Mountain West Digital Library Usability Testing Project Plan

March 14, 2011

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Trisha Hansen
MWDL Intern

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Usability Testing Project Introduction

Executive Summary

The following document discusses a Web usability testing project plan for the Mountain West Digital Library. The plan was written after collaboration with Sandra McIntyre, the Utah Academic Library Consortium's Digitization Committee, and Scott Eldredge and Brian Roberts of BYU. The following outlines the background behind the project and the objectives of the project. You will then find a summary of issues concerning usability testing and digital libraries. Next, the testing plan will outline the three testing protocols that will be used. You will also find the following in the appendices: MWDL user personas, beta testers survey, think-aloud use case scenario target issues, and the working think-aloud usability test.

Background

During the 2010 fall semester, University of Utah's Marriott Library Associate Director for Information Technology Services, Kenning Arlitsch, presented on *The Future of LibrariesIs IT* to a class of MLS students at Emporia State University's Utah campus. Arlitsch stressed the need for more technically-proficient library professionals. His presentation motivated me to explore the world of IT in libraries. Subsequently Sandra McIntyre, the Program Director for the Mountain West Digital Library (MWDL), graciously created an opportunity for me to be involved with a digital library.

After collaborating with Sandra, we identified an internship opportunity with the MWDL. The focus of this internship is this individual project related to usability testing for the online portal through various assessment methods and usability testing protocols. During this internship I will provide MWDL with useful information about current trends in the digital library profession and usability testing, and also help identify additional demographic information about end users. MWDL is a digital library with many possibilities and needs to know who their users are in order to know which projects are worth resources and which users need to be targeted for future outreach.

Objectives

Collaborate with MWDL committee members to:

- Determine primary issues concerning usability.
- Determine which protocols will best meet MWDL's needs.
- Conduct usability testing on the new beta site interface of the Mountain West Digital Library in Primo.
- Write and present a final analysis to the program director and Website Development Task Force of the UALC Digitization Committee.

Usability Testing and Digital Libraries

The ACRL Research Planning and Review Committee reports that digital libraries are amongst the 2010 top ten trends in academic libraries. They project the demand for digitization of unique library collections will increase and require a larger share of resources. Further, the ACRL states, "academic library collection growth is driven by patron demand and will include new resource types" (ACRL 2010, p. 286, 288). As digital libraries are becoming highly used resources, usability testing becomes a necessary aspect of a digital library. Digital library users have many choices, and therefore MWDL will want to ensure that its users can easily navigate and access credible resources.

Usability Testing Issues to Consider

Steve Krug (2006), a highly respected usability consultant for companies such as Apple, Lexus, and BarnesandNoble.com, simply states, "If you want a great site, you've got to test it." He observes that after working on a site for even a short time, the developer knows too much and can't see it fresh anymore (Krug 2006, p. 133). As MWDL has implemented the new Primo, usability testing should be an integral part of the new addition. Below are some usability issues that other digital libraries and researchers have noted and recommended for others to consider.

Efficiency and Effectiveness of a Research Cycle

The ease of access to full resources is important to researchers. They do not want to work hard to accomplish their information goals. Buchanan (2009) notes that usability and the usefulness of a digital library depends on effectiveness and efficiency of the user's experience. It is important that a user is able to accomplish their task goals when acquiring resources in relation to successfully completing the task within a reasonable time (Buchanan 2009, p. 638-640). Also, usability testing of the California Digital Library (CDL) revealed that end users want a digital resource that supports a search, evaluate, and access cycle. End users want to quickly locate a resource, evaluate the sources' applicability, and then access the actual resource or move on by repeating the cycle (Lee 2009, p. 3-4). If a user is unable to efficiently work within this cycle, they will move onto an entirely new digital resource. The most user friendly digital libraries will make it easy for users to quickly search for information, evaluate the usefulness, and then select a direct link to the actual resource. Does MWDL allow their end users to efficiently work through this cycle and quickly access the actual resource?

Navigation, Instructional Design, and Direct Links

Another important aspect of usability is the user's ability to navigate with ease and learn new tool functions with efficiency. Buchanan (2009) also discusses the importance of the user's awareness of their location on the Web site. He states that disorientation can lead to cognitive overload. He also mentions that the learnability, or instructional design of the Web site's functions can be considered a fundamental aspect of usability because the user's ability to learn the system is their first experience (Buchanan 2009, p. 640). Additionally, CDL discovered that many users are single-mindedly focused on obtaining the actual resource through a direct link (Lee 2009, p. 8). When looking at these issues of usability, does MWDL allow users to easily navigate through partners' resources and quickly learn how to access the actual resource?

Usability Testing Made Simple

Though usability testing is vital to digital libraries, it can seem to be an overwhelming and expensive task. However, simple methods have proven to produce valuable information. Small groups of participants can be tested through heuristic evaluations, think-aloud use case scenarios, and short user feedback surveys. Heuristic evaluations are test instruments that are presented to a group of experts, who are asked to evaluate the Web site with a set of specific guidelines. A simple think-aloud test can be done with 5-8 people asking them to review the Web site within four steps of human-computer interaction (Hollingsed & Novick 2007, p. 249-250). And finally user feedback surveys can be made straightforward and painless. For example, the New York Public Library system used a simple open source usability testing tool, Infomaki, to gather important qualitative data from its Web users (Lascarides 2009).

Where Do We Go From Here

The following is a usability testing plan that has been developed based on applicable research and literature. Sandra McIntyre provided a foundation for understanding usability testing and then collaborated with me to formalize a plan. I will use three different testing protocols in order to reveal a variety of valuable information about the MWDL search portal's usability. This plan addresses specific issues that other reputable digital libraries have tested and that the MWDL Website Development Task Force has recognized as being important for MWDL to examine.

Usability Testing Plan

Overview

The following outline describes the usability testing plan for MWDL. The three testing protocols that will be used — heuristics evaluation, think-aloud use case scenario, and end user feedback — are detailed below. Following the specific protocols, the summary of issues to be tested, the means of the testing, and the participant persona(s) are listed.

Comprehensive Target Objectives:
- o Navigation
    - o Does MWDL support an efficient work flow for users?
    - o Users want direct links and help accessing links. Does MWDL provide quick direct links with clear navigation?
    - o Users want direct links. Does MWDL provide easy access to the PDF/resource?
    - o Don't make me think! Do MWDL users fell like it's a lot of work to access desired information?
- o Instructional Design
    - o How well does the system enable users to accomplish their information goals?
    - o Is MWDL intuitive to users?
- o Relevance and Reliability
    - o Determine MWDL's reliability by examining the accuracy, dependability, credibility, and consistency of information.

A.Heuristics Evaluation

A small group of usability experts will evaluate a user interface using a set of guidelines and noting the severity of each usability problems (Hollingsed & Novick 2007).
- o *Summary of Issues:*
    - o Does MWDL support efficiency and effectiveness based on the search, evaluate, access the actual resource cycle (Buchanan 2009; Lee 2009)?
    - o Does MWDL support ease of navigation and quick access to direct links to actual resources (Lee 2009)?
    - o How well does MWDL search system enable the user to accomplish their task goals (Buchanan 2009)?
    - o Do the resources on MWDL maintain accuracy, dependability, and consistency in information (Buchanan 2009)?
- o *Means:* Specific issues to be evaluated through a short survey using SurveyMonkey.
- o *Survey:* See Appendix B.

- *Participant Personas: see MWDL User Personas (Appendix A)*
  - o Partners: as exemplified by "The Western Nevada College Librarian" in the Personas document.
  - o Participants: MWDL Digitization Committee Members

The College Librarian:
Penelope Smarts

Age: 39

Marital status and children: Married with 3 children.

Profession: Western Nevada College Library Director

Residence: Carson City, Nevada

Transportation: 2011 Honda CR-V she just bought with her new promotion as Library Director!

Hobbies and interests: Social networking through Web sites, involved in the Nevada Library Association and presents often at conferences, embraces the role of soccer mom, backcountry skiing, and fine dining. Excellent blackjack player during 'the girls' night out' in Reno, NV.

Education level: Masters of Library Information Science from the University of Alabama

Technology level: Comfortable with technology and looks for ways to integrate new technology into her library.

Primary MWDL use: Mrs. Penelope Smarts stumbles onto boxes of collected items from the 1897 World heavyweight championship fight between James "Gentleman Jim" Corbett and Australian Robert Fitzsimmons held in Carson City. She would like to catalog the materials and make a special collection to preserve the information and make it available to users. Once she has completed cataloging the new collection, she wants the information available digitally and easily accessed by students and residents of the west. However, she doesn't know where to start. She has discovered the MWDL site by browsing the University Nevada Reno, University Library Web Site, and would like to make her collection available through the MWDL.

B. Think-aloud Protocol

Users are assessed on how well the MWDL user interface allows for ease of exploratory learning, and expose any errors that users may make while using the interface (Hollingsed & Novick 2007).
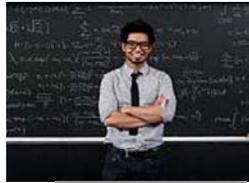
- o *Suggested Summary of Issues:*
    (Final selection of issues to be confirmed after the Heuristics evaluation.)
  - o Do users feel that MWDL is difficult and time consuming to access actual resources (Buchanan 2009; Lee 2009)?
  - o How many clicks does a user make before accessing the actual resource?
  - o Does MWDL enable users to feel that they can intuitively learn system tools (Buchanan 2009)?
  - o Does MWDL confuse user when direct links to actual resources take them to another Partner's site?
  - o Are users always aware of their location while on MWDL (Buchanan, 2009)?
  - o Do users like and want to promote MWDL through networking tools?
- o *Means:* Short survey with specific issues to be evaluated using both the Marriott Library's and Harold B. Lee Library's usability testing labs.
- o *Survey:* See Appendix C.

    o *Incentive:* A $10 gift card to the school's bookstore.

- *Participant Personas: see MWDL User Personas (Appendix A)*
    o Students: Seven students from the University of Utah.
    o Genealogists: Seven genealogists from Brigham Young University.

The Undergraduate Student:
Robert Espinoza

Age: 19

Residence: Summit Hall (dorm) on the east edge of campus; from Gunnison, Colorado

Family: Single; his mother is a single mom raising two younger children still at home

Profession: Full-time student majoring in History at Utah State, with part-time job on the Grounds crew

Transportation: Drives a Toyota Corolla with 350,000 miles on it

Hobbies and interests: Likes fly-fishing, snowboarding, and other outdoors activities; has a solid group of friends; likes country-rock music and video games; attends Aggie football and basketball games with friends

Education level: High school degree and in his second year of college

Technology level: Up to date on all technology; he learned it from the earliest days in school; uses Guitar Hero

Primary MWDL use: Research for history papers, particularly primary sources

Secondary MWDL uses: independent study on processing archives; he helps out on the Special Collection EAD encoding project

New "killer" functionality: Improved EAD functionality

The Family Genealogist:
Aunt Mathilde

Age: 50

Marital status and children: Married with 5 children and 2 grandchildren. Family has lived in the area for a long time.

Profession: Works part-time in a scrapbooking store

Residence: Farmington, Utah

Transportation: 1998 Chevrolet Suburban

Hobbies and interests: Scrapbooking, genealogy, crocheting, gardening, former Relief Society officer

Education level: High school graduate

Technology level: Not confident with technology; her children bought her Windows computer and got her on the Internet last Christmas. Uses email to communicate with her son in the Army weekly. She knows how to search the Internet but isn't highly skilled. She looks for gardening tips, crochet patterns, coupons, etc.

Primary MWDL use: Family history research. Interested in anything that might have appeared in the local newspaper, particularly in birth, marriage, and death notices. She expects that what she needs to find in the Archives or State History or through newspaper records should be here. One-stop shopping for genealogy research. How does this connect me with my family and community?

C.Feedback Survey

Users are asked simple questions in order to gather qualitative data.

- *Objective:* MWDL is a digital library with lots of possibilities and needs to know who its users are in order to know which projects are worth devoting resources to and which users need to be targeted for future outreach, further development, and usability testing.
- *Summary of Issues:*
  - Who are MWDL users?
  - Is the MWDL site clear about its purpose and services?
  - Are MWDL users successful in acquiring resources?
- *Means:* One-question surveys through SurveyMonkey.
- *Survey:* See Appendix D.
- *Compensation:* A warm thank you.

- *Participant Personas: see User Personas (Appendix A)*
  - All End Users: as described in the Personas document.

References

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Appendix A

Note: This list should be modified after the Feedback Survey is out for a week or two.

Mountain West Digital Library
User Personas
Fall 2009

The Family Genealogist: Aunt Mathilde

Age: 50

Marital status and children: Married with 5 children and 2 grandchildren. Family has lived in the area for a long time.

Profession: Works part-time in a scrapbooking store

Residence: Farmington, Utah

Transportation: 1998 Chevrolet Suburban

Hobbies and interests: Scrapbooking, genealogy, crocheting, gardening, former Relief Society officer

Education level: High school graduate

Technology level: Not confident with technology; her children bought her Windows computer and got her on the Internet last Christmas. Uses email to communicate with her son in the Army weekly. She knows how to search the Internet but isn't highly skilled. She looks for gardening tips, crochet patterns, coupons, etc.

Primary MWDL use: Family history research. Interested in anything that might have appeared in the local newspaper, particularly in birth, marriage, and death notices. She expects that what she needs to find in the Archives or State History or through newspaper records should be here. One-stop shopping for genealogy research. How does this connect me with my family and community?

Secondary MWDL uses: none.

New "killer" functionality:

The College Professor: Peter Principle

Age: 48

Marital status and children: Married with 4 teenagers

Profession: Tenure track position at Snow College teaching American literature

Education: Ph.D. in American Literature, Brown University

Residence: Ephraim, Utah

Transportation: 1997 Ford F150

Hobbies and interests: Spends his evenings with his 20 acres, growing hay. He has a couple of horses that he shows and rides for fun. He enjoys the smaller college setting. He married a Sanpete County girl. Active as a Scoutmaster. Interested in the pioneer experience and researching the details of the Mormon Trail.

Technology level: Uses email daily in his work. Has a Facebook page. Comfortable with Web surfing. Has programs to track farming expenses and horse pedigrees. Uses a Google Calendar for his Scout troop. Has a blog about his Trail experiences. Uses WebCT for managing his syllabus and assignments. Subscriber to Mormon Historical Association listserve. In his work, searches for full-text books to make them available to his students.

Primary MWDL use: Researching connections between American literature and the pioneer experience. Leads him to trail diaries on MWDL.

Secondary MWDL uses: Anything to do with horses; research about Snow College and Ephraim.

The Graduate Student: April Johnson

Age: 26

Family: Single; "Daddy's little girl" with two older brothers

Profession: Full-time student in Social Work

Residence: Salt Lake City, Utah; originally from Las Vegas

Transportation: Uses mass transit and bicycle

Hobbies and interests: Likes to dance; has an active social life; hikes in the Wasatch; reads Catalyst; does yoga and cares about health issues and conservation issues; during high school and college she volunteered at a local soup kitchen; cares about cultural and linguistic diversity issues

Education level: B.A. in Sociology

Technology level: Uses library databases for research; is familiar with many Web 2.0 features, like Facebook and Twitter; comfortable with WebCT; subscribes to FreeCycle

Primary MWDL use: Interested in specific collections about diversity and historical context for the region's peoples and what is unique about living in the Mountain West; some examples are Latino/Latina Voices, Utah American Indian Digital Archive oral histories, Topaz Museum collections, Utah State Historical Society's Peoples of Utah Collection, University of Utah Neighborhood Partners collection, Native American resources in various additional collections, electronic theses and dissertations from various institutions and other institutional repository items

Secondary MWDL uses: Western Soundscape Archive sounds; Las Vegas collections

New "killer" functionality: RSS feeds, so she could push out something new she had found to her Facebook page

The Undergraduate Student: Robert Espinoza

Age: 19

Residence: Summit Hall (dorm) on the east edge of campus; from Gunnison, Colorado

Family: Single; his mother is a single mom raising two younger children still at home

Profession: Full-time student majoring in History at Utah State, with part-time job on the Grounds crew

Transportation: Drives a Toyota Corolla with 350,000 miles on it

Hobbies and interests: Likes fly-fishing, snowboarding, and other outdoors activities; has a solid group of friends; likes country-rock music and video games; attends Aggie football and basketball games with friends

Education level: High school degree and in his second year of college

Technology level: Up to date on all technology; he learned it from the earliest days in school; uses Guitar Hero

Primary MWDL use: Research for history papers, particularly primary sources

Secondary MWDL uses: independent study on processing archives; he helps out on the Special Collection EAD encoding project

New "killer" functionality: Improved EAD functionality

The K-12 Teacher: Jeanene Esper-Kami

Age: 38

Residence: Brigham City, Utah

Family: Married to a real estate agent; 3 children

Profession: Teaches 8th grade U.S. History

Transportation: Toyota Prius

Hobbies and interests: Traditional film photography

Education level: Degree in History from Westminster College

Technology level: Uses a MAC; has an iPhone

Primary MWDL use: Primary sources for her classes; husband's mother (3 yrs old), uncle (7 yrs old) & grandmother were residents of the Topaz relocation center in WWII so she has looked up information about Topaz in MWDL.

Secondary MWDL uses: Looking for interesting photographs

New "killer" functionality: Multimedia interactive features

The High School Student: Jacob Kimber

Age: 15

Residence: Grouse Creek, Utah

Family: Living with his parents, an uncle, and three brothers on the family's cattle ranch

Profession: Full-time student and helps out on the ranch

Transportation: Has a learner's permit

Hobbies and interests: Hoping to make the high school baseball team; interested in cars, NIntendo, rodeo bull-riding, girls

Education level: High school sophomore

Technology level: Facile with cellphone and other in-hand technology; comfortable with computers and Internet

Primary MWDL use: Looking at family members in the Grouse Creek Collection; teacher is requesting that he use that as a resource in class

Secondary MWDL uses: Looking at the Showgirls collection

New "killer" functionality: Would like to be able to add comments and information to the Grouse Creek collection (user tagging)

The Researcher: Donald Wigglesworth

Age: 58

Family: Married to Maureen who works at a florist shop, 3 children, all living away from home

Profession: Professor of Modern European History

Residence: Reading, Berkshire, England

Transportation: Owns a Ford Escort, but rarely drives - rides a bicycle mostly or uses public transportation for longer trips

Hobbies and interests: Gardening, claims to enjoy cricket, but is actually a closet Arsenal fan

Education level: PhD

Technology level: Bumbler - uses the Internet, but is constantly calling his college-student son for assistance with every small issue. Is not involved in any social networking. Has a cell phone (at his wife's insistence) but only turns it on to make a call and then powers down immediately.

Primary MWDL use: French Political Pamphlets

Secondary MWDL uses: Great uncle immigrated to Utah after joining the LDS Church. Donald has always been fascinated with the history of the LDS Church in England and uses the 19th Century Mormon Publications collections to learn more about that time period

New "killer" functionality: Less confusing user interfaces at the collection/item level

The Government Employee: Julia Sanchez

Age: 44

Family: Divorced, 2 kids

Profession: Demographic and Economic Analysis Specialist for the state

Residence: Salt Lake City, Utah

Transportation: Toyota Highlander

Hobbies and interests: Gardening, Cooking, Traveling, her kids are teenagers involved in sports and theater (she regularly attends school theater productions and sports activities), volunteers at the Guadalupe Center as a K-3 Reading Tutor

Education level: Degree in Economics

Technology level: Proficient in PC, not as familiar with Macs, new to Web2.0, joined Facebook recently as a way to connect with family and friends

Primary MWDL use: uses the historical image and map collections (Sanborn Maps, Peoples of Utah), Utah State Library's Health Status Surveys, Searches the IR collections for ETD's and open access papers on demographic and economic analysis of Utah

Secondary MWDL uses: enjoys listening to audio recordings of Western Soundscapes

New "killer" functionality: translator plug-in, RSS feeds

The Senior Citizen: Paola (Paula) Evans

Age: 67

Family: Husband deceased; children married; has 4 grandchildren

Profession: retired bookkeeper

Residence: St. George; originally from Helper, Utah

Transportation: Buick Skylark 1998

Hobbies and interests: creating memory books for family members with photos and family history in them. Volunteers at Daughters of Utah Pioneers museum and active in pioneer reenactments and Pioneer Day events. Sews pioneer costumes.

Education level: B.A in Accounting

Technology level: Excellent financial software skills; has PC and scanner at home

Primary MWDL use: Looking for local history and Utah history information to help with museum work and Pioneer Day stuff. Needs photos of pioneer clothes to help design her costumes. Her family migrated to Utah in the 19th century as miners of Italian descendent; family name is Pelligreno.

Secondary MWDL uses:

New "killer" functionality: ecommerce so she can easily buy hi-resolution prints of MWDL photographs she likes.

The Western Nevada College Librarian: Penelope Smarts

Age: 39

Marital status and children: Married with 3 children.

Profession: Western Nevada College Library Director

Residence: Carson City, Nevada

Transportation: 2011 Honda CR-V she just bought with her new promotion as Library Director!

Hobbies and interests: Social networking through Web Sites, involved in the Nevada Library Association and presents often at conferences, embraces the role of soccer mom, backcountry skiing, and fine dining. Excellent blackjack player during 'the girls night out' in Reno, NV.

Education level: Masters of Library Information Science from the University of Alabama

Technology level: Comfortable with technology and looks for ways to integrate new technology into her library.

Primary MWDL use: Mrs. Penelope Smarts stumbles onto boxes of collected items from the 1897 World heavyweight championship fight between James "Gentleman Jim" Corbett and Australian Robert Fitzsimmons held in Carson City. She would like to catalog the materials and make a special collection to preserve the information and make it available to users. Once she has completed cataloging the new collection, she wants the information available digitally and easily accessed by students and residents of the west. However, she doesn't know where to start. She has discovered the MWDL site by browsing the University Nevada Reno, University Library Web Site, and would like to make her collection available through the MWDL.

Secondary MWDL uses: none.

New "killer" functionality:

Appendix B

Mountain West Digital Library Beta Testers Survey

Welcome

Dear MWDL Digitization Committee:

Thank you for taking the time to provide your feedback on the Mountain West Digital Library's new Primo search portal. Your feedback will help evaluate Primo's ability to facilitate easy use and accessibility to accurate information. Your answers will be anonymous and will be used only to improve the user experience of the search portal.

The following is a 12-question survey with space for your comments. The questions should take only 10 minutes of your time. This survey is evaluating Primo's search portal and not you. We want your honest reactions and suggestions.

Before you begin the survey, please take a few minutes and use MWDL's Primo search portal at http://vizier.library.utah.edu:1701/primo_library/libweb/action/search.do?vid=MWDL. First, identify a topic of interest to you, or a research question. Next, please use MWDL's Primo site to search for information on your topic. Please pay attention to the search experience as you navigate and explore.

Thanks for helping us improve the user experience!

Trisha Hansen
MWDL Intern / Emporia State University graduate student

Navigation

Please evaluate the navigation on the MWDL Primo search portal.
> I easily located desired information.
> The search results clearly reflected my query.
> The links behaved as expected.
> Comments: _____

Instructional Design

Please evaluate the instructional design on the MWDL Primo search portal.

Primo's search functions are easy to understand and familiar to me.
It was effective to refine my results with the facets on the left.
I found it easy to retrieve the collections from my institution.
Comments: _____

Reliability

Please evaluate the reliability of information on the MWDL Primo search portal.

The metadata in the facets appeared the way I expected.
The information retrieved seems to be from credible sources.
The MWDL Primo search portal clearly communicated its purpose.
Comments: _____

Debriefing

Please evaluate your overall experience with the MWDL Primo search portal.

The MWDL Primo search portal will be useful to end users.
The MWDL Primo search portal will be useful to librarians and archivists.
Overall, I am satisfied with the MWDL Primo search portal.
Comments: _____

About You

Thank you for your answers. Your feedback will help us improve our digital library for professionals and end users. Please answer the following optional questions about you to enhance our analysis.

What is your gender?

What is your age?

How many years of experience do you have working in a library or other cultural heritage institution?

How often do you use search portals (e.g. Google, Amazon, Electronic Databases, Catalogs, etc.)?

Thank You

Thank you again for your time and feedback. If you have any questions, concerns, or suggestions, please don't hesitate to contact Sandra McIntyre or Trisha Hansen.

Sandra McIntyre
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801-585-0969

Trisha Hansen
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Appendix C

Potential Think-aloud Use Case Scenario Target Issues

Discussed during MWDL's Website Development Task Force Meeting 1-25-2011

1. Finding Materials and assessing retrieved information.
- Task: Find materials on a given topic.
    o Are the search results useful to you?
    o Are the search type results clear?
    o Of the number of results retrieved, how many were useful?
    o Would you use the retrieved resources?
    o Where/how would you use the resources?
    o When results have been retrieved, what questions do you have about their use, reliability?
    o What types of barriers to the search or retrieved information exist? Jargon? Clicking too many times? Navigating to the actual source?

2. Providing users with information about MWDL's functions and how to use the information retrieved.
- Task: Select a resource and use it.
    o How can you use this resource?
    o How do you want to use this resource?
    o Do you need/want help from the Web site in downloading, printing, or creating attribution?
    o Do you want a citation generator?
    o How would you get a copy of a photo?
    o Are you concerned about copyright when using the photo in a Power Point or other medium?
    o Is it clear how to download/print the resource?
    o Do you want to share or promote what you've found? Is sharing important to you?
    o How do you want to share the information? Facebook, Delicious, Google, Y! Bookmark.

3. Navigating to the resource through another institution's Web site.
- Task: Select the resource, which will take you to the resources owning institution.
    o When the system automatically navigates away from MWDL, is it clear to you what is happening.
    o Why does the system navigate away from MWDL to another institution's site?
    o Would you like a clear explanation why the system navigates away from MWDL?
    o What institution owns the resource?
    o Does it matter to you who owns the resource?
    o If you wanted to contact someone about the resource, who would you contact?
    o Is navigating away from MWDL confusing?
    o Are you able to easily navigate back to MWDL?

- o Do you want to navigate back to MWDL?
- o How important to you is consistency between the various institution Web sites?
- o Does the navigation to the different institution's Web sites fell cumbersome to you?
- o About how many clicks did you have to make to access the resource?

4.   Assessing the retrieved information.
- Task: Asses the retrieved information you have gathered and tell me what you think?
  - o What is your level of trust in this particular resource?
  - o Why or Why not do you trust this resource?
  - o Is the information reliable enough to share or use for your needs?
  - o What more information do you need about the resource to validate its credibility?
  - o Do the resource's thumbnails satisfy your expectations in order to assess if you want to select the resource or not?
  - o Does the short view of information provide enough information to satisfy your need to assess if you want to select the resource or not?
  - o What other types of information would be helpful in assessing your desire to select the resource?

5.   Assessing the format of the search results.
- Task: Look over all the options for refining your search results and tell me what you thing? Refine your results.
  - o Does the order of the facets matter to you?
  - o Which facets do you like to use?
  - o How many facets are too many?
  - o Are the faucet options overwhelming or helpful?
  - o Are there other ways you would like to refine your results?
  - o Do the facets make sense?

6.   General Overview
- Task: Please tell me what you think about MWDL.
  - o Is there anything that is confusing to you?
  - o Do have any suggestions to improve MWDL?
  - o Does MWDL meet your expectations?
  - o Are there any barriers to accessing resources that you noticed?
  - o Why are people using MWDL and how are they using it?

Appendix D

Mountain West Digital Library Think-aloud Usability Test

Thank you for taking the time to assist in assessing the Mountain West Digital Library's new search features. Please us the next 30 minutes to perform the following tasks. Speak out loud about how you complete the tasks given.

Your thinking out loud will help us evaluate Mountain West Digital Library's search functions and resources. Your comments will be anonymous and will be used only to improve the user experience of the Web site.

Task 1: You're taking Western History and have been assigned to create a power point report on Lehman Cave National Monument located in the Great Basin National Park. Please describe out loud how you complete the following tasks.

 Find two photos taken before 1950 that you could use in your report.

 Save the photos so you can later put them into your PowerPoint.

Task 2: You're taking a course in Environmental Protection and would like to find an auto clip of the sound of birds chatting in the San Rafael Swell. You've heard that the Western Soundscapes has recorded nature clips.

 Search for a sound clip of birds chatting in the San Rafael Swell.

 Download the sound slip so you can have access to it during class tomorrow.

Task 3: You are doing research on the history of mining in Utah and need the Beaver District Mining Minutes.

 Search for Beaver Mining Minutes.

 Who has the records?

 How do you get a copy of the records?

 If you don't know how to get a copy, who would you contact for that information?

Task 4: You want to learn about the evacuation and relocation of the Japanese Americans during World War II.

 Search for information on the evacuation and relocation of the Japanese Americans during World War II.

 What resources would you use to learn about this topic?

Task 5: You just found out that you are related to Robert LeRoy Parker.

Search for Robert LeRoy Parker.

What resources will help you learn about him?

Please tell us what you think about the Mountain West Digital Library by answering **out loud** the following questions about your experience using the digital library.

1. What do you like about the Web site?

2. What do you dislike about the Web site?

3. Did you find anything confusing to you?

4. Were you able to complete the assigned tasks?

If no, why do you feel you were unable to complete the task?

5. Are there any barriers to accessing resources?

6. Were there any aspects of the Web site that you found irritating?

7. What changes would you make to assist users?

8. Do you have any suggestions to improve the Mountain West Digital Library?

Please help us learn about our potential users by answering the following quick questions.

1. How old are you?

2. What is your gender?

Female   Male

3. What is your current year in School?

Thanks for your help.

Specific Issues to Test with Think-Aloud Use Case Scenario

B	Are the search type results clear?
E	Where/how would you use the resources?
F	When results have been retrieved, what questions do you have about their use, reliability?
G	What types of barriers to the search or retrieved information exist? Jargon? Clicking too many times? Navigating to the actual source?

I	Which facets do you like to use?
J	How many facets are too many?
L	Are there other ways you would like to refine your results?

O	How do you want to use this resource?
P	Do you need/want help from the Web site in downloading, printing, or creating attribution?
T	Is it clear how to download/print the resource?
V	How do you want to share the information? Facebook, Delicious, Google, Y! Bookmark.

W	When the system automatically navigates away from MWDL, is it clear to you what is happening.
Z	What institution owns the resource?
Ab	If you wanted to contact someone about the resource, who would you contact?
Af	How important to you is consistency between the various institution Web sites?
Ag	Does the navigation to the different institution's Web sites fell cumbersome to you?
Ah	About how many clicks did you have to make to access the resource?