WCAG)
- IP addresses → who and where are your users?
- Phrases used in search boxes → what are people trying to do? What terms do they use to search within your site?

Look at logs again after launch:

- Most used and least used pages
- Time spent per visit
- Phrases used in search boxes → what are people trying to do? What terms do they use?

Pay particular attention to visitors who visit the site and do nothing or leave immediately – they may have given up in frustration. If your logs show that a significant percentage of visitors leave almost immediately, you may have a problem.

If you have a site search feature, look at the most commonly used search terms. This provides information about what people are trying to do and to find when they visit your site. Is there something you're not providing or that's been buried deep within the site? Search terms also let you know what words your users are using. You may want to consider using the terms your users are most comfortable with when labeling an access point or category (for example, serial, journal, periodical?). Whether or not you use them on your site, you should try to ensure that commonly used terms lead people where they want to go. IBM, for example, uses the term “notebook” but searching on “laptop” will also get you to information on their latest notebook model (Goto 2002).

Search terms also indicate what people are trying to do when they visit your site. These tasks should inform design - that is - you should make it easy for your users to navigate to the resources they need to accomplish common tasks (e.g. direct links to library hours or how to renew or search a particular resource). Looking at transaction logs can give some insight into what users themselves are trying to do, which may be different than what you think they want (or ought) to do

Looking at the most used and least used pages can also give some insight into what your users are doing on your site. Little used pages should be examined thoughtfully. Are they not being used because they are hidden, poorly designed, or simply not necessary?

Look again at who your users are. Are they local or international? On campus or off campus? Has the demographic shifted? Have you lost a targeted user group? What browsers are they using? How fast are their connections? This information can be used to plan for major re-designs in the future or to make minor adjustments now.

*Project Wrap-up?*

The feedback gathered from the user surveys and transaction log analysis most likely identified a few problem areas, some serious and some not. You will have to weigh the resources you have available against the severity of the problem and decide what to fix immediately, what can be added to the priority list for the next re-design, or what you can accept as is.

Once the last adjustments have been made, the next step is to clearly designate responsibility for ongoing maintenance of the site. Who will be responsible for creating new content? For updating the site? For reviewing the transaction logs and user comments? You may also want to set a schedule specifying how frequently the site will be updated and re-designed. Dynamic generated sites are becoming more and more common, but even they need day-to-day maintenance. No matter how well your site works when it's launched, as time passes user needs shift, new resources and technologies become available, and institutional missions evolve.



# Bibliography

## User-Centered Web Design

### *Books:*

Bruce, Harry. *The User's View of the Internet*. Scarecrow Press, Inc., 2002.

Faiks, Angi and Hyland, Nancy (2000). Gaining User Insight: A Case Study Illustrating the Card Sort Technique. *College & Research Libraries*, 61(4), 351.

Fleming, Jennifer. *Web Navigation: Designing the User Experience*. O'Reilly and Associates, 1998.

Goto, Kelly and Cottler, Emily. *Web Redesign: Workflow that Works*. New Riders, 2002

Krug, Steve. *Don't Make Me Think!: A Common Sense Approach to Web Usability*. Que, 2000

Lynch, Patrick and Horton, Sarah. *Web Style Guide*. Yale University Press, 1999. (web site companion to book located at <http://info.med.yale.edu/caim/manual/index.html>)

Nielsen, Jakob. *Designing Web Usability: The Practice of Simplicity*. New Riders, 2000.

Pearrow, Mark. *Web Site Usability Handbook*. Charles River Media, 2000.

Rosenfeld, Louis and Morville, Peter. *Information Architecture for the World Wide Web*. O'Reilly and Associates, 1998.

## WEB SITE DESIGN AND EVALUATION

Rubin, Jeffrey, *Handbook of Usability Testing*. Wiley, 1994.

Spool, Jared et al. *Web Site Usability: A Designer's Guide*. Morgan Kaufmann Publishers, 1999.

Spool, Jared, et al. *Web Site Usability: A Designer's Guide*. User Face Engineering, 1997.

### *Websites/Online Sources*

*The User is the Expert* presented by Ruth Dickstein, Abigail Loomis, and Jerilyn Veldof, Association of College and Research Libraries 9<sup>th</sup> National Conference, April 1999, <http://www.tc.umn.edu/~jveldof/ACRL99/userdesign.html>

“Web Analytics 101” from *Webtrends*  
[http://www.netiq.com/webtrends/resources/web\\_analytics\\_101/](http://www.netiq.com/webtrends/resources/web_analytics_101/)

### *Case Studies*

Usability Testing and Library Web Site Redesign at Roger Williams University,  
<http://gamma.rwu.edu/users/smcullen/usable.html>

Dickstein, Ruth and Mills, Vicki (2000). Usability Testing at the University of Arizona Library: How to Let the Users in on the Design. *Information Technology and Libraries*, 19(3), 146.

### Focus Groups

Connaway, Lynn Silipigni (1996). Focus Group Interviews: A Data Collection Methodology for Decision Making. *Library Administration and Management*, 10(4), 235.

- Edmunds, Holly (1999). *Focus Group Research Handbook*. Lincolnwood, IL: NTC Contemporary.
- Fern, Edward F. (2001). *Advanced Focus Group Research*. Thousand Oaks, CA: Sage Publications.
- Focus group kit*. (1998) Sage Publications, Contents: 1. The focus group guidebook / David L. Morgan -- 2. Planning focus groups / David L. Morgan with Alice U. Scannell -- 3. Developing questions for focus groups / Richard A. Krueger -- 4. Moderating focus groups / Richard A. Krueger -- 5. Involving community members in focus groups / Richard A. Krueger, Jean A. King -- 6. Analyzing & reporting focus group results / Richard A. Krueger.
- Glitz, Beryl (1997) The Focus Group Technique in Library Research: An Introduction. *Bulletin of the Medical Library Association*, 85(4), 385-389.
- Glitz, Beryl (1998). *Focus Groups for Libraries and Librarians*. New York: Forbes.
- Nielsen, Jakob (1997). The Use and Misuse of Focus Groups. *IEEE Software*, 14(1), 94-95.
- Young, Vicki (1993) Focus on Focus Groups. *College and Research Libraries*, 54(7), 291-394.

### Usability Testing

- Allen, Maryellen, et al (2001). "Usability Testing of Interface Design in the Virtual Library Environment," *National Online 2001 22<sup>nd</sup>* New York: NY 2001 Online Proceedings Information Today, 15-37.

Battleson, Brenda, Austin Booth, and Jane Weintrop (2001) "Usability Testing of an Academic Library Web Site: A Case Study," *Journal of Academic Librarianship* 27(3):188-198.

McGillis, Louise and Toms, Elaine G. (2001). Usability of the Academic Library Web Site: Implications for Design. *College & Research Libraries*, 62(4), 355-67.

McMullen, Susan (2001). "Usability Testing in a Library Web Site Redesign Project," *Reference Services Review* 29 (1): 7-22.

Nielsen, Jacob (1996) "Top Ten Mistakes in Web Design" at <http://www.useit.com/alertbox/9605.html>

Walbridge, Sharon (2000). Usability Testing and Libraries: The WSU Experience. *Alki*, 16(3), 23-24.

#### Site Assessment (Surveys and Transaction Logs)

Cohen, Laura B. (2003). "A Two-Tiered Model for Analyzing Library Website Usage Statistics, Part 2: Log File Analysis." *Portal: Libraries and the Academy* 3(3):517-526

Gotomedia (Kelly Goto's company)  
<http://www.gotomedia.com/> Her "Goto guides" section includes scripts and step-by-step instruction for user surveys and usability testing.

Murdock, Theresa (2002). "Revising Ready Reference Sites: Listening to Users through Server Statistics and Transaction Logs." *Reference and User Services Quarterly*, 42(2), 155-163.

Rozic-Hristovski, Anamarija, Hristovski, Dimitar, and Todorovski, Ljupco. (2002) User's Information Seeking Behavior on a Medical Library Website. *Journal of the Medical Library Association* 90(2):210-217

Uppsala University. Access Log Analyzers . <http://www.uu.se/software/analyzers/access-analyzers.html>>. A listing of available off-the shelf web log analyzers.

#### Accessibility

Centre for Educational Technology Interoperability Standards Accessibility Special Interest Group  
<http://www.cetis.ac.uk/members/accessibility/index>

Illinois Center for Instructional Technology Accessibility  
– an excellent gateway to resources and tools for creating accessible pages <http://cita.rehab.uiuc.edu/>

**NOTES**







