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A Hands-On Guide*

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Usability Testing
for Library Web Sites

A Hands-On Guide

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Usability Testing Example

The following usability test involves a fictitious library, Trihard University, to show how the process works. The interface for the Trihard University library was created after closely examining several library Web sites across the country. It includes some of the subtle and not so subtle design errors encountered when searching for a book or an article on many real library interfaces. The remainder of this chapter is written as a report of the fictitious Web team's activities. If your Web team just started with this chapter and some of the steps are unfamiliar, please take a look at the earlier chapters for more clarification.

OVERVIEW OF THE STEPS

Before our Web team got started with the actual usability test, it developed a detailed agenda of the process. This will help us remain focused and organized throughout the usability test, especially when conducting multiple tests. Below is our detailed outline showing the variety of steps involved in the beginning stages of usability testing.

form the Web team

establish goals and objectives

develop the questions and tasks

write the script

recruit participants

decide on a moderator and recorder

set up the room and coordinate times

test the test and work out kinks

give the test and record results and paths

analyze the data

make revisions to the Web site

retest

FORM THE WEB TEAM

The composition of the Web team brings together a combination of public service and technical service librarians and library staff members. The Web team also needs to have a person who has the authority to make changes to the library Web site. The dean and/or assistant dean will be ad hoc Web team members if necessary, but they will only participate in the usability testing as recorders. If possible, the Web team will solicit recorders to get buy-in from other library members about the importance of doing usability testing.

Here is the makeup of the Trihard Library Web team and our reasons for choosing these people:

technical services librarian (has authority to make changes)

information access librarian (has authority to make changes on the library interface and provides library instruction to our customers)

reference librarian (works directly with our customers and does some library instruction)

library student worker (gives us a student's perspective)

ad hoc members when available (such as the library dean or assistant dean)

ESTABLISH GOALS AND OBJECTIVES

The overall goal of the Trihard University library is to make the Web site more user-friendly to local and remote users. We know that most people access the library Web site in the dorms or off campus. In addition, Trihard University is setting up a distance education program, so we anticipate delivering more electronic resources and other services through the library interface in the

future. The usability test will check to see if customers are able to find books, articles, and Web resources from the Trihard University library home page.

> **Goal:** To have a Web site at which customers can successfully find books and articles on their particular topic.

> **Objective:** To have students successfully find where our catalog and electronic databases are located and use them correctly at least 70 percent of the time during the usability testing process.

Note that we not only have an outcome but also a measure (70 percent). This will help us when we analyze the data. This goal is only specific to this particular test and might change slightly later. For example, next time we might be looking to see if customers can find electronic journals, interlibrary loan information, or the times the library is open.

DEVELOP THE QUESTIONS AND TASKS

We have tried to develop tasks and questions that relate directly to our goals and objectives. For this particular round of questioning, the goal is to see if students are able to find where the catalog and electronic databases are and to see if the directions or information we are providing them helps students know the difference between databases and the catalog. (See figure 6.1.)

FIGURE 6.1
Objective and Tasks for First Round of Testing

Objective: When given various tasks, 70 percent of students will successfully be able to complete each task while navigating through the library's Web site.

Tasks and Questions

1. Find a book on capital punishment. (book)
2. Find two articles about violence in music videos using the electronic resource EBSCOhost. Where would you get started? (articles)
3. Find an article from the journal *Topics in Education* v51, 1994. (locating journal titles in the library)
4. Find the book *I Know Why the Caged Bird Sings*. Is it currently checked out? (circulation records)
5. What two things worked well while searching the library interface?
6. What two things could be improved?

A print preassessment survey was distributed to the patrons over a four-week period.

The Web team learned that finding books, articles, and Web resources is confusing to most students.

The tasks involve a combination of looking in the catalog and looking in the electronic databases. Items 3 and 4 are fairly complex. Questions 5 and 6 will help us get feedback on the library Web site and clarify anything that really stood out as barriers for the student answering the question. This feedback will be crucial when debriefing and analyzing the results.

WRITE THE SCRIPT

Next, we developed a generic script. (See figure 6.2.) We gave each moderator a copy and left extras in the testing room and at the reference desk.

RECRUIT PARTICIPANTS

Now that various times and a location have been secured, we can recruit participants. The target market for this particular usability test is undergraduate students who either visit the library or access library resources off campus. We decided that graduate students might be more skilled in finding books and articles, but newer students would not be as used to the library interface. The enticement was $5 an hour. It could possibly go up to $10, but since there are only five questions, we figured that a better amount was $5 for this round. We placed advertisements in the library by the computer terminals, e-mail terminals, and study carrels and in the student union. An advertisement also went in the campus newspaper to get at the potential remote campus users. We had a few disgruntled students from the preassessment survey who were also included in the list of potential participants.

The advertisement was quick and simple. (See figure 6.3.) It was pretty vague because we were concerned that the more information provided, the less likely the student would follow through. When a potential student called the reference librarian, the librarian just scheduled the person for an appropriate time for testing. We wanted to test ten people; therefore, the reference librarian kept a waiting list of ten extra students in case someone canceled or did not show up.

FIGURE 6.2
Trihard University Library's Script

(At the entrance to the room)

Hello _____. Thank you for participating in our usability study!

My name is Lisa, and I am the reference librarian at Trihard University library. I will be asking you some questions today.

I don't know if the person on the phone or who responded to your e-mail told you about why you're here.

If not, we want to make sure the library Web site is usable and you are able to find information to help you with your research. Therefore, we will be asking you some questions, which you will answer by searching our Web site.

The whole study should not take any longer than 30 to 50 minutes.

(After the person enters the room)

The two people who will be in the room during the study will be the recorder and myself. The recorder will be writing down important points you bring up while searching the library Web site. To make sure we capture all your suggestions, we need you to talk out loud. More importantly, let us know when you're stuck or something does not make sense.

As you go through our test site, some of the links are not active, and we will clue you to stop searching or to move on to the next task.

Keep in mind that we are testing the library Web site, *not* you! If you find that something does not make sense or the answer is not obvious, this is the necessary information we need to make changes. Do you have any questions?

We will start by asking you a few demographic questions. Then we'll give you a chance to look at the Web site.

FIGURE 6.3
Trihard University's Advertisement for Participants

UNDERGRADUATE STUDENTS!

Want to make $5 for answering 5 questions?

If so call Lisa, reference librarian, at 555-1620.

DECIDE ON MODERATOR AND RECORDER

The information access librarian and the reference librarian decided to take turns as the moderator. Both people felt comfortable talking to students and are used to working with the public on a daily basis. They also felt at ease probing and remaining neutral from their experiences teaching and working at the reference desk. The technical services librarian, ad hoc members, and the library student worker will take turns as the recorders.

SET UP THE ROOM AND TIMES

The room we decided on was an office with plenty of space for three people (recorder, moderator, and participant). We could have used the electronic classroom, but it was too big and impersonal. The reference room has too many people wandering around, and the participant might become distracted or feel self-conscious. We also had to be flexible with testing times because many students have hectic schedules. To account for this, we coordinated times where at least two people could be available for a certain hour, but we left plenty of time available in case someone needed to meet after 5:00.

TEST THE TEST

This is Trihard University's first usability test, so we have asked a few library staff members to participate in mock testing. We want to make sure that the moderators and recorders remain neutral throughout the usability test and that they start feeling comfortable with the generic script.

GIVE THE TEST AND RECORD RESULTS AND PATHS

Now that all the things are in place, we have completed ten rounds of usability testing. For each round of testing, the moderator wrote down the path and the recorder wrote down everything the person said. Immediately after the test, the recorder and moderator for that particular round of testing wrote down the major points they both learned. The summary in figure 6.4 was written up immediately after the moderator and recorder got together and agreed on what happened during the test.

FIGURE 6.4
Summary of One Round of Testing

Moderator: reference librarian

Recorder: library student

Participant's name: Tracy Johns

Status: sophomore

Major: psychology

Familiarity with Internet: searches it every day

Use of library Web site: once a month

1. Find a book on capital punishment.

   She found the book but had some problems. Clicked on several of our "under construction" pages before she found the catalog. Thought the catalog was hard to use with too many inner pages. A suggestion is to eliminate some of the wording on the catalog page.

2. Find two articles about violence in music videos using EBSCOhost. Where would you get started?

   Never found EBSCOhost. Gave up in frustration after clicking and finding the catalog three times. Thought that the catalog was the way to find EBSCOhost. Did not understand how to get started finding the articles. Suggestion: Home page should state "Where to Find Articles."

3. Find an article from the journal *Topics in Education* v51, 1994.

   Did not answer this question. Did not know where to start or misunderstood the concept of when to go to the catalog and when to search databases. Suggestion: Have a help link for people who need it.

4. Find the book *I Know Why the Caged Bird Sings*. Is it currently checked out?

   Did get this one because she had already found the catalog page from the previous question and the circulation information is on that page.

5. What two things worked well while searching the library interface?

   Colors/graphics are nice.
   Front page is visually pleasing.

6. What two things could be improved?

   Make words more obvious, such as "catalog" and "articles."
   Get rid of "under construction" page.

The following screen shots further illustrate some of the suggestions the participants pointed out during the usability tests.

A.

All participants started with the library's home page, shown in screen shot A. Taking a look at this Web page, some participants did not understand the difference between "library resources" and "library information." They also were not clear about exactly what might be found under "Web resources" or about the amount or detail of the information. What was very clear was that for our first usability test question, it was not clear where the catalog page was or which box to choose first.

B.
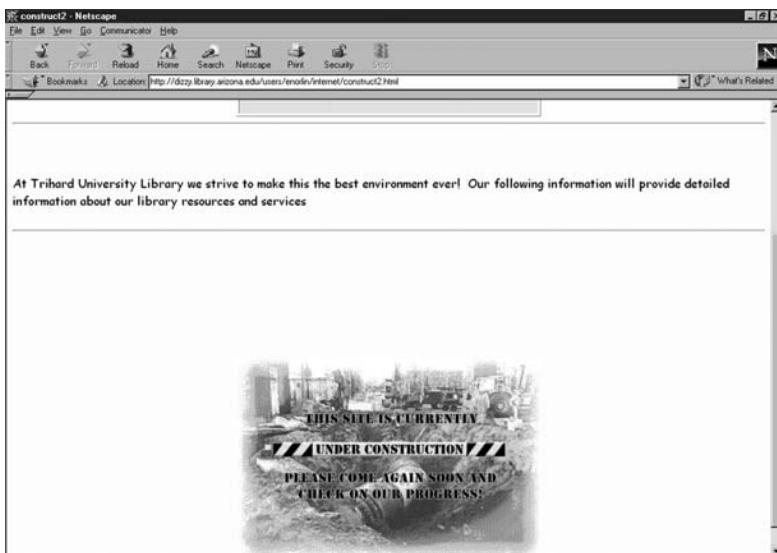
Web page B shows what the participant got after clicking on a page that is under construction.

C.

Screen shot C shows the Web page the participant got after clicking on "library resources." It also is under construction.

D.
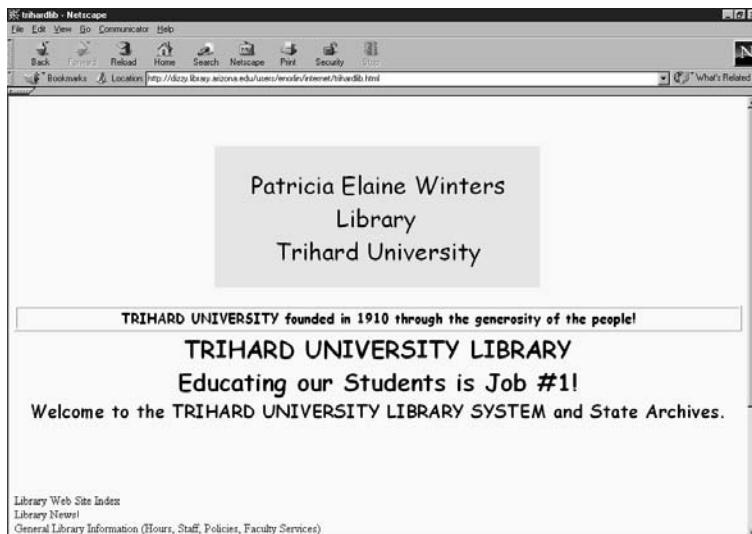
The catalog page is under "library information." When the participant clicked on "library information," screen shot D is what they initially saw. Notice that the online catalog page is not visible. The online catalog link is actually at the bottom of the page.

E.

TRIHARD UNIVERSITY Library Catalog

The Library uses WXYZ - The WXYZ Library System, for its online cataloging software. You can search using various criteria including Author, Title, Subject, Call Number, and Keyword searching to access items at the TRIHARD library. Information about the circulation status of a book is displayed along with the location and call number needed to find the item.

Using WXYZ is very simple. The commands needed to use the system are listed below with a brief example.

Author search
A=Littleton   searches for authors with last name Littleton
Title search
T=Freedom and Democracy searches for the book listed
Subject search
S=engineering searches for the subject engineering
Call number search
C=kz12 t14 searches for a book with that call #
Keyword search
W=software design searches for software and design together
Below are the commands needed to navigate within WXYZ. An example of each with the proper syntax is shown below.
Previous Screen   PS takes you back one screen
Next Screen   NS takes you forward one screen
Item Information   C shows call number, availability
From the Library computer stations, you don't need to know how to log on since it is done for you. You may, however, want to access the catalog remotely. To do so, simply click on the catalog button below and it will redirect you to our web gateway for the catalog.

NOW GO TO THE TRIHARD UNIVERSITY LIBRARY CATALOG

The participant had to scroll down to the bottom of the page to find the link to the online catalog page. (Shown in screen shot E.)

F.

TRIHARD UNIVERSITY founded in 1910 through the generosity of the people!

TRIHARD UNIVERSITY LIBRARY
Educating our Students is Job #1!
Welcome to the TRIHARD UNIVERSITY LIBRARY SYSTEM and State Archives.

Library Web Site Index
Library News!
General Library Information (Hours, Staff, Policies, Faculty Services)
Staff Development
Library Resources
Current Periodicals Room
Regional Newspapers Online
State Documents
Finding and Citing Information on the Internet
College Catalog Collections
Web Resources

**TRIHARD UNIVERSITY LIBRARY CATALOG CLICK HERE**

After the participant scrolled to the bottom of the page and clicked on the online catalog page, this extra page (screen shot F) was introduced with another link to click on at the bottom. This Web page was designed to give students an opportunity to learn how to search the catalog. However, most participants were lost.

G.
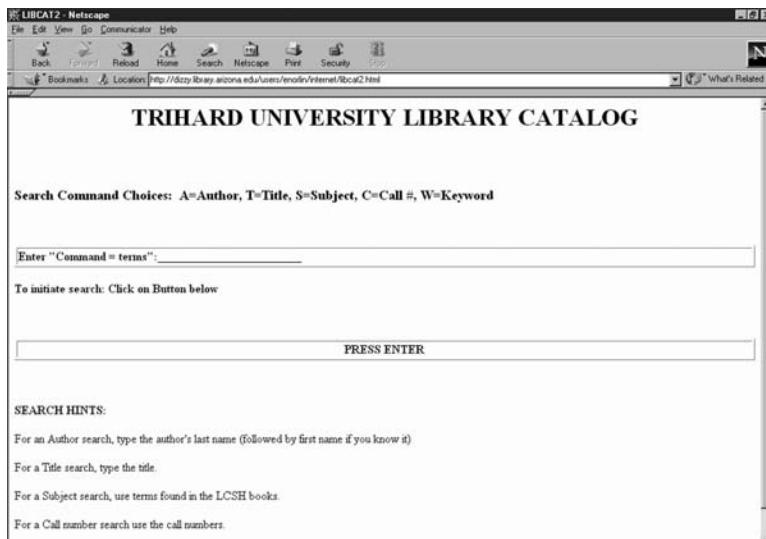
After four clicks and scrolling to the bottom of pages, the participant finally discovered where to start his or her search for the questions about finding a book or journal title in the catalog. (See screen shot G.)

H.
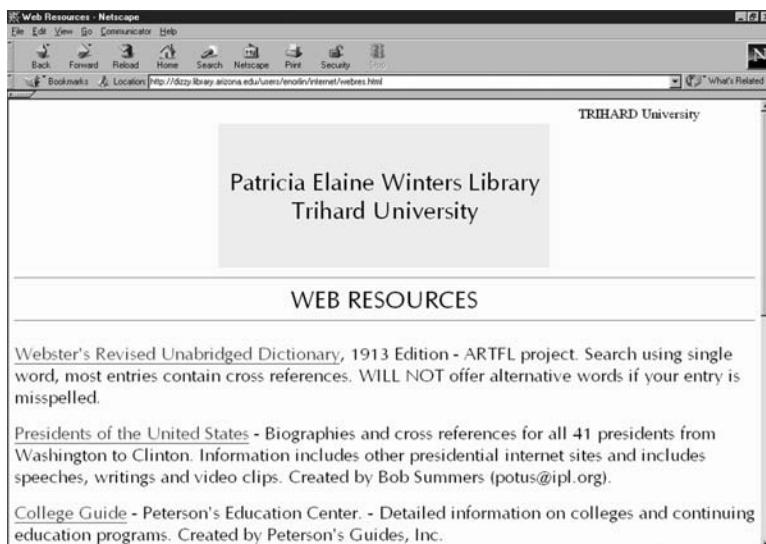
Another difficult task was to find EBSCOhost. EBSCOhost is located within the Web resources page. Screen shot H shows what the participant saw after clicking on the original link. Notice that there was no obvious link to EBSCOhost on the first page.

I.
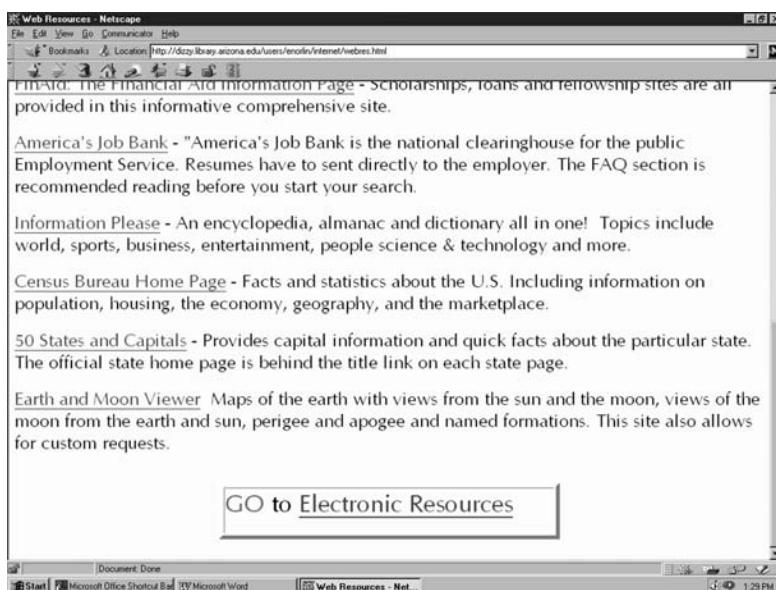
Actually there is a link to "electronic resources" at the bottom of the page. (See screen shot I.) Some participants were not sure if this would really lead to EBSCOhost. EBSCOhost is an electronic resource.

J.
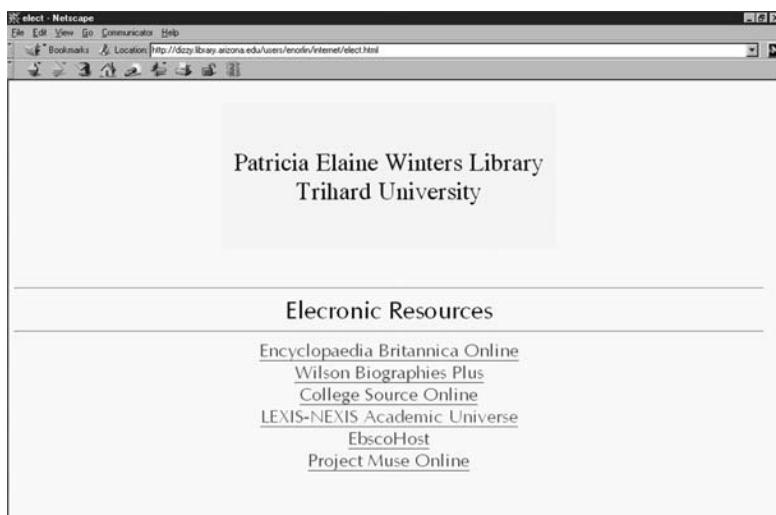
After three clicks, participants found EBSCOhost. (See screen shot J.)

ANALYZE THE DATA

After the ten rounds of testing, we listed the number of people who actually completed the task. (See figure 6.5.)

The usability test was not successful for any of the tasks. We did get some valuable feedback on where to get started in modifying the library interface. After being momentarily depressed about the low numbers, we started to look at the feedback. The last two questions and the suggestions were very helpful. Most participants, especially the ones who were not successful, had the following tips:

Make words more obvious, such as "catalog" and "articles"

Get rid of "under construction" page

Too wordy

Under construction pages were very confusing

Need to get to the catalog and articles with less clicks

Catalog page takes too many clicks to reach

Add more words in some sections to make things clearer

What's the difference between library information and library resources?

Do not understand what is contained in "Web resources"

Can't the articles and books be linked on the same page?

Need help pages

Do not put the link to catalog page at the bottom

Too much scrolling; things need to be centralized

FIGURE 6.5
Tabulation of Results

1. Find a book on capital punishment. (book) **4**

2. Find two articles about violence in music videos using EBSCOhost. Where would you get started? (articles) **2**

3. Find an article from the journal *Topics in Education* v51, 1994. (locating journal titles in the library) **1**

4. Find the book *I Know Why the Caged Bird Sings*. Is the book currently checked out? (circulation records) **4**

MAKE REVISIONS TO THE WEB SITE

After reviewing the comments and reexamining the Trihard University library's Web pages, we decided to make some changes. The technical services librarian, along with the Web team's input and input from other library staff members, completely redesigned some of the Web pages. The main emphases of the changes were

- making the online catalog page quicker to get to and more obvious
- separating the Web resources from the electronic resources
- eliminating the tasks that call for links to "under construction" pages
- making the wording less ambiguous
- providing links to the online catalog and electronic databases at more than one location

The following screen shots show what the Trihard University library interface looks like after modification.

K.
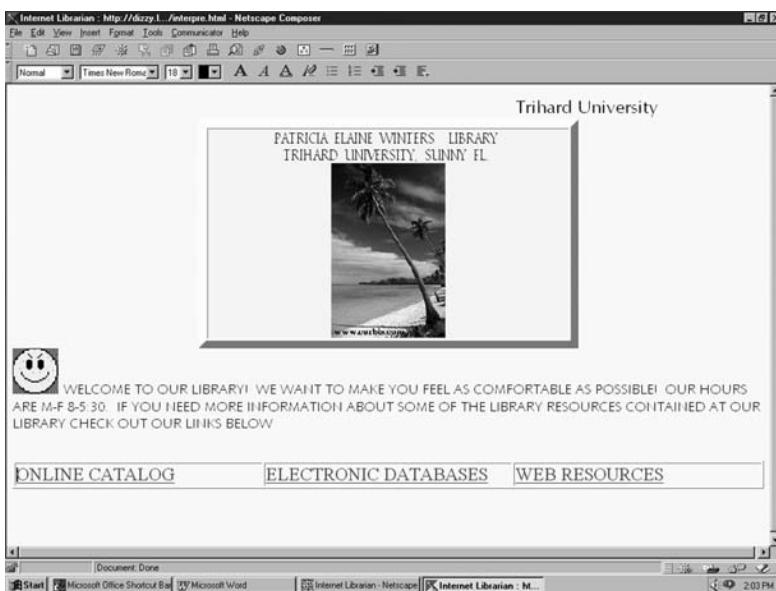
The links on the home page (screen shot K) have been changed to three from five. The online catalog is now a link on the home page. The link "electronic databases" is used to help students find EBSCOhost.

L.
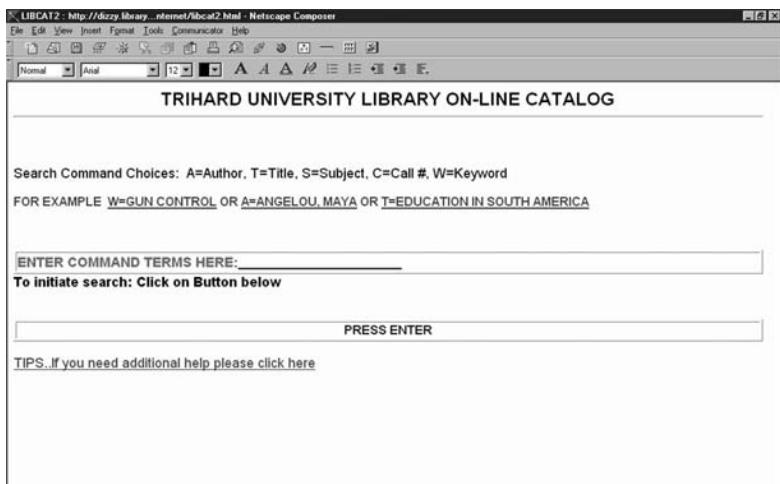
With the revision, the participant can start searching in the online catalog after one click. Screen shot L shows the search page. If the participant needs additional help, a tip line at the bottom of the page leads to additional information.

M.
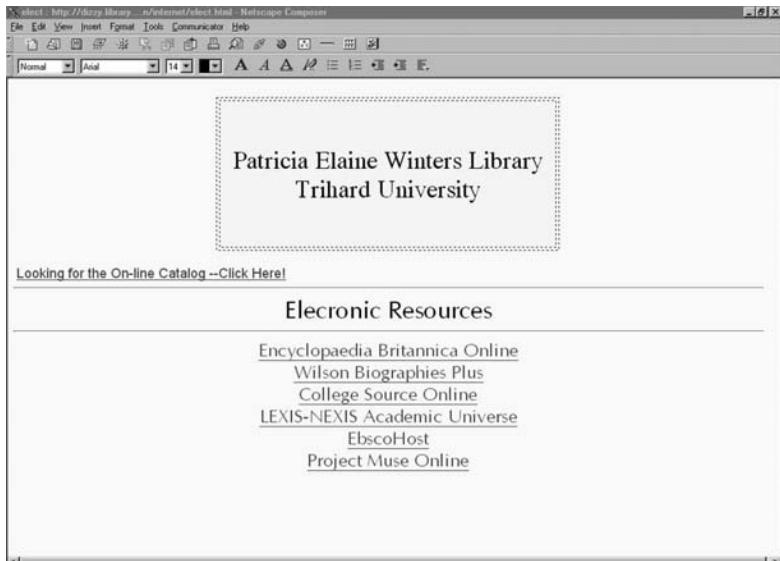
From the home page the database EBSCOhost can also be found after one click. (See screen shot M.)

RETEST

The new Trihard University library interface will not go up until we retest the changes. The library interface is not completed because the hours, location, interlibrary loan, staff phone numbers, and e-mail, etc., information is not yet located on the home page and the inner pages. We want to retest the changes and work to get the success numbers up from the previous usability test. The changes we made improve the library interface. However, we are not finished with our work. Once we are comfortable that students are able to find books, articles, and Web resources, we will start integrating general information. As we slowly redesign the Web site, we will test the progression to see if it makes sense to the users. We want to see that students understand and are able to navigate through our new changes. Will students need some extra wording on the electronic database page to explain what they will get when clicking on electronic resources? We will retest that page to make sure. We plan to let the users know on the library home page that the library is starting to make changes to the Web site. We will ask customers to let us know what they think of the changes. Through this avenue we will continue to recruit participants for future usability testing and to work out conflicts and concerns we have about our approach.

Web site usability testing need not be complicated. In this book, we have presented the more practical guidelines to Web site usability testing. This process will be of great use to library-based Web developers and designers who need a cost-effective, customer-centered method of analysis. However, reading this book and infrequently testing the usability of your Web site is not enough. After all, usability is as usability does.