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The Usability Study of the Coates Library Website: Final Report

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Coates Library

Coates Library Working Papers

Trinity University

Year 2005

The Usability Study of the Coates
Library Website: Final Report

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**The Usability Study of the Coates Library Website
at Trinity University:**

Final Report

March 2005

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The Usability Study of the Coates Library Website At Trinity University:

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Introduction

Purpose of Study

Philosophies underlying web design principles and the usability of web architecture change over time. What worked 5 years ago may be irrelevant today, and design fads quickly come and go. Therefore, it is helpful to conduct research studies in the usability and design of web pages to determine how these resources continue to perform well and what areas require revision or would benefit from improvement.

After a number of revisions and after two years in its current iteration, a usability study of the Coates Library website would give librarians and web team members the opportunity to evaluate the site. In addition, such a study would offer suggestions for changes and improvements, as well as reinforcement that the site is useful and useable.

Construction of Study Proposal for Library Web Team and IRB Approval

In November 2004, a proposal was constructed for a usability study of the library's website. This proposal was approved by the library's web team at a special meeting.

The proposal was submitted to the Institutional Review Board, and was accepted by proxy by IRB chair Paul Giolma. Two changes to the proposal were suggested but not required for IRB approval. See Appendix I for the final study proposal as approved by the IRB.

Study Moderators

The study proposal was written by Benjamin Harris, Assistant Professor and Reference/Instruction Librarian at Trinity University's Coates Library. Questions for the exercise portion of the study session were solicited from the library

faculty. The study script and paper documentation procedure were also constructed by Harris (See Appendix II and III).

Jeremy Donald, Assistant Professor and Reference Instruction Librarian, assisted in preparation for the study and created the MS Access database used to record the session data (See Appendix IV). Both participated as study moderators. Individual sessions spanned a period of 5 weeks in January and February 2005.

Associate Professor Chris Nolan, Associate Professor Bea Caraway, and Assistant Professor Barbara MacAlpine participated in the project by conducting individual study sessions. These individual sessions were scheduled give library faculty an opportunity to experience the usability study session process, allowing them insight for their evaluation of the study and its results.

Study Population Statistics

Recruitment of Study Population

Professors for the five spring 2005 sections of the Essential Computing Skills Course (CSCI 1300) accepted the library's invitation to allow students to participate in the study. The population of these courses, consisting primarily of First-Year students, included both men and women in a variety of majors. In addition, a number of upper level students participated in the study as a part of this class. A total of 104 students were enrolled in these five sections.

Students received 10 points on their grade for the class after completing a study session. 65 students completed a study session. Those students neglecting to sign up for a session, or those who missed their scheduled appointment, were given the option of receiving 5 points for their participation in an alternate research study conducted at the library

Finally, an email sent on February 16 encouraged faculty members to participate in the study. Three faculty members participated in this study. Considering this figure, their responses were recorded separately from student responses and are given qualitative treatment in this report.

Composition of Study Population

Participants were asked to complete a questionnaire offering basic information. The following statistics characterize the study population:

Age of Participants

Age 18	27
Age 19	25
Age 20	6
Age 21	3
Age 22	2
Age 23	1
Age 24	0
Age 25 or over	1
Total	65

Sex of Participants

Male	27
Female	38
Other	0
Total	65

Academic Status of Participants

First-Year	51
Second-Year	8
Third-Year	2
Fourth-Year	2
Other	2
Total	65

Participants' Major Areas of Study

Undecided	19
Business	9
Biology	3
Communication	3
Psychology	3
Accounting/Finance	2
Biochemistry	2
English	2
Accounting	1
Business/Spanish	1
Chemistry	1
Computer Science	1
Economics/Sociology	1

English	1
English/Classics	1
English/Spanish	1
History	1
History/Business	1
History/Political Sci.	1
Humanities/Spanish	1
International Studies	1
Music Education	1
Neuroscience	1
Philosophy	1
Piano/Vocal Perf.	1
Political Science	1
Political Sci/Soc.	1
Sociology	1
Spanish	1
Undecided/Math	1
Undecided/Music	1

Participants' Use of the Library Website (lib.trinity.edu)

Daily	3
Weekly	23
Monthly	20
Once a semester	11
Never	8

Participants' Use of the Web

Daily	63
Weekly	2
Monthly	0
Once a semester	0
Never	0

Participants' Use of E-mail

Daily	64
Weekly	1
Monthly	0
Once a semester	0
Never	0

Participants Receiving Library Instruction (at some point prior to the study)

Yes	35
No	30

Year of Instruction¹

2001	1
2002	0
2003	3
2004	17
2005	7

Two students with disabilities participated in the study. One student with a hearing disability was accommodated. The student was required to look at the study moderator during the oral presentation of study directions or tasks. During this session, timer was started after the student was resituated and prepared to begin working on the task.

One student with speech and physical disabilities completed the study on the library's first floor at a computer that accommodated the student's physical challenges. Aside from this consideration, the student was also allowed to complete the post-session survey at another location with the assistance of another writer.

Study Session Methodology

Study Session Process

On arriving at the library to complete the study, participants were directed to the library's Help Desk. From here, participants were escorted to the library's Reference Workroom (room 319B). To facilitate a consistent situation from one study session to the next, study moderators followed a pre-written script.

During the process of reading the script, participants were asked to (1) sign a release form documenting their consent to participate in the study and to (2) complete a pre-session survey to record personal characteristics.

¹ Participants receiving library instruction prior to the session were asked to give a date for when the instruction was received. A number could give a semester, but not all. In future studies, asking for a semester and year would be more useful. Of the participants, 8 were unable to remember the date and left this component of the survey blank. Therefore, these statistics are not accurate or useful but recorded here as a component of the study.

Moderators then conducted a “sample task,” after which participants were allowed to ask questions about the task and/or the study process in general.

After completing the sample task, participants completed seven more tasks. Each task was timed at three minutes maximum, although participants could finish before the time allotted. If the task was not completed within the three minute limit, the moderator ended the participant’s process and moved on to the next task.

When all of the tasks were completed, participants were asked to complete a post-session survey. This survey included open -ended questions designed to compile the qualitative results of the study. Upon finishing the post-session survey, moderators thanked the participants.²

Data Recording

The surveys completed by participants and the moderator’s handwritten study session notes were recorded in an access database designed for this project. In the process of recording these results, each participant was given a unique ID number. Quantitative and process data from the tasks were recorded in one table. Surveys were included in a second table. The unique participant ID and the construction of the two tables allowed study moderators to cross reference data from one table to another.

Study Session Results: Tasks

Students were asked to complete the following tasks. The first task was established as a sample task. Participants were allowed to ask questions about the task or the study in general only after the sample task.

Each of the following sections lists (a) the task itself, (b) a general process for how most participants attempted to find the answer, (c) statistics related to how participants attempted to find the answer, and (d) suggestions for changes that would improve the usability of the site in relation to this particular task.

Sample Task: *Fid the name of the liaison librarian for Biology.*

General Process

Most participants clicked on the “Library Staff Directory” in their initial attempt to answer the question. A number tried to use the scroll/retrieve options, and some used the Internet Explorer “Find” box with the word “biology” as a search term.

² See Appendix 1 for examples of the consent form, pre-session survey, task list, and post-session survey.

While a number of participants went to the “Ask a Librarian” link, few found the hot-link to the liaison librarian list in the paragraph under “Ask a Librarian by Email.”

After attempting these routes, most successful participants used the “Contact Your Librarian” link under the Faculty section of the webpage. Other participants who completed the task found the “Liaison Librarian” page under either the “About the Library” heading or the “About the Library: More” link.

Statistics

Participants completing the task	15
Participants not completing the task	50
Avg. time spent on task	1:56
Avg. clicks spent on task	5

Suggestions

1. Include liaison assignments on the “Library Staff Directory” page.
2. Break out the block text on the “Ask a Librarian” page.
3. Reconsider the use of the term “liaison librarians” as it may be considered library jargon. An option might be “subject librarian” or “subject specialists.” Highlighting the relationship between the librarian and the topic as opposed to the librarian and the department might be more useful for students, and still a functional shift for teaching faculty.

Task #1: Find out if the library owns the book Gallery of Maps in the Vatican.

General Process

Overall, students were able to answer this question one of two ways. Some went directly to Quest. Others went to “Find Books” before finding Quest.

Those who had difficulty answering the question tended to become lost on the “Find Books” page, where they immediately began scrolling into the links to other library catalogs. A considerable number of participants missed the Quest link at the top of the list (either initially or completely).

Statistics

Participants completing the task	57
Participants not completing the task	8
Avg. time spent on task	:58
Avg. clicks spent on task	3

Suggestions

1. Link "Find Books" directly into Quest, since most users will be looking to find the book at Trinity. Presenting other options could occur on a different page.
2. The hot-link for "Quest" could be changed to "Trinity University Catalog." The other hot-links are school names. Patrons may expect that as a matter of consistency, Trinity will be listed in a similar fashion.
3. The "Quest" link could be given greater focus and priority on the "Find Books" page so that scanning/scrolling patrons do not immediately miss the link.
4. Pages featuring tables should be consistent. In a two column table, links should either always be on the right or always on the left. There are a number of pages with titles or description on the left and links on the right; there are more pages with the opposing configuration. This kind of consistency will help readers situate themselves on each page without a great deal of effort.

Task #2: *Find out if the library subscribes to The Journal of Criminal Law?*

General Process

Many students failed to answer this question---either completely or correctly. The primary problem was with the title of the text. Students using "the" in their search received "no" answers in both quest and TDNet.

Statistics

Participants completing the task	33
Participants not completing the task	32
Avg. time spent on task	2:17
Avg. clicks spent on task	4

Suggestions

1. Include a brief message or alert in TDNet that if a title begins with "the," "a," "an," etc., that these should be dropped when searching.
2. Highlight or consider alternatives to the current "More Instructions" notice in Quest. Information about searching with articles appears below the fold in font

that is easily dismissed. Consider how using bold in this box is helpful, or how quick titles for each tip might refrain from featuring a block of text.

Task #3: *Find information on the library's loan periods and overdue policies for Trinity students.*

General Process

Most participants were able to navigate to the Services and Policies page in completing this task. Once there, they were not certain about their next step. If they read the descriptions of the link, they might go to access services. More often, they were not able to make the connection.

Some students went to the interlibrary loan link on the services and policies page. The word "loan" was clearly being used as a keyword here, suggesting the important and crucial role keywords and buzzwords play at the site.³

Once exposed to the "About the Library" link, a number of test subjects used the "Where is...?" link or the Site Index under the "More" link to find the answer.

Statistics

Participants completing the task	32
Participants not completing the task	33
Avg. time spent on task	2:17
Avg. clicks spent on task	6

Suggestions

1. Extend or enhance the Access Services description on the Services and Policies page.
2. Offer an Access Services link, as well as other links on the services and policies page related to specific information. For example, there could be a link for "Loan periods and overdue policies" or a link for "Alumni circulation privileges." This is a second level page, and because it is designed to offer guidance to services and policies, these services and policies should be more apparent on the second level. Listing departments when patrons expect to see services and policies may be confusing or cause misdirection.
3. Include a link to the Site Index on the home page.

³ See Novotny for discussion of this style of searching and the relationship between how user expectations of library catalogs are designed and/or changed by the use of internet search engines.

Task #4: *Find information on receiving a book from another library.*

General Process

There is no doubt that the library home page is successful in many ways, including directing patrons to interlibrary loan services. Almost every participant answered this question correctly. A larger number of test subjects used the “Borrow Items from another Library” link under the faculty corner.

There is one challenge with this question. Subjects who completed task #3 using the “Services and Policies” page may have observed the “Interlibrary Loan” link along with its description. It could be surmised that those using this route actually *learned* the route by participating in the study.

Statistics

Participants completing the task	63
Participants not completing the task	2
Avg. time spent on task	:36
Avg. clicks spent on task	2

Suggestions

1. In the future, if space is required for a new link, the “Get Stuff” link under the “Learn How to...” heading would be an option.

Task #5: *Find a list of web resources related to Business.*

General Process

A large number of participants answered this question correctly. Most went to the “Resources by Subject” link and clicked on Business before finding the websites link.

Less often, there were two other avenues taken by users. Some clicked on the “Find” heading or “More” link under the “Find...” heading and found the link for web sites. A significant number went to Course Related links, were redirected to the Economics or Marketing course guides (due to the message next to Busn). While these were not links set aside for “business,” everything about the task completion process told the participant that this was the correct answer.

Statistics

Participants completing the task	55
Participants not completing the task	10
Avg. time spent on task	:58
Avg. clicks spent on task	4

Suggestions

1. For this specific situation, remove the “see” link from the BUSN entry on the Course-Related Links list.
2. Course-related research guide creators might be diligent in their presentation to clarify that the guide is for a specific course or situation. Further, links back to other home page resources might be helpful.

Task #6: *Find a scholarly journal article on diabetes that was published in 2004.*

General Process

Methods for answering or attempting to answer this question varied more than with any other question. This stands to reason, as there are numerous ways to complete the task.

Statistics⁴

Participants completing the task	27
Participants not completing the task	36
Avg. time spent on task	2:47
Avg. clicks spent on task	7

Suggestions

1. The “Find Articles, Journals, and Newspapers” page assumes that students will know that to find articles, one will use a database. In fact, to find journals and newspapers is to find a complete text and finding articles occurs inside of journals or newspapers. Two links should be offered, one for “Find Articles” that links toward or to databases. Another link should give direction for finding journals and newspapers. Since a patron looking for an article or a number of

⁴ Data related to two participants were not fully entered into the database. These two results were removed from the aggregate data. These statistics reflect 63 of the 65 sessions.

articles on the topic will probably not browse journal and newspaper contents, separating these links will recognize the very different tasks that are being completed in either “finding articles” or “finding journals.”

Task #7: *Find out if Professor Heather Sullivan has items on electronic reserves for her classes.*

General Process

This is a complex task, and answers were not always accurate due to specific problems with links on the home page. First, students may or may not have known how to define “reserves.” Second, many did not seem to grasp the fact that electronic reserves and print reserves were listed in separate locations.

Methods for answering the question varied, primarily due to the reserves pages linked from the library’s home page.

The “Reserve Readings” link under “Find” goes to a table with links to three types of reserves.

The Reserves tab at the top of the home page goes to the print reserves list in Quest. There is an “E-Reserves” button underneath the search interface, but a link to “Tiger’s Lair” is on an equal level. The two buttons become lost. Further, one might assume that if the term “electronic reserves” is used, that a patron will assume that “e-reserves” means the same thing. It is still only an assumption.⁵ The Reserves tab at the top of pages on the second level goes to either the print reserves or the electronic reserves, but this path is inconsistent depending on the page from which the patron is linking.

Finally, the Reserves link at the bottom of the home page goes to electronic reserves with little explanation for why this selection has been made.

One point of confusion rested on the use of the word “reserve” as a noun (“Reserves”), as an adjective (“Reserve Readings”), and as a verb (“Reserve Rooms”).

Statistics

Participants completing the task	41
Participants not completing the task	24
Avg. time spent on task	1:34
Avg. clicks spent on task	5

⁵ In addition, the Tiger’s Lair link goes to Blackboard. Tiger’s Lair is the name of the University Portal, however.

Suggestions

1. Distinguish between print and electronic reserves. In fact, saying “print reserves” and “electronic reserves” would be helpful.
2. Offer a database that covers print and electronic reserves.
3. Reduce the number of home page options for finding reserves. Further, there should be a consistency in these links. Since they all go to different locations, the idea behind offering differing routes to the same information has become backward in this situation. Instead, you have the same route to different information. If patrons find reserves once, their chance of finding it again through the same route will be slim.
4. Edit the faculty corner link “Reserve Rooms.” The page itself is actually titled “Reserving Rooms.” This might be an alternative. “Room Reservation Request” is another way of keeping the same idea without using the word “Reserve” as a verb.

Study Session Results: Post-Exercise Survey

The following questions were posed to study participants after completing the study session exercise. A “summary” response is given for each, followed by a number of the participants’ quoted replies.⁶

Question 1: *What are the strongest or best characteristics of the library website?*

Summary Response

Whether their responses were due to the tasks involved in the study or were related to their past experiences using the site, most participants found the organization and layout of the library homepage to be its strongest characteristics. The subject headings used to organize links elicited consistent praise.

Quoted Responses

“The best part of the website is the fact [that] there are multiple links for the activity. The student never has a problem not being able to access something.”

“The best characteristics are the layout and the many links that can lead one to find what one is looking for. For example, one can find a book in the library in different ways.”

⁶ Quotations have been altered for clarity of meaning only. Changes are indicated within brackets (i.e., []).

"The items under the 'find' and 'learn how to...' headings seemed to provide the most direct access to information. The links are adequately descriptive."

"I like how the homepage is divided into different categories like Find or About Library--makes it easier to narrow down."

"I do like how there are list[s] to choose from. The bold tool bar makes it easy to access Quest and the databases I use regularly."

"It seems full of information. It has anything you would need. There are also many different ways to reach the destinations."

Question 2: *How helpful is the design of the library website?*

Summary Response

The responses to this question were less specific than responses to other questions in the post-study survey. As a consensus, the amount of 3rd or 4th layer information seemed to be of concern. Most participants were quick to assign blame for difficulties to their own lack of experience with the website.

Quoted Responses

"It's ok, it could be more compact, and it seems too spread out."

"The things on the main tabs [are] easy to find but anything else takes some browsing."

"It is helpful but in order to find what one is looking for it is difficult without practice."

"Some of the pages are a little confusing, and some of the wording can be a tad confusing also, but it is helpful."

"It's very helpful for the most part, but a few topics are almost hidden, such as the library policies."

"I had never done most of the tasks [...] before, but for the most part I found the questions pretty easy with the help of the websites."

"It seems to be helpful. I think that if I was to spend more time on it I would be able to better navigate around it."

Question 3: *Can you list or briefly describe problems that you've had in the past when using the library website?*

Summary Response

In discussing past challenges in using the site, most participants referred to problems with searching for information. This would most often happen when using Quest, TDNet, or the libraries databases. In a sense, their troubles occur in relation to the resources *provided through* the library website, not those created by the library.

Quoted Responses

"I don't always find books that are listed on the website in the places where they should be (I'm not sure if they're checked in or not)."

"Putting in the right search word and place to search for Quest."

"I would often go to a journal when I needed to be using a database and vice versa. Also I would search the wrong link or article because (like the loan policy question) I was looking for keywords."

"I find that the database links are hard to navigate. I always get slightly confused after I click on the database tab because then I have to figure out which database will help me[...]"

"Clutter of links, redundant links, issues accessing external journals"

"I've only mainly had problems with using Quest, because it can be tricky finding the right information because you need the right phrases or keywords."

"It can be hard to find what I want. Titles such as Quest, Reserves, and Databases aren't very self-explanatory. You have to play around with it for awhile to really figure it out."

Question 4: *What suggestions do you have for improving the library website?*

General Response

Many participants did not give an answer to the question stated. Instead, most explained that they thought the site was good in its current form. In a number of cases, participants again assigned any blame related to difficulties with the site on themselves.

The most common suggestion involved including a search function on the home page, where patrons could search the library website for specific information. This search box is already in place on the "Where Is...?" page, but few participants knew the option was available, or where to go to find such an option. In addition, some participants who found the Google search and used it during the study were unable to retrace their steps to find it a second time.

Quoted Responses

"Maybe a question & answer page for recently asked questions by students"

"Make the Quest less confusing. Organize journals by subject."

"Possibly list what the circulation desk is and does. So that when it's used as a key term, students will realize the potential value of clicking the link."

"Reduce the number of links on front page, distracts from finding the link you need."

"If you go to the "Journals" link to find journals, and you go to the "Databases" link to go to databases, it doesn't make sense to go to "Quest" for books. Some of the links are a lot more straightforward than others."

"As a freshman, I am not too familiar with the library or library website. Maybe you should make first years listen to an instructional seminar in their writing workshop or first year seminar."

"Keep in mind that most users are *not* librarians. Use more general terms, rather than more technical ones."

"None really, I'm sure everyone can find these things a lot faster than me."

"I would simplify it a bit, although I think the site is very useable and helpful as it is."

"Make the links more eye catching. The way it is right now kind of blends in with the background."

"A more clear faculty information section; an easier way to access information on reserves."

"Add a "type your question" box. Something like in Microsoft word where you will be given help to navigate your way to the info. You are trying to find."

"To me it seems like the page has too many links. If the homepage would link the user to 'find,' 'learn how to...,' 'about the library,' 'faculty corner' within these pages the categories would be more narrow/specific, it would help me."

"A few names of places could be changed. Especially access services. How would a student know to look there for info & policies?"

"A search feature would be very good. If the feature could search the site for anything you would need. Example, if you searched for hours you could find the library hours. Or if you searched for biology, you would come up with journals, names, etc."

Question 5: *Do you have any thoughts or observations related to this usability exercise?*

General Response

Few participants had comments related to the study itself. The primary criticism related to the use of the timer and the impact of the timer on the task completion process. A second criticism related to the way responding or replying to each task was handled.⁷

Quoted Responses

"I'm glad it's being done b/c it shows that people are trying to make it more user friendly."

"I'm impressed that you're taking time to try to improve it."

"It is good if you don't feel uncomfortable and it feels like you're being helpful, which is always nice."

"I have to learn how to use the library website and try to explore it more so that I can find stuff[...] quicker when I need it!"

"Seems like a good way to test the site's usability, especially for a person who rarely uses it. Use of the timer put me a little on edge, but I suppose that's necessary"

⁷ Participants had been directed to save any questions related to individual tasks until the end of the exercise portion of the session. The only exception to this rule was that participants were allowed to ask questions after the sample task. This direction was given to keep each exercise session as consistent as possible, so that "instruction" was not provided in-between tasks.

"Timing adds pressure to the exercise even though it isn't meant to do that. Besides that the exercise was ok. Just hide the timer."

"I was surprised how fast I was able to access the majority of the information I needed during the usability exercise."

"Reading from a script is a bit odd, other wise this method of research provides the moderator a good 'first hand' point of view of how typical users utilize the library website."

"Need a new mouse. Doesn't take much time--good thing."

"I think it is good that the surveys are taken so faculty will get a good idea of the strengths and weaknesses of the page and improve it."

"I think it's a good idea but it's hard to really utilize it (the study). The website can be confusing but there's really not much that can be done to improve it."

"It seemed all that was asked to me was fairly basic yet I couldn't do it all. More than anything, having librarians individually help first-years for 10-15 minutes at the beginning of the year would help most."

"It's a great idea to do this. I wish the general Trinity homepage had a similar analysis as it is a DOG."

Faculty Study Sessions

In an e-mail sent on February 16th, Trinity's teaching faculty members were encouraged to participate in the usability study of the Coates Library website.

Composition of Faculty Participants

Three teaching faculty members participated in the study. A fourth individual made an appointment but was unable to attend or complete the session. A fifth individual chose to offer informal qualitative comments without participating in the study itself.

No changes were made to the script, questions, or documents used in the study. While the primary patrons at the Coates Library are students, it is assumed that if faculty, staff, and administrators can complete the tasks asked of student participants, they will be able to locate and find components of the site designed for other library patrons.

In order to maintain the anonymity of faculty participants, further composition of this study population will not be offered.

Tasks

All three faculty members completed the 7 tasks and sample question within the time allotted.

Post-Exercise Survey

Overall, the faculty members who participated in the exercise like the site and its current design. A number of suggestions for improvement were made by these participants:

- Better picture of the photomontage on the homepage
- Less confusion on the “Find Books” page
- A separate page for links to other university catalogs
- Further consideration of students, staff, and faculty with disabilities when creating/recreating site design; in particular, consideration of aged/aging patrons

Summary of Suggested Changes

After the completion of this research study and after compiling data collected during the sessions, the following suggestions will be forwarded to the library's web team for further consideration. While alternative suggestions or improvements are possible, and while this study does not consider every element or component of the sites, the following changes will enhance the usability of the library website in relation to those tasks that are most often performed or in relation to information that is most often the focus of the library's patron population:

- The “Find Articles, Journals, and Newspapers” should be split into two links, one for articles and one for journals and newspapers
- The Library Staff directory should include liaison librarian assignments.
- If possible, search tips should be including in TDNET or the “Journals” link should go to an information page before proceeding.
- The “Find Books” page should feature a primary link to Quest. Other library catalogs could be located on a third layer or de-emphasized.
- Second layer tables should be reviewed to check for consistency of links to titles and descriptions (i.e., are the links always on the left? Or the right?)
- The “Services and Policies” page should link to services and policies instead of departments. For ease, services and policies links could be

located under departmental headings (see “Find Government Documents” page as an example for using subheads).

- Returning a “Web Sites” link to the homepage may solve certain issues related to finding websites. In particular, if students come to the homepage looking for this resource and cannot easily find it, they may leave and go directly to Google. Highlighting this source may be valuable.
- Make all links related to reserve readings consistent---for example, all links to reserve materials could go to the tabled directory currently available under “Reserve Readings.”
- As always, reconsider jargon or terms that have become or appear to be understood primarily within the community of library and information professionals. Consider using the term “library catalog” instead of “Quest.” Consider “electronic reserves” instead of “e-reserves” as a link name. Consider “subject librarians” instead of “liaison librarians.”
- Edit the faculty corner link “Reserve Rooms.”

Further, in the process of conducting the study, certain issues/concerns/etc. were highlighted due to the way the site was used by participants. The following suggestions are not directly related to usability study tasks, but issues and solutions were discovered during the study session process.

- The First-Year Seminar Guide should be evaluated for use. If it is not used by First-Year Seminars or by librarians, this link should be removed.
- If two separate links are located on the same line next to the same bullet point, a consistent manner of showing that two links are present should be adopted. For example, the “Videos, CD’s, and DVD’s” link and the IMS link are separated by parenthetical markings around the link for IMS. The Cite Sources link is separated from the Use RefWorks link by a forward slash. Consistency in showing two links on the same line and bullet point (when this is necessary) would be helpful to patrons.
- The Hours page (second level of the site from the home page) is challenging for librarians, staff, and patrons. A redesign of this page might be considered.
- The addition of the Google search box on the “Where Is...?” page removes focus from other helpful information located through this link. Giving similar or greater focus to these other resources might balance the effect of including the Google logo and search box.
- The “Item Search Form” link under the faculty corner was used at times as a way to “search for an item.” Rephrasing this link for clarity might be helpful. The name of the page accessed by this link is “Item Search Request.”
- A number of participants neglected to click on the “Retrieve” button when using any of the scrolling menus that require the patron to click on “Retrieve.” As a result, patrons might select an item on a scrolling menu and not realize that they did not receive different/new results, or they stopped using the feature. Very often, the direction “Go” is used instead

and might be more helpful for patrons familiar with this strategy of searching.

- Leaving more space between links would make the site more user friendly for patrons with physical disabilities, as well as for those with physical conditions that make the task of clicking on closely spaced links challenging.

Conclusion

Suggestions for future library usability projects

After 5 sessions, during which few changes were made to the study set-up (aside from the decision not to tape record each session), a number of revisions might have been made to improve the results and quality of the study. As these possibilities were not realized until after a considerable number of participants had completed the session, the following changes were not enacted. However, it would be helpful for moderators of future studies to consider the following:

1. Timer

In remarking on the study itself during the qualitative portion of the post-session survey, a number of participants commented on the use of a timer during each task. For many participants, the timer acted as a “stopwatch” or encouraged them to hurry to find the result.

To solve this issue, a silent timer could be used in the study. In addition, a digital clock showing the passing of seconds might be used. While it would be possible to conduct the study without the use of any timer, its use is still valuable in maintaining consistent exercises and study sessions.

2. Scheduling

Inconsistent scheduling may have contributed to the performance of the participants. Morning session or evening sessions may have had a particular influence on the participant’s ability to perform. However, patrons of the library webpage will use the page at many different times of the day, and will not always be at their “best” when using the site. It is therefore helpful to include a broad range of times during a study schedule.

Still, the challenge of scheduling a large number of people (many of the first year students) should not be downplayed. In future studies, greater diligence might be enacted in reminding participants of an impending appointment.

3. Task #4

The process of answering task #4 may have been aided by participants' attempts to answer task #3. Since an interlibrary loan link is present on the "Services and Policies" page, the order of these questions may have allowed participants to begin "learning" the site. For this reason, tasks 3 and 4 might have been transposed to avoid this challenge. However, after a certain number of tasks, many participants will begin learning the site regardless of the order of the questions. The sequencing of questions in relation to other questions in a study session should be tested in differing configurations.

4. Task #5

The prompt for task #5 includes the phrase "web resources." It is possible that participants used the word "resources" as a keyword, which may have helped them locate the answer to the task through the "Resources by Subject" link. To solve this concern, the question might have been restated to include the phrase "web sites."

5. Task #6

This task asks students to find a scholarly journal article on the topic of diabetes, and that this article should have been published in 2004. There are two issues with the integrity of this task:

a. The prompt asks participants to find a "scholarly journal article." Many participants searched for journals, and it is possible that the word "journal" instead of "article" was used as a keyword for searching. To resolve this issue, the question could be restated to include the term "scholarly articles." However, students locating a book that includes a text that could be defined as a "scholarly article" would not be incorrect. This issue should be resolved during the testing phase of the study.

b. Asking students to find journal articles will require the use of a subscription database available through the library's website. Since participants are leaving the Trinity website at this point, recording the process of this task should end when the participants finds a database. Beyond this point, moderators are studying the usability of the database, or they are studying the participant's expertise in searching for journal articles. In future studies, the "answer" to this task should occur at the point when the participant has found the link to the outside source. Including the use of the outside source in study notations, while interesting, is not directly related to the usability of the library website.

Reporting

Upon completion of the study sessions, a report on the results and implications of the study was written and distributed to the library's web team. The team will use the study to make decisions related to changes and/or improvements to the site.

Further, the six sessions of Essential Computer Skills classes participating in the study received a 30-minute presentation on the findings of the research (March 9-10).

Finally, a copy of *The Usability Study of the Coates Library Website at Trinity University: Final Report, March 2005* will be placed in Trinity's Digital Commons as a working paper from the library. A follow up to the report, based on decisions made by the library's web team, will detail changes and/or improvements to the site based on the study. Other revisions unrelated to this report may also be included in the update.

Appendix I: IRB Proposal Documents

Usability Study of Trinity University's Elizabeth Huth Coates Library Website

A. Purpose and Objectives of the Study

The purpose of this study is to evaluate the design, and navigability of the current iteration of the Coates Library website (<http://lib.trinity.edu>). The primary objectives are to provide

- an analysis of the efficient availability of information required by users of the site
- an assessment of the site's intuitive design based on the ability of users to navigate the library website from its portal
- suggestions for modifications to the website resulting in improved navigability and a strengthened information architecture

The results of this study will be utilized in a number of ways:

1. The library web team will use the results of the study to suggest and make changes to the website that will improve its usability for online patrons (primarily students, faculty, and staff).
2. The library reference team will use these results to locate instruction opportunities related to the navigability of the website. Note: this is not a study of the searcher, and will not suggest deficiency in the abilities or experience of the searcher.
3. The results of this study may be shared within the library environment for purposes related to the improvement of library services for the Trinity community. The results of the study may be used in consulting members of the Instructional Technology Services staff. Any improvements or changes to the library website based on the findings of the study will be included with the library's annual report to the Vice-President of Information Resources and Administrative Affairs. No provisions will be made for the formal publication of these results.

B. Research Protocol

This study will be conducted in accordance with any and all guidelines issued by the Trinity University Institutional Review Board. Specifically, the procedure of the study will include the following:

- 1) a brief literature review of usability study guidelines for libraries
- 2) survey/interview sessions including (a) a pre-exercise survey, (b) a usability exercise, and (c) a post-exercise survey.

- (a) The pre-exercise survey will be conducted on paper and will ask questions to record the participant's academic experience, experience with the library, and initial perceptions about the library website
- (b) The usability exercise (documented on paper and with an audio recording device) will ask questions to determine the ability of the participant to navigate the site. Each question will evaluate (1) the ability of the participant to find the answer through intuitive use of the library website and (2) the time required to find the answer.
- (c) The post-exercise survey will be conducted on paper and will offer an opportunity for participants to make additional comments on the library website and/or the usability study process.

Physical Situation of Survey/Interviews

Usability surveys and interviews will be conducted in the reference workroom on the library's 3rd floor. Prior to beginning the survey/interview process, participants will be informed of their rights as research subjects and will be asked to read and sign the consent document. The survey/interview process will continue only after completion of the consent document by the participant. The survey/interview process will take no longer than one hour, and no less than 45 minutes.

Disposition of Data Containers

All notes collected during the interview (print surveys, print notes, and recorded notes) will be stored in a filing cabinet in Coates 315. The results of these notes will be recorded in Microsoft Excel and Word documents. None of the print or electronic records related to the usability survey/interview beyond the signed informed consent document will include reference or the explicit statement of the participants' names. Tape recordings taken during the usability exercise will be destroyed upon transcription.

Print and electronic records of data collected during the survey/interview process will be collected and filed as a reference for future usability study projects. Participants will be informed of the disposition of survey/interview related records in the consent document.

C. Study Population

A sample population of up to 100 Trinity University students will offer study results with an acceptable percentage variable when compared to the actual population. Such a variable is acceptable in light of the purpose of the study.

Study participants will be recruited in a number of ways including onsite solicitation at the library's help desk and the integration of the survey process in the curriculum of subject related courses. As of the submission date of this proposal, Professor Pat Semmes and Professor Lyn Belisle have accepted an invitation to integrate the study to their Spring 2005 CSCI 1300 syllabus.

The study population will be comprised of First, Second, Third, and Fourth Year students in relatively equal proportion. Survey/interview sessions resulting in an unequal distribution of these four student categories will be included in the gross results, but removed from the final study results. Study participants will be removed in the order in which the survey/interview was given. Trinity faculty and staff will also be asked to participate, but results related to these groups will be included solely in the qualitative portion of the product report.

D. Confidentiality

In the raw data and in the final report, participants will only be identified by their academic year and the number of credit hours completed at Trinity University. No correlation between participants signing the informed consent document and data collected during the survey/interview process will be possible. Individuals will not be identified in the report by name or any other designation other than their academic year.

E. Subject Benefit/Risk

There are no immediate identifiable potential benefits or risks to any individuals participating in this study. The potential benefits to the Trinity community are improved navigation and usability of the library website. The potential benefits to library faculty and staff are improvements in their ability to assist current and future library patrons with a website designed for the user, one that deploys user data to make the online experience more inductive and independent in the fulfillment of their information needs.

F. Project Schedule

The completion of this study will be guided by the following tentative schedule:

December 15-January 15	<i>Physical preparations made for study</i>
January 15-March 15	<i>Survey/interviews conducted</i>
March 15-April 15	<i>Data tabulation; preparation of final reports</i>

Suggestions for changes to the library website will be submitted to the library's web team to be completed during the summer 2005 term.

G. Attachments

The following appendices are included with this proposal:

- I. Consent Form
- II. Pre-Exercise Survey
- III. Usability Exercise Questions
- IV. Post-Exercise

I: Consent form for participants in the
Usability Study of Trinity University's Elizabeth Huth Coates Library Website

We are seeking your participation in a usability study of Trinity University's library website. As a student at Trinity University, you may have some experience in using the website or you may be new to the library's online resources. This study will involve 100 people who, like yourself, have different levels of experience in using the library website.

If you agree to participate, your participation in the session will last no longer than one hour. First, you will complete a survey that gives some basic information about you and your experience at the library.

Second, you will participate in a question and answer exercise using the library website. You will be asked a series of questions and will answer the question by navigating the library website. You will be asked to explain what you are doing aloud, and these explanations will be tape recorded. The interviewer will also make notes about the process required to answer the question. **Please take note:** this is **not** a study of your ability to use the website. This is a study designed to make the website better based on how the typical user will look for information. Only the website itself is being evaluated during this exercise.

Third, you will complete a survey giving you the opportunity to make additional comments about the website or the exercise that you have just completed.

All documents related to this project will be kept on file in the library. However, it will not be possible to connect your name as it appears on this consent form to any data collected in relation to the surveys and exercises you complete as a part of this project.

Your participation will not subject you to any physical risk or pain. You may be assured that any reports of this research will contain only data of an anonymous or statistical nature: your name will not be used. We cannot promise that your participation in this study will be of any direct benefit to you, but we believe that the results of the study will benefit all Trinity library users. You will receive no monetary compensation for participating in this study.

Any questions you have regarding this research may be directed to the interviewer or to Chris Nolan at 999-7429. Information involving the conduct and review of research involving humans can be obtained from the Trinity University Institutional Review Board.

Your signature below indicates that you agree to participate in this research and further indicates that:

1. You have read and understand the information written above;
2. You understand that participation is voluntary and that refusal to participate will not penalize you in any way;
3. You understand that you are free to withdraw from participation at any time without penalty.

 Participant

 Date

 Interviewer

 Date

II: Pre-Exercise Survey

1. What is your age? _____

2. What is your sex? _____

2. What is your current academic status? Circle the closest answer.

First Year Second Year Third Year Fourth Year Other

3. What is your major? _____

2. How often do you use the Coates Library website? Circle the closest answer.

Daily
Weekly
Monthly
Once a semester
Never

3. How often do you use the Internet? Circle the closest answer.

Daily
Weekly
Monthly
Once a semester
Never

4. How often do you use email?

Daily
Weekly
Monthly
Once a Semester
Never

5. Have you ever attended an instruction session given by a Trinity librarian?

If yes, when did you participate in this instruction session? _____

III: Usability Exercise Questions⁸

Task One:

Does the Coates Library own the book Gallery of Maps in the Vatican by Lucio Gambi?

Task Two:

Does the library subscribe to *The Journal of Criminal Law*?

Task Three:

Find the database Lexis Nexis.

Task Four:

Can you find a list of internet resources related to Business?

Task Five:

How would you borrow a book from another library?

Task Six:

Find a journal article published in 2004 on diabetes.

Task Seven:

Does the Coates library website have a guide to doing research using government information?

Task Eight:

During what days of the year will the Coates Library be closed?

Task Nine:

Does Professor Heather Sullivan have any items on electronic reserves for her classes?

Task Ten:

What are the library's loan periods and overdue policies for Trinity students?

Task Eleven:

Who is the liaison librarian for biology?

Task Twelve:

If you are unable to find a book in the library, and the library catalog shows that the book should be available, how would you request a search for the item?

Task Thirteen:

How would you find out if your library books were overdue?

⁸ Eight of these questions will be used during the usability exercise. This selection of questions will be submitted for approval and finalized before beginning the study.

IV: Post-Exercise Survey

What are the strongest or best characteristics of the library website?

How helpful is the design of the library website?

Can you list or briefly describe problems that you've had in the past when using the library webpage?

What suggestions do you have for improving the library webpage?

Do you have any thoughts or observations related to this usability exercise?

Appendix II: Study Session Script

Introduction/Pre-Session Survey:

Thank you for participating in this study on the usability of the Coates Library website. Studies such as this allow us to understand how students and faculty navigate our website, and will allow us to make changes that might better suit the way it is used.

First, I need you to read and sign the consent form offering your consent to participate in the study.

<participant reads and signs consent form>

Thank you. Before we start the session, I need to gather some information about you. This information will not identify you personally, but will give us an idea about how First year students use the site as opposed to Third year students...or it may explain how students in certain majors use the site compared to students in a different major.

Please complete the pre-session survey.

<participant completes survey>

Thank you.

Sample Task:

As a participant in this study you will be asked to complete 8 tasks. Don't worry--we are testing the website, not you. If you are not able to complete a task in the time allotted, this reflects on the design of the site---not on your abilities as a searcher.

For the purposes of recording your process in completing each task, we ask that you speak aloud as you navigate the website. If you click on a link, you might say "I am going to click on the 'Resources by Subject' link." If you forget to speak as you are completing the task, don't worry...and don't be concerned if I make notes as you are searching. I will only speak or write to record how the website is being used.

As you are trying to answer a question you may pause to think. Feel free to think aloud. However, as the moderator of the study, I won't answer any questions until the end of this session.

Do you have any questions about the documents you've signed or the procedure of the study?

<answer any questions posed by the participant>

We're going to start with a sample task to give you an opportunity to become accustomed to this situation and so that you may ask any questions. Are you ready for the sample task?

<participant answers>

<conduct sample task>

Do you have any questions after the sample task?

<answer questions or continue>

7 Task Session:

We're ready to begin with Task 1. Task 1 and 2 may require that you read the question as well as hear the question. For these questions, I will give you a print version so that you might read and refer to the question as you answer.

<complete 8 tasks: note (1) the directions taken by the participant, (2) whether they completed the task or not, and (3) the time required to complete the task.>

Post-session script:

Now that you've completed the 7 tasks, we have a follow up survey for you to complete. This is different from the first survey, in that you may spend as much time on the questions as you wish. Do you have any questions?

<answer questions; give post-session survey>

Thank you for your participation. I will let your instructor know that you have completed the usability study.

Appendix III: Study Sessions Questions and Reporting Form⁹

Date:

Time Began:

Time Ended:

Sample TASK: Find the name of the liaison librarian for Biology.

Process:

Comments:

Time:

Please return to the library homepage. **Task #1:** Find out if the library owns the book Gallery of Maps in the Vatican.

Process:

Comments:

Time:

Please return to the library homepage. **Task #2:** Find out if the library subscribes to *The Journal of Criminal Law*?

Process:

Comments:

Time:

⁹ The reporting form has been altered for the purposes of this report.

Please return to the library homepage. **Task #3:** Find information on the library's loan periods and overdue policies for Trinity students.

Process:

Comments:

Time:

Please return to the library homepage. **Task #4:** Find information on receiving a book from another library.

Process:

Comments:

Time:

Please return to the library homepage. **Task #5:** Find a list of web resources related to Business.

Process:

Comments:

Time:

Please return to the library homepage. **Task #6:** Find a scholarly journal article on diabetes that was published in 2004.

Process:

Comments:

Time:

Please return to the library homepage. **Task #7:** Find out if Professor Heather Sullivan's has items on electronic reserves for her classes.

Process:

Comments:

Time:

Appendix IV: Screenshots of Project Databases

Reporting Form: Qualitative Data

Microsoft Access

File Edit View Insert Format Records Tools Window Help

MS Sans Serif 8 B I U

Type a question for help

Participant Surveys

Student ID		How Helpful?	it's ok, it could be more compact, it seems too spread out.
Age	18	Problems?	I have only used it one time other than this
Part Sex	m	Suggestions?	make topics clearer, and the page more compact
Academic Sta	First Year	Thoughts/Ob	It was effective, I didn't know how to do everything
Major	History/Business	Date	21-Jan-05
Library Websi	Never	Time Began	1:00 PM
Internet Use	Daily	Time Ended	3:00 PM
Email Use	Daily	Interviewer	JD
ILI?	<input type="checkbox"/>		
If so, when?			
Strongest Cha	Easy to Find books, articles, journals, etc but some things such		

Record: 1 of 64

Form View

start

Inb... Big... Desi... Usa... My ... V:\L... Usa... Part...

NUM 9:40 AM

Reporting Form: Quantitative Data

Microsoft Access

File Edit View Insert Format Records Tools Window Help

Type a question for help

MS Sans Serif 8 B I U

Session Form

Student ID 15

Task # 7

Process course related links/home/item search
request/home/faculty corner "more"/home/lib directory

Comments "would just go to the desk and ask if I couldn't find it"

Time 3:00

Number of Clicks 7

Pages Visited 5

Task Completed ☐

Time out? ☒

ID 125

Record: 120 of 520

Form View

NUM

start

Inb... Big... Desi... Usa... My ... V:\L... Usa... Ses...

9:41 AM

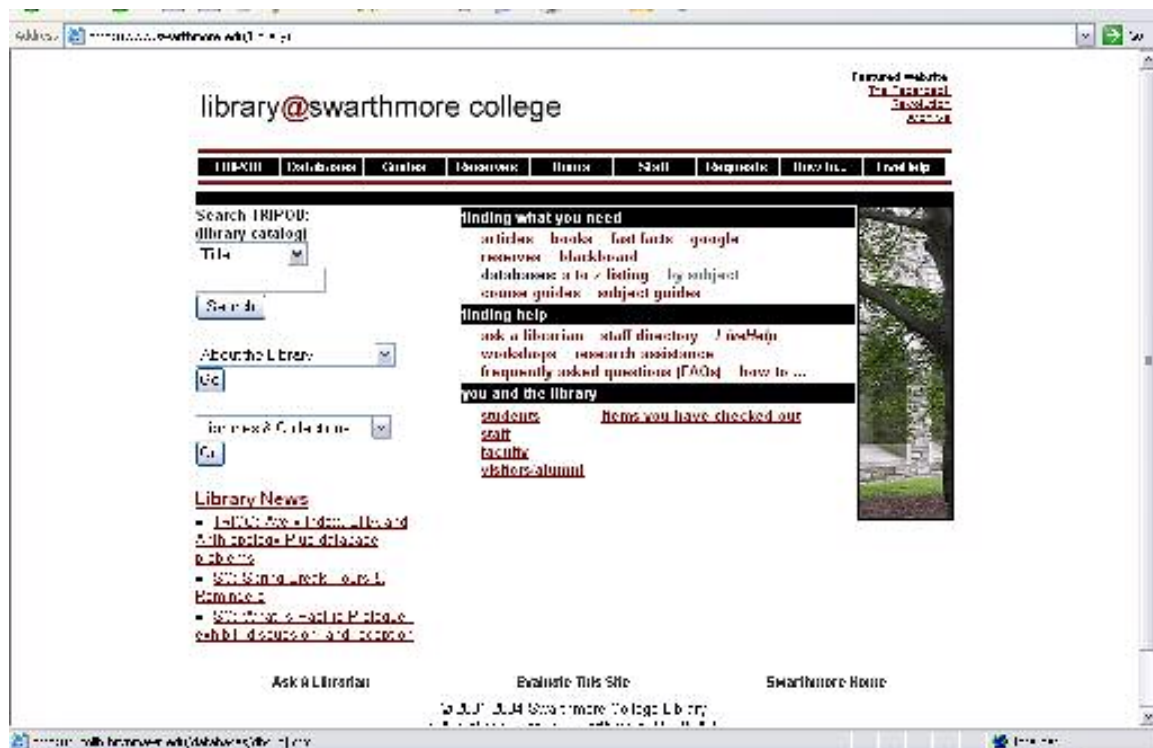
Appendix V: Visual Design of Library Websites

Since the contemporary searcher is accustomed to simple, Google-esque interfaces, they tend to be more concerned with *what* they find than the appearance of the site through which it is found. . For most students and other patrons, it is “the site,” and lacks personal connection or identification. Therefore, the visual design of the site is a concern to librarians, faculty, and administrators. For these communities, the library site is “their” site.

Design evaluation is often a consideration when substantial time and effort may be expended in making changes to web architecture or design. The following are screenshots and web addresses for a number of Oberlin Group libraries, institutions with which Trinity University is often associated. Consideration may be given to the way certain tasks are presented on the home page, or readers of this report may wish to compare the visual elements of these home pages to the current iteration of the Coates Library website.

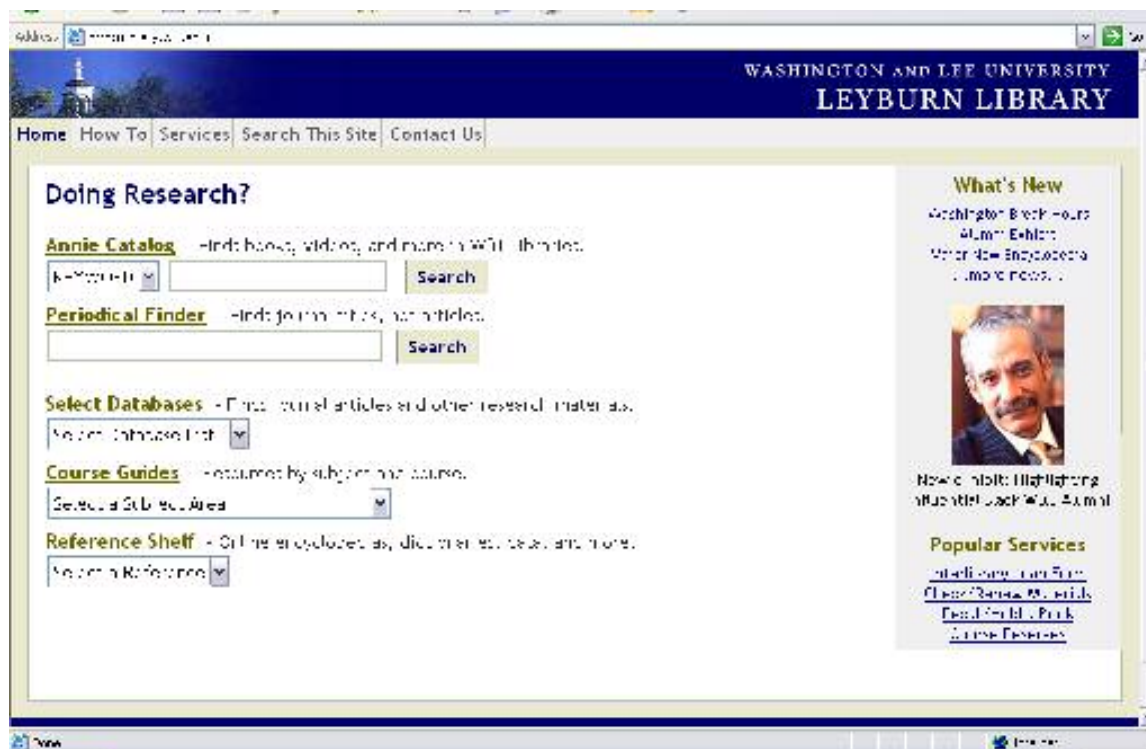
These images show the variety of ways that library home pages act as (1) portals to the library website and as (2) initial points for information literacy instruction through online methods. A number of sites included links that asked webpage users to comment on the page itself. These links may be constant for those libraries, or may be a part of a current survey or research project.

Swarthmore College:



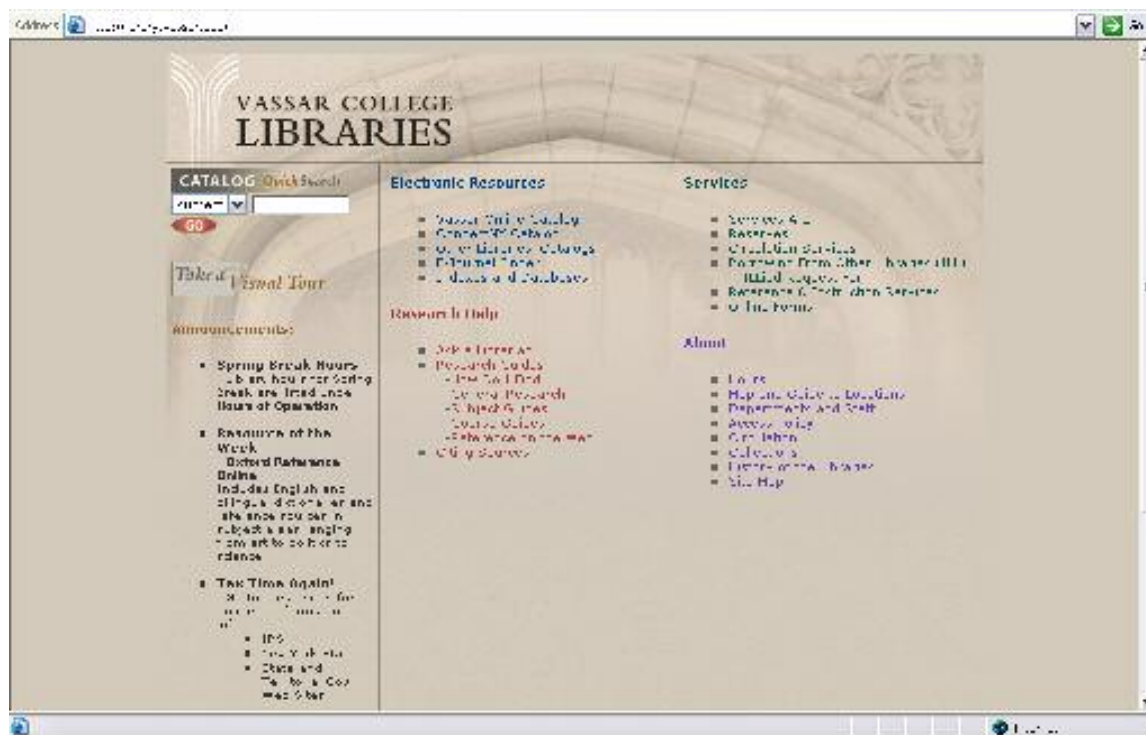
<http://www.swarthmore.edu/Library/>

Washington and Lee University:



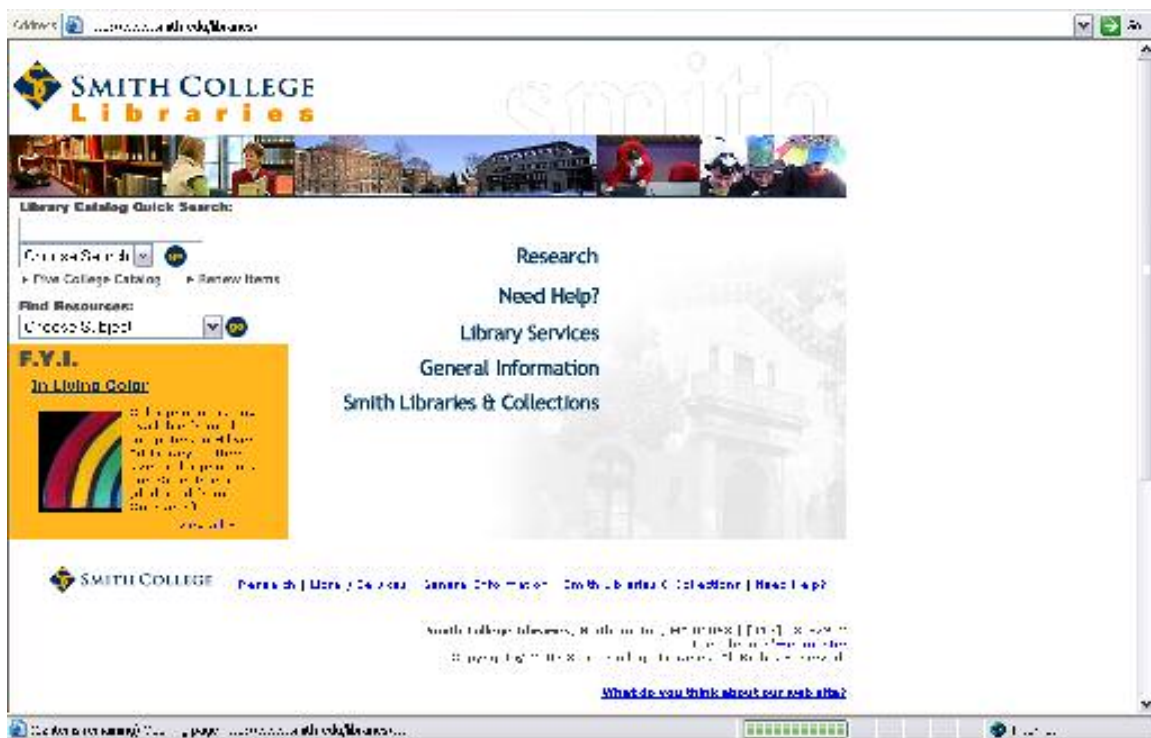
<http://library.wlu.edu/>

Vassar College:



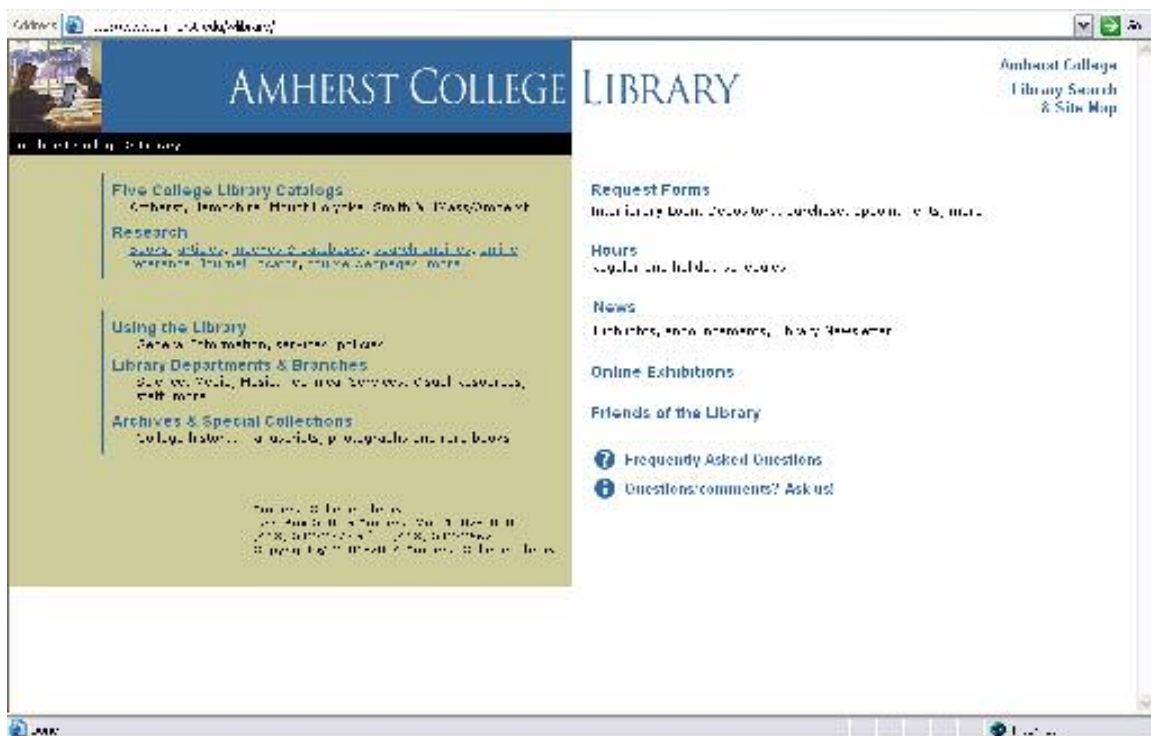
<http://library.vassar.edu/>

Smith College:



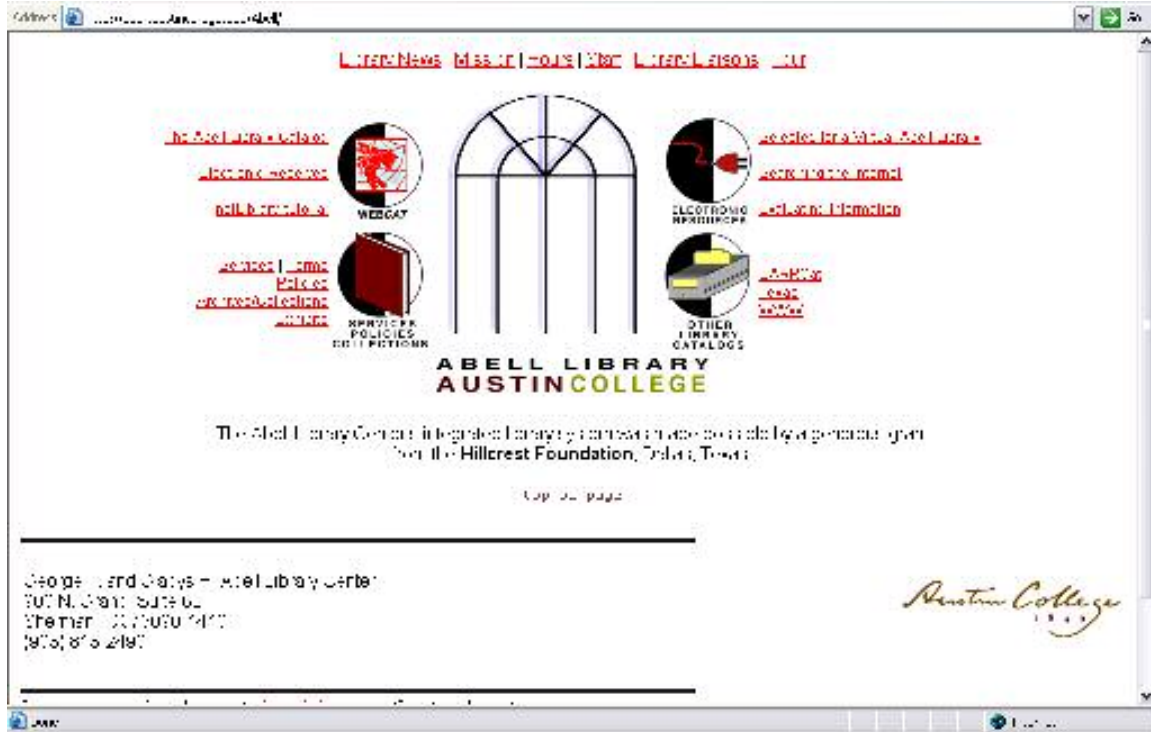
<http://www.smith.edu/libraries/>

Amherst College:



<http://www.amherst.edu/~library/>

Austin College:



<http://abell.austincollege.edu/Abell/>

Bryn Mawr College:



<http://www.brynmaur.edu/library/>

Bucknell College:



<http://www.isr.bucknell.edu/>

Dickinson College:



<http://lis.dickinson.edu/>

Davidson College:



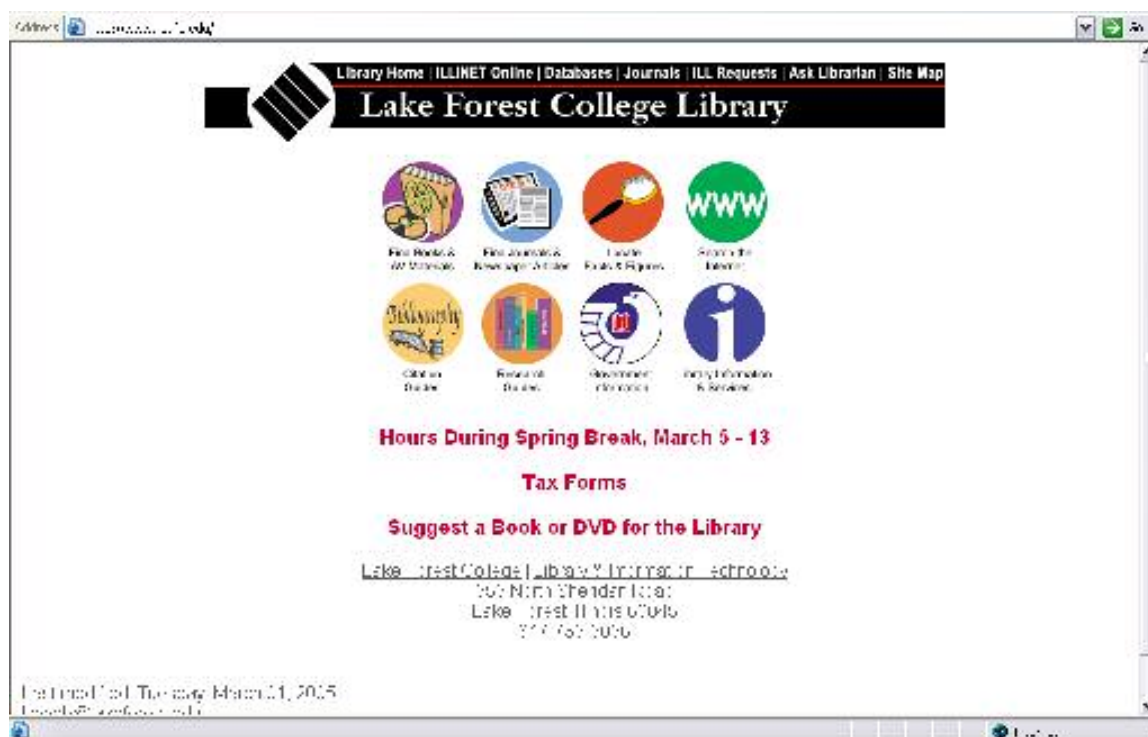
<http://www2.davidson.edu/index.asp>

Colorado College:



<http://www.coloradocollege.edu/library/>

Lake Forest College:



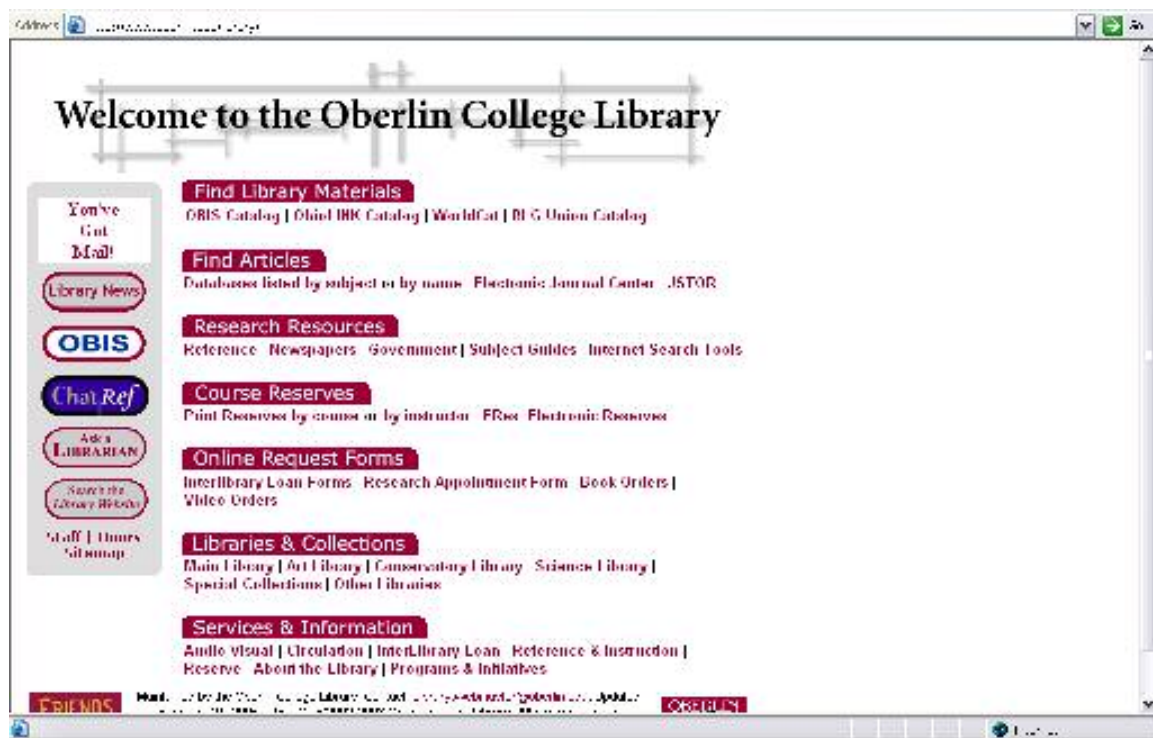
<http://www.lib.lfc.edu/>

Middlebury College:



<http://www.middlebury.edu/>

Oberlin College:



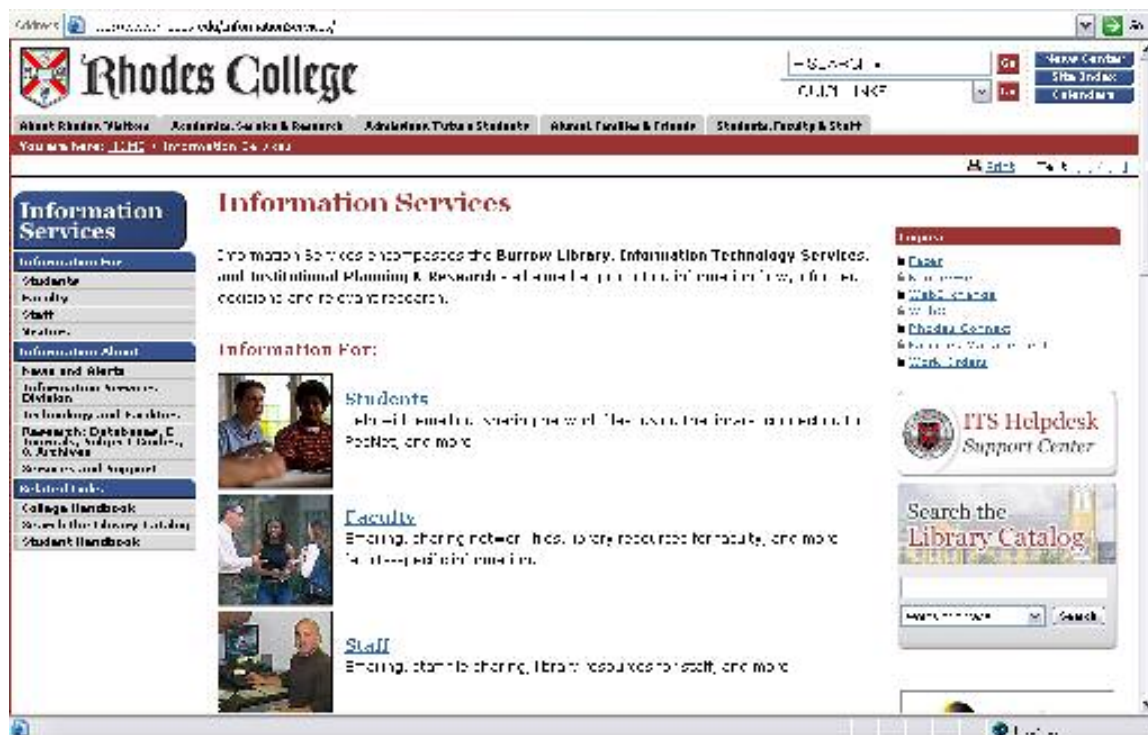
<http://www.oberlin.edu/library/>

Occidental College:



<http://departments.oxy.edu/library/>

Rhodes College:



<http://www.rhodes.edu/InformationServices/>

Rollins:



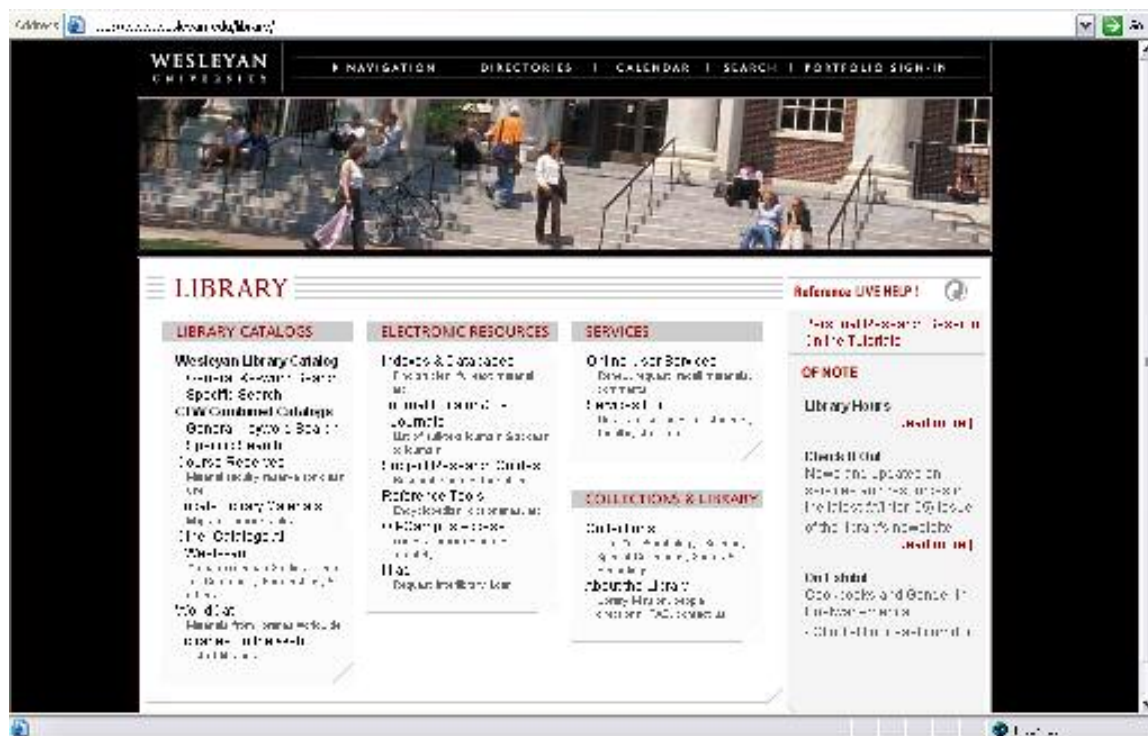
<http://www.rollins.edu/olin/index.htm>

Wheaton College:



<http://www.wheatonma.edu/library/>

Wesleyan University:



<http://www.wesleyan.edu/library/>

Appendix VI: Works Consulted

The following texts were used in preparing for and completing this study. Since information included in these texts was not cited or used directly in relation to this report, citations are considered "Works Consulted" and are presented in MLA citation format.

Augustine, Susan, and Courtney Greene. "Discovering How Students Search a Library Web Site: A Usability Case Study." College and Research

Libraries 63.4 (2002): 354-65.

"Conducting and Using Usability Tests." Usability.Gov. 2005. Dept. of Health and Human Svcs. 29 Sept. 2004 <http://usability.gov/methods/usability_testing.html>.

Hammill, Sarah J. "Usability Testing at Florida International University Libraries:

What We Learned." Electronic Journal of Academic and Special

Librarianship 4.1 (Winter 2003). <<http://southerlibrarianship.icaap.org>>.

Krueger, Janice, Ron L. Ray, and Lorrie Knight. "Applying Web Usability

Techniques to Assess Student Awareness of Library Web Resources."

Journal of Academic Librarianship 30.4 (2004): 285-293. Wilson Select

Plus. H.W. Wilson. Coates Library, Trinity U. 29 Sept. 2004

<<http://newfirstsearch.oclc.org/WebZ/FSPrefs?entityjsdetect=:javascript=true:screensize=large:sessionid=sp07sw04-60993-e6512l8t-az83il:entitypagenum=1:0>>.

Leedy, Paul D. and Jeanne Ellis Ormrod. Practical Research: Planning and

Design. 7th ed. Upper Saddle River, N.J.: Merrill Prentice Hall, 2001.

Norlin, Elaina, and CM Winters. Usability Testing for Library Websites: A Hands-

On Guide. Chicago: ALA, 2002.

Novotny, Eric. "I Don't Think I Click: A Protocol Analysis Study of Use of the Library Online Catalog in the Internet Age." College and Research Libraries 65.6 (2004): 525-37.

Tang, Rong. "Usability Testing Criteria." Unpublished outline, 23 Sept. 2004.