EVALUATION OF SELECTED COMPONENTS OF THE

FLORIDA ELECTRONIC LIBRARY:

FUNCTIONALITY, USABILITY, AND ACCESSIBILITY TESTING

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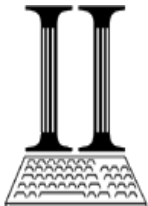
EXECUTIVE SUMMARY

This draft report provides a broad overview of results of the evaluation of three current pilot programs of the Florida Electronic Library (FEL). The purpose of this report is to present results from the evaluation of the FEL web page interface, DCC interface, and Ex Libris Metalib/SFX interface. The results within this report allow the Information Institute to provide FDLIS, FNLC, and other interested parties with assessments of:

1. Usability and accessibility of the existing FEL web page interface as part of the FEL portal component;
2. Usability and accessibility of limited collections of materials through the DCC interface as part of the statewide FEL union catalog component; and
3. Usability, accessibility, and functionality of selected and modifiable features of the Ex Libris Metalib/SFX product developed for the FEL portal component.

The results within this report provide data that can inform FDLIS, FNLC, and FEL work groups or other interested parties in the decision-making process for continued implementation of the FEL.

KEY FINDINGS

Usability Results for the FEL Web Page Interface

In general, participants felt the FEL web page interface was a good resource and most participants indicated they would recommend the site to others. The information provided on the site proved to be valuable to the participants. Particularly, participants found the "Kids, Students, and Families" section of the site to be a fun part of learning, something kids and adults would use.

Participants also indicated that searches should lead to accessing items. Databases within the FEL should show items, indicate availability and location of items, and provide a link directly to the item, either to the database or directly to library holdings. All participants felt that finding items and not getting information on location, availability, or even directly obtaining the items would frustrate patrons expecting to find and obtain items. All log-in areas should be linked to one log-in screen for one-time access to facilitate the continuity from search to access.

Participants liked the appearance of the interface. Most of the participants were pleased with the overall design and navigation features of the interface. Not knowing when they were leaving the FEL site was problematic and most felt patrons would become confused as to where they were within the system. Tags, warnings, or clearly marked means to return to the FEL would help when patrons had to leave the FEL web pages or needed to return. Consistency in primary color schemes of toolbars, etc. would benefit patron's comfort levels in using the interface and its resources.

Usability Results for the DCC Interface

In general, all the participants thought this interface was intuitive, easy to navigate, and made image retrieval a relatively simple process. All found the site easy to browse; the results of searches would be understood and usable for the majority of patrons. Other than the book bag automatically diminishing, all features seemed to be operational and functional. All participants seemed to particularly like the book bag as a surprise feature of this site.

Additionally, print and save features were not included within the usability protocol; however, several participants did successfully try these features. The general comment on both of these features was the lack of any descriptive data accompanying items saved to the desktop or printed. Photos were printed without any difficulty (the alligator photo from the first keyword search) and were retrieved and opened without any difficulty from the desktop. However, without any description linking the photo to the actual item retrieved, a participant could have difficulty replicating the search. Each photo could have an identifiable number or label so a patron could replicate these searches.

Usability Results for the Metalib/SFX Interface

In general, participants (a mix of library patrons and library staff members) felt the simple search features and retrieval of items to be adequate to meet the needs of most library patrons. Staff participants felt their own search interfaces were superior and offered features such as the ability to refine and limit searches that this site apparently did not offer. Staff participants also felt their own library web sites offered a more familiar and simpler approach to locating resources by patrons.

None of the participants had used or seen the interface so none had any experience in navigation or use of the site. The lack of familiarity with the site along with the site not being fully implemented within a library interface limited the evaluation of the site by the participants. Participants could see potential for usability and usefulness of many of the features, but without the familiarity, the perspectives of both patrons and staff were that library patrons would not like, could not use, or want to use many of the features. Additionally, without having a fully functional site to evaluate, staff participants in particular tended to view the site negatively for patron use and cautiously for staff use. Of primary concern for both staff and patron participants was the learning curve they perceived patrons would have to overcome to find the site usable and useful.

Patrons agreed that grouping databases into relevant general search areas by libraries was logical and practical. Patrons were comfortable with the site's search features and thought the bookbag feature, with the ability to save searches into patron-created folders would enhance the search experience. They had difficulty with comprehending the meaning of some of the icons used throughout the sight and in labeling of areas such as My Shelf and eShelf, particularly since accessing the bookbag feature is through the My Shelf feature, a step that was confusing to both patrons and staff. They were not comfortable with creating customized database groups or with SFX, although they were intrigued at the potential usefulness of both features. They presented mixed opinions on the usefulness of linking Google to SFX, but thought the addition of a link to the "Ask a Librarian" interface would be helpful.

All participants verbally admitted and were concerned that utilizing many of the features beyond the simple search would require additional training and guidance before patrons would be able to use the features. Staff participants felt that the training needed for patrons was beyond the scope of most patrons' needs and the ability of many patrons. In general, the patrons liked what they were seeing and wished they could use the features, but they also perceived the usability and usefulness of many of the features to be beyond the skill levels of typical library patrons.

Staff participants tended to agree with the overall assessment by patrons of the usability and usefulness of many of the features for typical library patrons. Staff agreed that logically grouping databases, saving searches, and linking to the "Ask a Librarian" interface could be helpful to patrons. Staff held mixed opinions on the bookbag feature, feeling the feature would be useful but at the same time the feature was too complicated, or took too many steps to be used by patrons. Staff agreed with patrons on problems with icons, labeling, and on SFX being too complicated to use as well. All participants liked the potential of SFX but felt the process to use SFX impractical for typical library patrons.

Limitations of the Metalib/SFX Interface Evaluations

The Metalib/SFX interface was not fully integrated into a pilot study library system. The lack of full integration created limitations in the evaluation process and conflicting views from participants in the results of the usability evaluations. The usability evaluation of the Metalib/SFX interface was limited due to the following factors:

- Final version of Metalib/SFX not fully integrated into any of the pilot study public library systems or FEL for the evaluation process;
- Failure to fully implement the Metalib/SFX interface led to a major modification of the original usability methodology and to repeated delays in conducting the usability testing;
- Participants of the usability study were unable to preview and use the features or explore the capabilities of Metalib/SFX as originally planned in the usability methodology limiting the *actual* evaluation of the usability of the interface;
- Modifications in the usability methodology changed the focus of the study from evaluating usability based on participants' experience with the system to a focus upon participants thoughts on the potential usability or usefulness of the interface; and
- Failure to provide a fully integrated version of the interface led to confusion about the potential level of customization by libraries or by library patrons, the level of search capabilities the system could provide, and the extent SFX would aide patrons.

These limiting factors, as well as the responsiveness of Ex Libris need to be addressed before the results of usability evaluation as originally planned can be realized.

The results of the usability, functionality, and accessibility evaluations of the Metalib/SFX interface as presented did provide positive feedback on some features of the program and on the potential use and usability of this product by participants. However, without a fully integrated product, issues with functionality, accessibility, and usability cannot be accurately generalized to some future integration of the product. Issues library patrons and staff may face with the functionality, accessibility, and usability of this product cannot be fully realized or evaluated at this time as per the original intent of the evaluation process. Nonetheless, the findings of the testing described below do suggest strategies for the future development of the system.

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Evaluation of Selected Components of the Florida Electronic Library:
Functionality, Usability, and Accessibility Testing

In 2003, the Florida Division of Library and Information Services (FDLIS) contracted with the Information Use Management and Policy Institute (Information Institute) of the School of Information Studies at Florida State University to evaluate three current pilot programs of the Florida Electronic Library (FEL). The pilot programs are: 1) the FEL web page interface, 2) the Digital Collections Catalog (DCC), and 3) the Ex Libris Metalib/SFX Portal Project. The DCC is currently referred to as *Florida on Florida* and is integrated within the FEL web page interface. This study is part of an ongoing effort by FDLIS in the continuing development of the FEL.

The FEL, funded by the Library Services and Technology Act (LSTA) and administered by FDLIS, is being planned and implemented in cooperation with libraries throughout Florida. The Florida Library Network Council (FNLC), an advisory body representing pivotal agencies in Florida's library networking community, guides the program.

BACKGROUND

In 2002, FDLIS contracted with the Information Institute to develop evaluation methodologies and to test selected components of the FEL. Four initiatives of this project were:

- *Initiative I:* Identify and develop preliminary evaluation criteria for FEL services and resources that may be used in the Phase II study;
- *Initiative II:* Review the current status, development, and deployment of each of the four pilot projects (SEFLIN, TBLC, Virtual Reference, and the OCLC Pilot) in light of the selected evaluation criteria for the FEL;
- *Initiative III:* 1) Develop assessment indicators including statistics, performance measures, and outcomes related to the key components of the FEL; and 2) test the usability, functionality, and accessibility of the portal component; and
- *Initiative IV:* Test the usability and accessibility of the FEL Digital Collections Catalog (DCC) interface as the FEL virtual union catalog component.

Initiatives I, II, and part 1 of III were completed by September 30, 2003 resulting in two reports: *Florida Electronic Library: Pilot Project Functionality Assessment*;[1] and *Assessment Criteria and Guidelines for Selected Projects Related to the Florida Electronic Library*[2]. Additionally, the Information Institute made recommendations to FDLIS regarding the degree to which the pilot projects developed technology and services to: 1) support the resource sharing goals of the evolving FEL; and 2) implemented technology and services as outlined in *The Florida Virtual Library: Plan for Statewide Implementation*.[3] Three types of evaluation were performed by the Institute. These are functionality, usability, and accessibility. They are fully described in the section titled "Evaluation Approaches".

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[1] Bertot, J. C. & McClure, C. R (2003). *Florida Electronic Library: Pilot project functionality assessment* (Discussion draft). Tallahassee, FL: Division of Library and Information Services, The Florida State Library.

[2] McClure, C. R. & Bertot, J. C. (2003). *Assessment criteria and guidelines for selected projects related to the Florida Electronic Library*. (Discussion draft). Tallahassee, FL: Division of Library and Information Services, The Florida State Library.

[3] RMG, Consultants, Inc. (2002). *The Florida Virtual Library: Plan for statewide implementation*. Florida Library Network Council.

CURRENT INITIATIVE

The purpose of this document is to present findings from the evaluation of the FEL web page interface, DCC interface, and Ex Libris Metalib/SFX interface (Initiative III-2 and IV). These findings will allow the Information Institute to provide FDLIS, FNLC, and other interested parties with assessments of:

4. Usability and accessibility of the existing FEL web page interface as part of the FEL portal component;
5. Usability, functionality, and accessibility of selected and modifiable features of the Ex Libris Metalib/SFX product developed for the FEL portal component; and
6. Usability and accessibility of limited collections of materials through the DCC interface as part of the statewide FEL union catalog component.

Study results will provide data that can inform FDLIS, FNLC, and FEL work groups or other interested parties in the decision-making process for continued implementation of the FEL.

Goals, Objectives, and Outcomes

The initial FEL plan, *The Florida Virtual Library: Plan for Statewide Implementation*[4] developed by RMG Consultants (2002) identified some of the initial goals and objectives for the implementation of individual components of the FEL. All of the necessary long-term goals, objectives, or outcomes, however, were not initially determined for each of the six components of the FEL or specifically for selected or proposed pilot products within each component. A subsequent report prepared by the Information Institute, *Creating a Five Year Strategic Plan for Library Development in the State of Florida*[5] (2003) contains updated tables of goals, objectives, and outcomes for the FEL and for each of the FEL components.

Additional goals, objectives, and outcomes have been developed within the January 2004 statement of work created by the Information Institute, *Measures and Statistics to Assess the Florida Electronic Library.*[6] These additional goals, objectives, and outcomes were created specifically for the pilot programs implemented for the Portal and Virtual Union Catalog components of the FEL. Goals, objectives, and outcomes developed for each pilot program are derived from original FEL component goals, objectives, and outcomes.

The purpose of deriving pilot program goals, objectives, and outcomes from the original FEL components is to ensure that pilot programs fall within the original mission and vision guidelines created for developing the FEL over time. The primary goal of the FEL is: *Florida residents have electronic*

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[4] RMG Consultants, Inc. (May 2002). *The Florida Virtual Library: Plan for Statewide Implementation*. Available at: http://dlis.dos.state.fl.us/bld/FLVirtualLibPlanFinal.pdf; and Florida Department of State. (2003). *Gateway to Information through Florida Libraries: An Outcomes Plan, 2003-2007*. Available at: http://dlis.dos.state.fl.us/bld/LSTAplan.pdf

[5] Information Use Management and Policy Institute. (2003) *Creating a Five-Year Strategic Plan for Library Development in the State of Florida*. Available at: http://www.ii.fsu.edu/getProjectDetail.cfm?pageID=9&ProjectID=6

[6] McClure, C.R.; Snead, J.T.; Thompson, K.M.; & Bertot, J.C. (2004). *Measures and Statistics to Assess the Florida Electronic Library*. (Discussion draft). Tallahassee, FL: Division of Library and Information Services, The Florida State Library.

access to information resources and services through the Florida Electronic Library. An updated presentation of the goals, objectives, and outcomes for the FEL pilot programs of this current project are included in this report. (See Appendix A)

The Information Institute used these goals, objectives, and outcomes, along with proposed evaluation approaches to evaluate FEL portal and virtual union catalog pilot programs. The purpose of the evaluations is to determine the extent to which the pilot programs (FEL web page interface, the DCC web interface, and the Ex Libris Metalib/SFX project product) meet the above stated primary goal of the FEL.

Evaluation of the Metalib/SFX Interface

This evaluation focuses on librarians' and patrons' successful interaction with the Metalib/SFX interface. Factors to determine interaction success rates in meeting information needs include:

- Navigation within interface;
- Selection of search terms or phrases;
- Dissemination of retrieved results;
- Modification of initial search terms and phrases if needed; and
- Retrieval of relevant items.

Focus of success rate is upon the degree and extent of success patrons have in interacting with a fully operational and functional Metalib/SFX interface.

Additionally, evaluation of the Ex Libris product will provide the FDLIS with an assessment of the extent to which the Portal Pilot (through the Metalib/SFX pilot) meets functionality, usability, and accessibility requirements of a statewide and interoperable Portal. Such data will provide much needed data that informs the FDLIS decision-making process for continued implementation of the FEL Portal.

Assessing the functionality, usability, and accessibility of selected features of the interface allows the study team to make recommendations based on the results of the overall test process. The study team began this study with the basic assumptions that the:

- Demonstration interface of the Metalib/SFX product will be fully functional and operational;
- Study results will accurately reflect the complete holdings of each Florida public library included within the pilot program;
- Login information provided for the testing, if necessary, will give complete access to all of the features and information included in the Metalib/SFX interface; and
- Pilot projects did not undergo any significant change, updates, or other modifications during the functionality testing period.

The study team interacted with FDLIS, FEL working groups, and other interested stakeholders to ensure that these assumptions would be viable before beginning the evaluation process.

Evaluation of the DCC Web Interface

In 2004, the FCLA under the direction of the FEL and on behalf of the FDLIS implemented a pilot statewide union catalog of materials, referred to as the DCC. The pilot program is limited to six digital collections, material from the Florida Memory Project, and material from the state university

system's (SUS) PALMM collections which include publications of archival, library, and museum materials. The collections are limited to materials related to Florida.[7]

The study team worked with the FDLIS FEL project manager, FLNC, and OCLC to develop the usability assessment methodology. The key aspects of the evaluation project are to:

1. Determine the ease with which expert and non-expert users can locate known materials in the collection;
2. Determine the ease with which expert and non-expert users can determine whether or not an item exists in the collection;
3. Determine the overall ease of use of the system by expert and non-expert users; and
4. Determine the extent to which the DCC interface meets selected accessibility standards.

These key aspects of the evaluation project determined the evaluation criteria for usability and accessibility testing of the DCC.

Members of the evaluation team coordinated research activities with the DCC project team in Gainesville, FL. Meetings with FCLA representatives, the FDLIS project manager, and other interested parties helped the study team develop usability criteria that reflect the needs of actual DCC users. These evaluation procedures will provide the FDLIS with an assessment of the degree to which the usability and accessibility of the DCC interface meets the requirements of the FEL. These data will be valuable in guiding the continuing development of the DCC interface.

Evaluation of the FEL Web Page Interface

The FEL web page interface evaluation project assesses the degree to which the existing FEL website is:

1. Usable under various resource seeking and retrieval scenarios; and
2. Accessible under various resource seeking and retrieval scenarios.

This evaluation focuses on the needs of librarians and patrons in searching for items or information, and the ways in which these groups would retrieve information utilizing the existing FEL web page interface.

Evaluation Approaches

Three specific evaluation approaches were used in the evaluation of the components of the FEL. The three evaluation approaches are:

- Usability testing;
- Functionality testing; and
- Accessibility testing.

Evaluation procedures included input from FDLIS, the Florida Portal Working Group, and other interested stakeholders in the development of the procedures.

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[7] Information Use Management and Policy Institute. (January 2004). *Development of the Florida Electronic Library: Three Initiatives.*

The following is an overview of the selected evaluative approaches used to frame the data collection methodologies developed to describe the measures and indicators outlined within the study:

- *Usability evaluation*: Usability can be seen as understanding the effectiveness, efficiency, and satisfaction with which specified users can achieve specified goals in particular environments. For purposes of this study, the study team employed a broader meaning for usability, using a selection of usability methods including policy analysis, website management and organization, technical assessment, and/or user satisfaction. The scope of the usability analysis specifically addresses the usability of the tested online interfaces for librarians and other library users.

- *Functionality evaluation*: This evaluation will inform FDLIS and interested parties of the effectiveness of the functionality of the Ex Libris Metalib/SFX interface that has been designed specifically for use with State of Florida online catalogs.

- *Accessibility evaluation*: The Institute staff has developed a protocol using criteria identified by the World Wide Web Consortium (W3C) Web Accessibility Initiatives (http://www.w3.org/TR/WAI-WEBCONTENT/) and Section 508 of the Rehabilitation Act to test for accessibility compliance and to identify adaptive technology issues.

The selection, development, and use of appropriate combinations of evaluative approaches is imperative in informing FDLIS and other interested parties of the functionality, usability, and accessibility of pilot programs in providing electronic access to information resources and services through the FEL.

EVALUATION RESULTS

Usability Testing

The study team developed standard usability protocols for the evaluation of the FEL web page interface, the DCC interface, and the Metalib/SFX product. Areas included within each of the protocols were based on the general information seeking behaviors of users. Aspects of each interface tested included:

- Aesthetics of interface design;
- Navigation between web pages;
- Ability of the users to locate and/or recognize necessary sources of information;
- User satisfaction with available content;
- Support features such as *find*, *search*, and *help*; and
- User satisfaction with overall search experience.

The final protocols were developed based on prior research experience of the study team, input from the FDLIS project manager, and input from other interested parties.

Evaluation Goals

The primary goal of each usability assessment is to evaluate users' interaction with the physical use of each interface as a product for inclusion within FEL, i.e. navigation, use of icons and other features, data presentation, content assessment, usefulness, etc. The primary objectives of the evaluation are to investigate:

1. Usability of primary navigation tools;
2. Access to and use of available resources; and
3. Obtain and understand users' expectations for potential uses of each interface.

The overall purpose of each evaluation is to provide FDLIS and interested parties with information to help them understand the user experience provided by each interface by looking at the usability and usefulness of each interface. Additionally, the purpose of each evaluation is to provide FDLIS and interested parties with insights into assisting library patrons in developing necessary skills and training to utilize each interface as part of the overall FEL.

Assessment of Each Interface within the FEL

Assessment includes evaluation of the *usability* of and the *usefulness* of data within each interface for planning, policy, training, and decision making. Questions guiding the usability and usefulness protocols include the following:

- What information and features do users want and expect to see on each interface?
- How do users and potential users expect to have information and features presented?
- What do users value in online interface and library database sites?
- What information is needed to indicate features that might be of use for different users?

Some primary questions used to frame the usability evaluation include:

1. Were the basic navigation and identification tasks intuitive?

2. Was data presented within each interface logical, clear, and easy to understand?
3. Did each interface perform as users expected it would?
4. Could the data obtained from the testing be useful for library planning, policy development, training purposes, and decision making purposes?
5. What are some specific recommendations to make each interface more useful?
6. What are some specific recommendations to improve each interface?

These and other guided questions were used to assess the experience of the user as to usability and usefulness of each interface for the FEL.

Usability Testing Methodology

Participants for the FEL web page interface (http://www.flelibrary.org) and DCC interface (http://bibt10f-8.fcla.edu/cgi/b/bib/bib-idx) usability studies included members of the library community (e.g., trained librarians and staff) and library patrons. Eight volunteer participants evaluated the usability of the FEL web page interface and the DCC interface using the usability lab protocol. Usability testing occurred within a usability lab setting where participants' interaction with the interfaces could be taped and recorded. Two members of the study team were present during the usability lab proceedings-one to direct the participants as they worked through the protocol and the other to run the usability lab equipment. The usability test instruments for the FEL web page interface and the DCC interface are available within this document. (See Appendix B for FEL web page interface usability instrument and Appendix C for DCC interface usability instrument)

Participants were encouraged to follow a *think-aloud* procedure during the testing in which the participant is encouraged to verbalize his or her thoughts as he or she performs a task. With this method, one researcher leads the participant through certain tasks, providing minimal guidance and reminding the evaluator to continue to talk through the thought process if needed. The search sessions were recorded using audio and video equipment, and the results from the separate evaluations were compared and compiled for triangulation of the data resulting in increased validity and reliability.

Participants for the Metalib/SFX interface (http://66.77.99.12:8336/V/) usability study included members of the library community (e.g., trained librarians and staff) and library patrons. Site visits to three of the ten Florida public libraries participating in the Metalib/SFX pilot program provided direct input on success rates of retrieving relevant information resources, etc. by library participants. The libraries visited by the evaluation team were located in Leon County, Orlando, and Jacksonville. Twenty volunteers from the three library pilot program sites viewed the Metalib/SFX test site and answered questions presented within the demonstration. The usability test instrument and the review guide are available within this document. (See Appendix D for Metalib/SFX interface usability instrument and Appendix E for Metalib/SFX interface review guide)

Demonstrations at two of the test sites for the Metalib/SFX interface were to individuals and small groups of individuals (six participants from each site) where a researcher guided the participants through the site using a prepared Metalib/SFX interface review protocol. Guiding participants was necessary due to the complexity of the test site and because none of the participants had an opportunity to pre-view and use the test site prior to the testing. At the time of the testing, the Metalib/SFX interface was located on a Metalib/SFX server. The test site was partially integrated into selected databases; however, the Metalib/SFX did not appear to be fully functional or integrated into any of the selected test site library home page interfaces or networked architecture.

Eight participants at the third test site watched the demonstration as a group and followed a focus group protocol in discussing the test site. The researcher encouraged the participants to "think-aloud" as

the site was reviewed and the researcher led discussions throughout the process using prepared "probing" questions to gain additional interaction from the participants. Six of the participants completed a survey form where answers to the usability study protocol questions and participant comments could be collected for evaluation by the research team. Two participants did not return survey forms.

Usability Results for the FEL Web Page Interface

Navigation: *Location and access to public library home pages*

1. Participants were asked to locate libraries and library home page interfaces from the FEL web page interface. While participants were able to locate the "Find a Florida Library" text fields, the participants felt that it would have been easier to find on the FEL interface (had to scroll down the page to see the link). The choice of searching by library name, city, or county name was seen by all participants as the right number of choices in locating a library.

2. Participants found the listings of all libraries within an area helpful because it gave an indication of the surrounding libraries, for example: the names and locations of branch libraries in the Tallahassee area. Several participants were not aware that so many branches existed within the Tallahassee area. This feature of the FEL gave the participants insight to other local library locations.

3. Four participants felt that the lists of libraries could be improved by indicating the closest library to them and the exact location of each library, for instance, by including a map and/or directions from well-known locations (i.e., the state capital, FSU, FAMU, etc.). All four felt that providing a map would help them identify which location would be most convenient to their home or work.

4. Six of the participants felt that a live link to each library home page should be available so they could actually go to the library home page once they located the library.

Suggested solutions

1. Move the "Find a Library" text box towards the top of the page so that users can find it more easily without scrolling.
2. Provide more detail when displaying the lists of libraries by offering map information and directions and include an overall area map highlighting all locations within a given area.
3. Provide direct links from each library found within the locate feature to streamline the user experience. Since many of the library home pages have maps within them, linking to the libraries could resolve the lack of a map or direction issues.

Access to Resources:

Ask a Librarian: When users were asked what they would do if they had a reference question, all users located the "Ask a Librarian" link, which they felt was a helpful and interesting way to get an immediate answer. All participants, however, felt the "Ask a Librarian" site was difficult to follow because:

- Interface did not resemble the FEL site and they were not sure if they were still on the FEL site or if they were on a new interface;
- There were limited directions provided as to procedure or what to expect;

- Text fields were not clear, i.e., "screen name". One user commented, "Am I supposed to make-up a name here or do I put my e-mail?"
- Expected to see a simple text box to type in a reference question;
- Did not expect to be re-directed to a local library's Ask a Librarian site.

Generally, all participants felt the "Ask a Librarian" site worked well, but each felt that more directions or a simplified process would help users. They all felt that many users would be intimidated by not understanding what was expected of them. All participants felt that many library patrons would shy away from the "live chat" feature either because they would not understand what chat would encompass or would not be technically capable of using a chat format.

Suggested solutions

1. Notify users with a text box indicating that they are leaving the FEL site to enter another site.
2. Give an introduction to the site and/or provide a friendly text box explaining how the "Ask a Librarian" services can be used, i.e. "Need some help?" or "Want to know more?"
3. Provide directions that detail what the "screen name" is and how it will be used in a chat session with a librarian. Also, if a screen name must be created, explain this within the directions.
4. Either plan to link the "Ask a Librarian" databases from around the state so all can be accessed for common questions, or begin the session by directing patrons to a viable "Ask a Librarian" site such as one associated with the patron's home library.

Health Reference Center database—all of the participants had a difficult time accessing the "Health Reference Center" database. Six of the participants expected to find the lists of databases under the "Resources" navigation link and not the "How to Use It" navigation link. Although all participants were able to find the "Health Reference Center", only one was able to easily go directly to the database name. The others had the following insights and thoughts:

- General assumption of all participants was that the database listing would be "clickable" to link directly to the database;
- When clicking "Access Resources Now" users expected to be able to select the target database and to go directly into the database but found no listing of the names of the databases (search frame);
- Four participants browsed "Help" directions and "Ask A Librarian" for answers on how to actually access the database to no avail; and
- Two participants noted that one needs a public library bar code number to actually access the database, yet this was not made from the "Access Resources Now" text.

Suggested solutions

- Move the "What Databases Are Available" link so that it is found under "Resources". This is where participants seem to look first to access databases.
- Provide explicit directions to how the databases can be accessed as opposed to a synopsis of each database.
- Make each of the listed databases on the "What Databases Are Available" page "clickable" (live links) so they link directly to the database.
- Provide more information on the "Access Resources Now" page so users know whether they need a public library bar code number before they search for a database or go to another page to get to the database.

- Provide a link from the bar code to an interface that will allow direct access to the database so participants don't search for something they cannot directly access.

Kids, Students and Families—all participants were able to locate the Special Topics area "Kids, Students and Families" resources with relatively no problems. The participants felt that the site provided easily accessible links to the list of resources. By providing a short list of four accessible databases, participants were able to see all of the options on one page without having to scroll further down the screen. Participants were able to locate electronic versions of items searched within this database without any difficulty. Five of the participants thought the results displayed for the titles provided the right amount of information, i.e. details of the item, full citation, etc.

PALMM—all participants were able to locate the PALMM (Publication of Archival Library & Museum Materials) database. Some general observations were:

- Once participants linked to the PALMM site they did not know if the site was part of the FEL because the color scheme did not mirror the FEL. The participants felt disconnected due to the lack of an obvious mechanism to "return to the FEL home page" or "home" function.
- When asked to locate the novel, "Aesop's Fable: A New Version, Chiefly from Original Sources", four of the participants used the **Literature for Children** title list. The general consensus from the search was if the title had not been the fourth item listed, the participants would not have continued scrolling down the page searching for the title. Two of the participants used WebLuis to search for the requested title. They both felt that the site's interface was inconsistent with the FEL, making it unclear if they were still on the FEL site or had been taken to another site.
- Participants felt that this is a good source for locating items but not for accessing items. Patrons can see if an item is available but not how or where. The link from the items is misleading; it just takes a patron back to the resources page and not to the item searched.
- Participants felt the site is intuitive in navigation and searching, aesthetically looks good, and has nice visuals.

Suggested solutions

- Notify participants with a text box indicating when they are leaving the FEL to enter another site. Doing this will allow patrons to know not to expect features typical of the FEL.
- Provide a mechanism to return to the FEL when participants are directed to another site, i.e. home button, new site as window within FEL interface where the FEL toolbars remain at the top, new site as new window where FEL home page remains open.
- Provide an alternative means of listing the results of a search such as a search using an alphabetical list tool bar, which is a feature that would allow users to click on a letter of the alphabet taking patrons to that part of the list of titles. This could help to eliminate some of the required scrolling to locate titles.
- If a link does not take a patron to the item they are seeking, the link should have an explanation of where the patron will go if the link is selected.

<u>Participant Comments:</u>

In general, participants felt the Florida Electronic Library was a good resource and six participants indicated they would recommend the site to a friend. The information provided on the site proved to be valuable. Particularly, participants found the "Kids, Students, and Families" section of the site to be a fun part of learning, something kids would use.

Participants also found in general that searches should lead to items. Databases should not only show items but also availability and location of items with a link directly to the item either within a database or library holdings. All log-in areas should be linked to one log-in screen. All participants felt that finding items and not getting information on location or availability, or directly obtaining the items would frustrate patrons expecting to find and obtain items.

Additional comments had to do with the aesthetic appearance of the interface. Most of the participants were pleased with the overall design and navigation features of the interface. Not knowing when they were leaving the FEL site was problematic and most felt patrons would become confused as to where they were within the system. Tags, warnings, or clearly marked means to return to the FEL would help when patrons had to leave the FEL web pages. Consistency in primary color schemes of toolbars, etc. would benefit patron's comfort levels in using the interface and its resources.

Usability Results for the DCC Interface

Navigation:

Search feature—participants were asked to conduct two separate searches using the terms *Tallahassee* and *wildlife.* All participants were able to retrieve results with very few, minor problems. None of the participants had any difficulty navigating the site or linked sites. Some general observations were:

- One user misspelled the term *wildlife* inputting the terms *wild life*, which retrieved no results. The participant was not sure what had happened and would have assumed no results if not prompted by researcher of their error or how to fix the problem so that results do appear.
- Four of the participants expected to be able to search by subject and not just by keyword in a text format.
- Participants' feelings on the amount of produced results ranged from somewhat helpful to very helpful as to number of records retrieved. About half thought the records produced were enough and the other half felt more records would be helpful.
- Participants were also evenly split on data within the records. Some of the participants felt the data was too in-depth for what a library patron would need, while other users felt that the information could be enhanced, i.e., specify the type of digitized document.

 Suggested solution
- Provide a listing of suggested alternative terms and/or keywords when patrons retrieve no results. Suggestions that closely match the original search term as input by the patron to aide the patron who has trouble pinpointing why their search did not retrieve any hits.
- Indicate within or next to each record the kind of document (i.e. pdf or painting) either as text, part of the record, or as a small icon so that users know what to expect when selecting the document.

Access to Resources:

Book bag feature—participants used the results of a search for alligators to assess features associated with manipulating results. All but one participant found the book bag feature to be useful in saving the results of a search, and two participants favorably compared its capabilities to the shopping cart feature found on websites such as *Best Buy* and *Amazon.com*. One participant commented, "It's like a shopping cart. It's cool how you can expand the record to see more information about the record." Only one participant was unable to locate this feature on the site and had to be guided to the feature.

Participants could not tell when a document was added to the book bag; the book bag did not appear on the screen. The book bag was automatically minimized on the screen, where only four of the users were able to notice it and then maximize to see content without help.

E-mail and *Empty Contents features*—the *e-mail* and *empty contents* features associated with the book bag did not cause any problems for any of the users. All participants were able to successfully email the contents of the book bag and to empty the book bag; however, several participants did note that they felt it difficult to determine if file was actually sent from the book bag when the item was selected.

A perceived problem with the book bag feature and emailing by all the participants was a lack of a means of selecting items to email or multiple items to delete. To email, a patron would have to either email all the items listed in the book bag or delete items the patron did not want to email but might

want to save for consideration later. When emailing, all items listed within the book bag are emailed unless individually deleted.

Suggested solutions

- When users select *Book bag* the feature should appear in a new window so users can see when and where their document are added.
- When documents are e-mailed and/or deleted from the book bag, an indication of these actions should be shown with a simple one sentence message, i.e. the selected file has been deleted from your book bag.
- When users have acquired more than one item in the book bag it would be helpful to have a check box adjacent to each file so that documents can be selected simultaneously for e-mailing and deleting. Additionally, a check box for all items to be selected could be added as well.

Florida Writer's Project Collection—participants were asked to locate "The Seminoles of South Florida" within the *Subject Area* of the Florida Writer's Project Collection. Some general observations:

- Several participants were surprised to actually find an image of a document and not a photo. They had not expected scanned text documents to be within the digital collection.
- Several participants expected to find some description accompanying the Seminole document.
- One participant expected a metadata description as a transition between selecting the text "The Seminoles of South Florida". Would have expected metadata to accompany the term if the next window was an actual digitalized image of a text document.
- Another participant added that he expected something to indicate the term had been cataloged, a short record that could be expanded. He also expected a page number where the term "The Seminoles of South Florida" was located. Something to show this page was not just a web page but was actually a catalog with records in table format where the individual records would be numbered, not just simply listed as if they were links to cataloged items.
- One participant suggested adding a search feature where items in PDF format only could be retrieved; another suggested search for photos only and not retrieve digitized text documents.

Suggested solutions

- Add description to the individual documents.
- Change the page (the subject area page) linked to a document to resemble a search result page by enumerating items and adding metadata to show a listing of records so as not to appear as a list of links.
- Add limiting features to the searches.

Additional Comments:

Print and save features were not included within the usability protocol; however, several participants did successfully try these features. The general comment on both of these features was the lack of any descriptive data accompanying items saved to the desktop or printed. Photos were printed without any difficulty (the alligator photo from the first keyword search) and were retrieved and opened without any difficulty from the desktop. However, without any description linking the photo to the actual item retrieval description a participant could have difficulty replicating the search. Each photo could have an identifiable number or label so a patron could replicate these searches.

Usability Results for the Metalib/SFX Interface

Twenty participants took part in the usability study; however, two participants from the group of eight at the third site selected not to complete a survey but participated in the group "think-aloud" aspect of the usability study. None of the participants had previously viewed the test Metalib/SFX interface. Three of the staff participants indicated they knew their library was part of a pilot study, but none of these individuals had knowledge of integration or implementation plans for the current Metalib/SFX interface within their library web pages.

Questions 1-7 of the survey form collected demographics of the participants. Of the eighteen participants who completed a survey form, thirteen indicated they are library patrons and five current library staff members. The five staff members consists of three reference staff (RStaff), those directly involved in daily interaction with patrons; and two technical staff (TStaff), directly involved in web development and training of staff and patrons in the use of their library's electronic sources, programs, etc.

Survey Demographics: characteristics of the thirteen patrons

- Eight are female age range 18-58, five are male age range 27-74;
- Twelve of the patrons have current public library cards;
- Three rank their Internet skills as Fair, four as Good, five as Very Good, and one as Excellent;
- All thirteen regularly access the Internet from Home or Work; and
- One has a High School degree, four have Some College, seven have a Bachelor degree, and one has a Graduate degree.

Survey Demographics: characteristics of the five staff members

- Four are female age range 27-56 and one is a 35-year-old male;
- All have current public library cards;
- Three rank their Internet skills as Very Good and two as Excellent;
- All five regularly access the Internet from Home or Work; and
- One has Some College, two have a Bachelor degree, and two have a Graduate degree.

Questions 8 through 17 of the survey allow participants to respond to a Lykert scale, range from Strongly Disagree (1) to Strongly Agree (5), and to add comments from the "think-aloud" approach. The scale includes a sixth potential response, Unable to Assess (6); however, none of the participants selected this as a response for any of the questions.

	Strongly disagree	Disagree	Undecided	Agree	Strongly agree	Unable to Assess
Questions 8 through 17	1	2	3	4	5	6
Please comment:						

Questions 18-21 allow participants to supply additional feedback from their experience in viewing the Metalib/SFX interface.

Summations of the usability results are presented by question as presented within the survey form. Summations of participant replies to the questions are presented for the most part by patron and by staff, with the staff responses further distinguished by RSstaff (reference staff) or TStaff (technical staff)

when applicable. Summations are also differentiated when applicable by survey response (Lykert scale) and by general comments (written and verbal think-aloud comments presented by participants).

Note: *Suggested Solutions* are not offered within the presentation of the following usability test results of the interaction by patrons and library staff members with the Metalib/SFX interface. The Metalib/SFX interface used within this usability study is not fully integrated within a library database system so the extent of full integration through implementation is unknown at this time. General suggestions are included within the recommendation section of this document.

Results from Survey Questions:
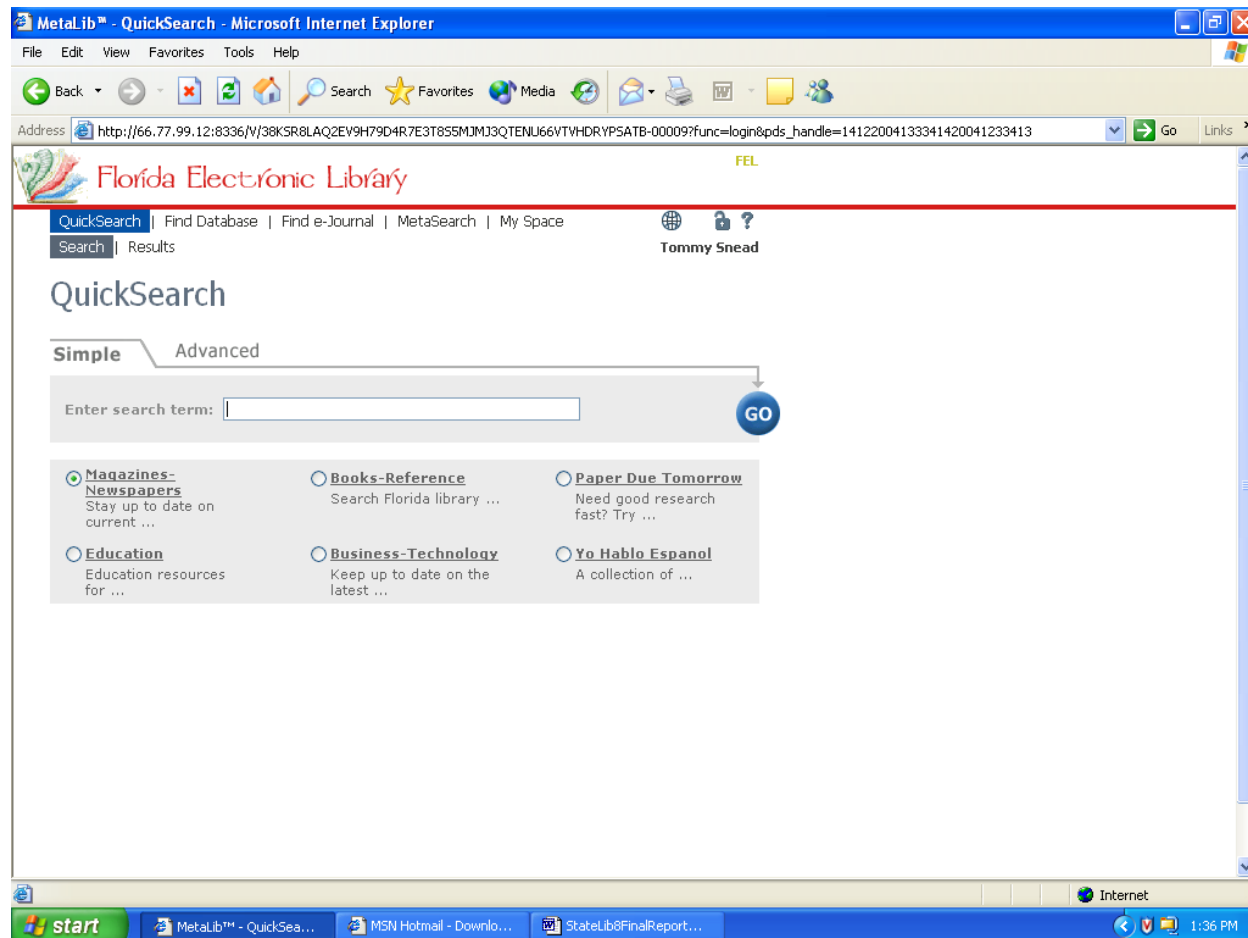
Illustration 1: Metalib/SFX Search Interface

8. *The databases are logically grouped by relevant general search areas*.

[The question directs attention to the pre-developed groupings of databases located on the initial search screen. Individual libraries could determine the grouping of databases based on constituency use and need, cost factors of databases, and labeling of database groups.]

Patrons: One undecided; twelve agreed or strongly agreed.

Patrons liked the idea of grouping databases for searches; however, as a group they were unfamiliar with individual database content or with the conceptual or physical concepts of a database, i.e. what is a database and how does it affect a search?

Staff: All agreed or strongly agreed.

Staff members felt it was important that libraries select databases to include within each search group and generally liked the idea of grouping like databases for patrons. Staff thought patrons should be able to search more than one grouping at a time and radial buttons might be more useful if a user could search more than one database group at a time. Staff felt patrons would need: 1) more experience with results provided from each grouping to know if additional searches may be needed; 2) database knowledge in selecting database groups to search; and 3) the option to search all databases should a patron want this option or need this option due to lack of knowledge of databases. Also, staff members felt more information should be present to alert patrons that a pre-selected default database group is present so patrons will be aware of which database group is being searched.

9. *The results are displayed in an easy to read and understand format*.

Illustration 2: Quick Search Results

[The question is directed at the results of a simple search where arthritis was entered as the search term in Simple search and Books-Reference was the selected database group.]

Patrons: One undecided; twelve agreed or strongly agreed.

Patrons felt the results were easy to read and understand.

Staff: Two RStaff disagreed and one was undecided; both TStaff agreed.

All staff indicated that duplicate entries should not be listed within the results, particularly if the list of results is to be limited to sixty or ninety returns. All staff preferred other methods to limit or refine results. One staff member wanted access to the additional items returned from a search during the search process, i.e. sixty pre-determined results of 2183 total hits.

10. *The Basket feature will enhance my search experience*.
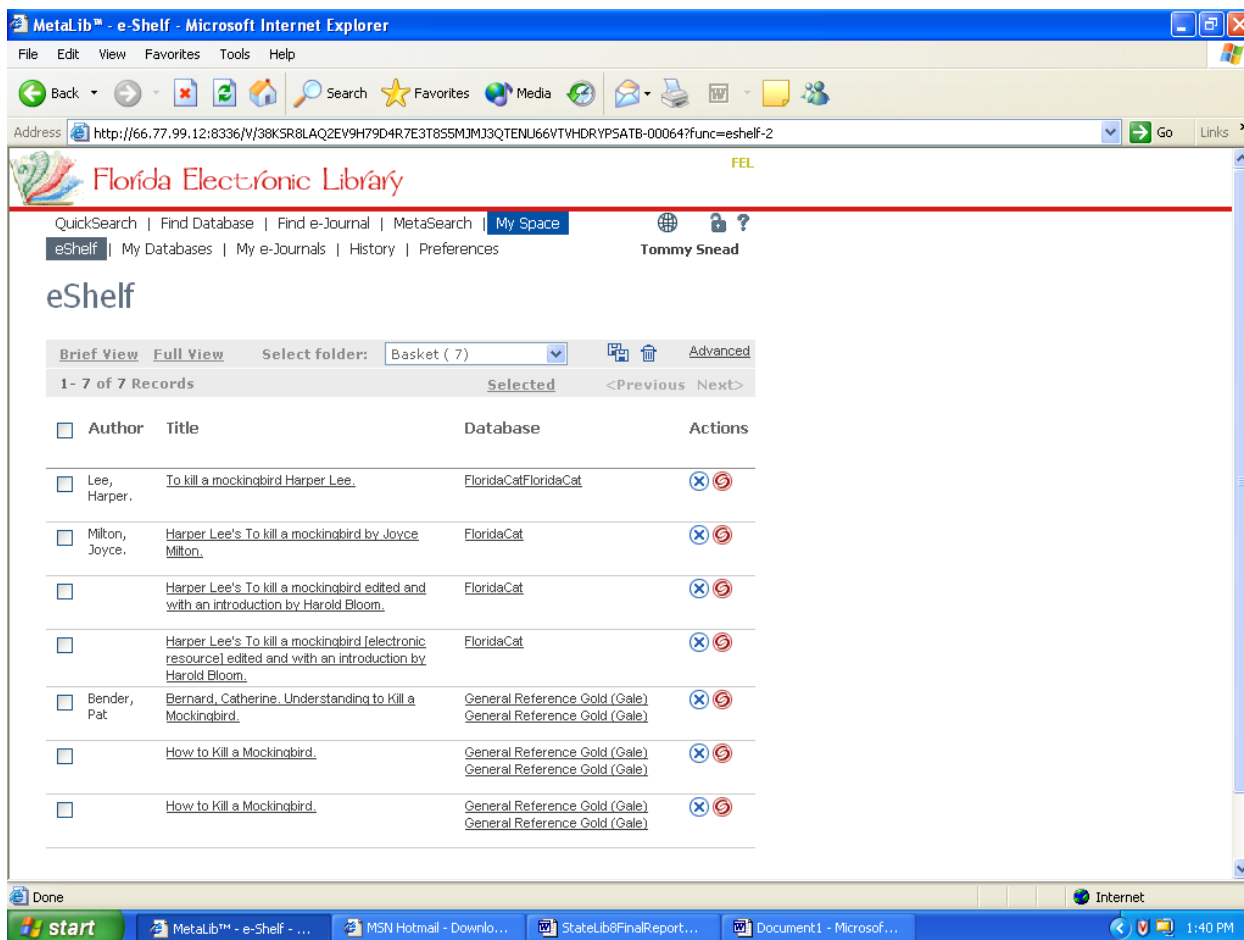

Illustration 3: Items Saved to the Basket

[The question is directed at the ability of users to save search results from question 8 into a personal basket of saved items for future use.]

Patrons: Nine agreed or strongly agreed; three were undecided; one strongly disagreed.

Patrons' comments on use of the basket ranged from maybe to would not use. Several patrons indicated they do not use databases in their searches assuming databases are for article searches only. One patron said, "I don't use databases or search for articles much." Patrons did not like the labeling scheme and suggested that My Space either be labeled My Basket or that My Basket has a separate link as an option within the toolbar. Patrons also felt users should be alerted if a previously selected item was already in the basket. Most patrons agreed that saving articles to a basket would allow articles to be accessed easily if search were to continue or for future use, but most also thought they would not use the feature.

Staff: Two RStaff were undecided and one strongly disagreed; both TStaff agreed.

Staff members agreed with patrons on the need to label My Space, My Basket or vice versa. Several thought going through My Space to locate the saved items was an extra unnecessary step; saving to My Basket should default to My Basket.

11. *Saving items to search folders that I can name will enhance future search sessions*.

[This question addresses the ability of users to transfer items from My Basket into temporary search folders users can name for user reference. This feature allows users to sort and group similar items into named and saved folders.]

Patrons: Ten agreed or strongly agreed; three were undecided.

Patrons thought the strengths of this feature were a user could leave and come back and this could be important for major projects that might need to be reviewed more than once. Patrons also seemed to agree that they would not use or need this feature.

Staff: Four staff members agreed; one staff member was undecided (RStaff).

Staff members thought this feature was useful, easily usable, and would save time for those who needed this type of feature. One TStaff member was concerned as to whether this feature would work with the configuration of the library computers. One RStaff member added, "Saving search results is useful; yes, if I can access my folders at different library locations."

12. *The labels, i.e. Find Database, My Shelf, My Databases, and the icons, i.e.* *,* *etc. adequately guide me through the process of creating a customized database group*.

[This question is directed at the use and understanding of icons and labels presented within this interface.]

Patrons: Two disagreed or strongly disagreed; three were undecided; eight agreed or strongly agreed.

All patrons felt the icon for SFX needed to be labeled; all icons were too small to see well; need some sort of text explanation to explain what each icon is and each icon's function. Some patrons felt some of the labels, i.e. My Space and eShelf, needed to be re-labeled and further explained. Additionally, patrons looked for a help feature but could not find one (did not note the question mark icon). Two patrons noted the question mark and guessed that might be help but did not understand why it didn't just say Help. All patrons felt additional training, either through use or a

tutorial would be helpful. Also, two patrons felt they needed more help with understanding meaning and use of some specific terms, such as eShelf and database for My Database.

Staff: One TStaff strongly agreed; four others either strongly disagreed or disagreed.

Of the four who disagreed, they felt that all of the icons and most of the labels would require re-labeling and needed more explanation for typical library patrons; they felt the site was not intuitive at all for navigation by public library patrons. They added labels need to be consistent (ex. My Basket held within eShelf of My Space). One staff member wrote, "I can understand My Databases but not eShelf." All staff members agreed that additional help would be needed for this site, i.e. text to accompany all icons and labels, a help function, contact means with a web developer to ask for technical help, some sort of tutorial, glossary of terms, etc.

13. *The ability to create and change customized databases during future sessions is useful to me*.

[This question addresses the ability of patrons and other users to create their own customized database groupings for use in searches.]

Patrons: Two disagreed; six were undecided; and five agreed or strongly agreed.

Patrons who disagreed or were undecided felt the feature was useful, and individuals doing research or staff members might use it; however: 1) they and other patrons like them would not need to use this feature; 2) they felt there were too many steps involved to create customized database groups; and 3) a tutorial or training of some sort would be needed before they could ever use this feature. Patrons who agreed or strongly agreed felt this feature would help in efficient and more productive searches; however, they also felt the feature would be good for others but as one patron wrote, "I would need help understanding it myself".

Staff: One disagreed; one was undecided; and three agreed or strongly agreed.

All felt the feature would be useful for staff, but not for patrons, at least initially. They all felt the database search too technical for patrons, with one commenting," What if I don't know the name of a database, I'll need to browse by subject and this feature isn't available." The one TStaff member who strongly agreed thought the customized database feature was extremely helpful.

14. *The SFX search process simplifies the search experience*.

[This question is directed at using SFX to extend the initial search process without having to start over with a new search. Illustration below.]

Patrons: Four strongly disagreed or disagreed; six were undecided; and three agreed or strongly agreed.

All patrons felt: 1) this feature seems like a good idea; 2) they don't understand what it does; and 3) it is too difficult of a process with too many new windows and steps. The patrons who strongly agreed or agreed were not sure what SFX does, but it seemed like a good idea for researchers, i.e. staff members and academics.

Staff: Two disagreed; one was uncertain; and two agreed.

All felt SFX gives more options, but would be confusing to someone who is not familiar with Gale Groups, OCLC, WorldCat, etc. Those who disagreed felt SFX was too technical for typical patrons, with one saying, "SFX has no meaning to me either." Those who agreed thought SFX was a very good feature as an option in searching, although they agreed with the other staff members that SFX would be difficult for the typical library patron.

[The following illustration is for questions 14-17]
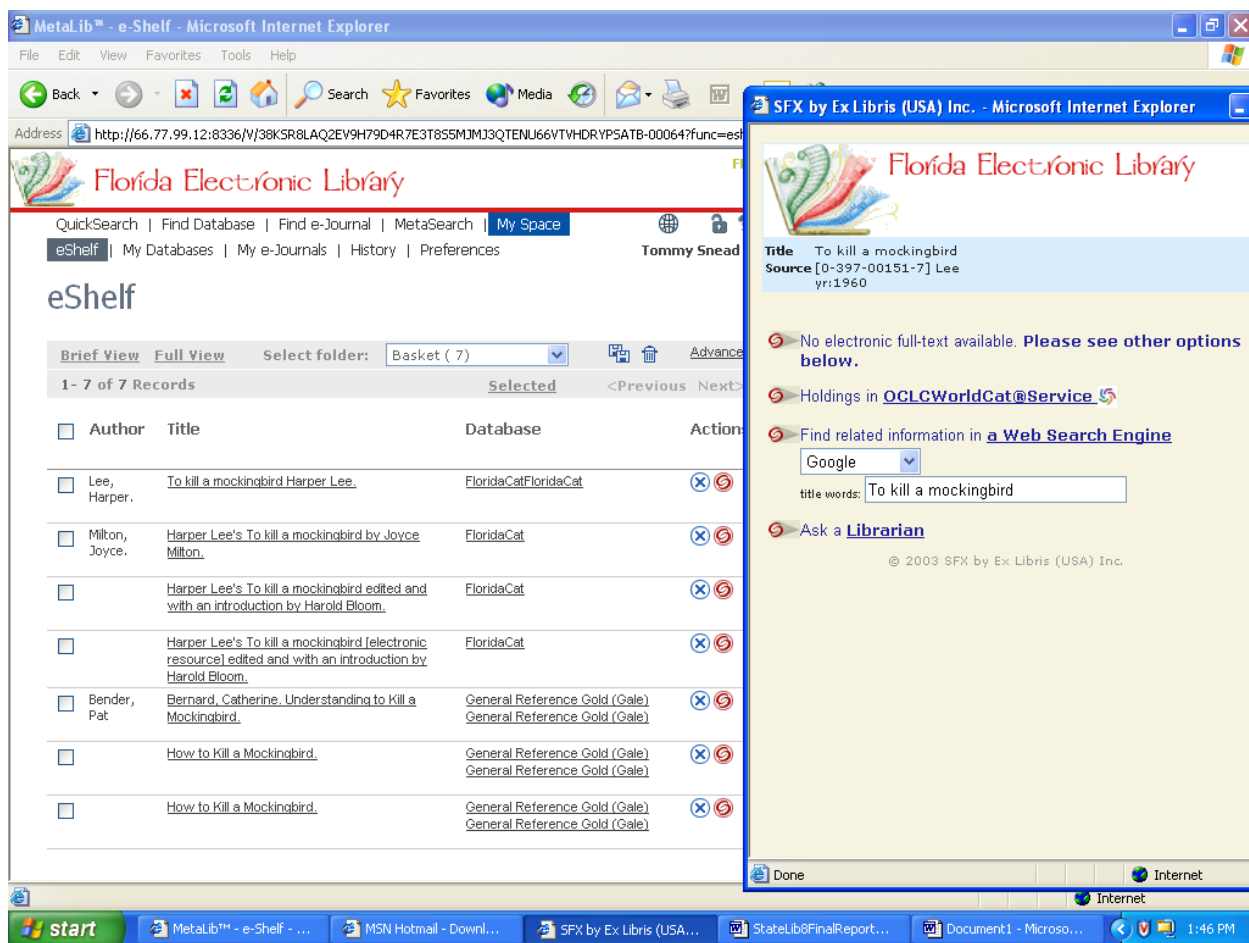
Illustration 4: SFX Search Window (Pop-up)

15. *SFX helps me locate items*.

[This question was directed at the potential of SFX in locating and obtaining items.]

Patrons: Two disagreed; six were undecided; and five agreed or strongly agreed.

None of the patrons understood what SFX does even after it was demonstrated. All thought SFX would help staff and researchers; all were unsure of what they were seeing; and all thought SFX seems like a good idea. Patrons who agreed thought SFX would help to identify the location of searched documents; however, they also agreed with the other patrons (undecided and disagreed) that they would not use this feature due to it seeming too complex to use.

Staff: Three were undecided; two agreed.

All felt SFX would be great if as one put it, "You know how to use it." They all thought it was too complex, similar difficulty level to setting up databases and was not useful for typical library patrons. One TStaff thought it "would be especially great for ILL."

16. *I find the addition of Google as a search link useful from this location within the SFX link*.

[This question addresses having a link to Google from the SFX search window.]

Patrons: Four disagreed; one was uncertain; and eight agreed or strongly agreed.

Patrons who disagreed thought Google from the SFX search window would not be useful for locating library materials which was their purpose of using the library page to begin with. One patron who disagreed stated, "I'd just open a new browser for any other search engine instead of work out of like the third or fourth window opened during a search." Those who agreed liked it that searches would not be limited to just a library's databases.

Staff: One disagreed; one was uncertain; and three agreed.

Those who agreed felt this was not especially useful to patrons for a search, but patrons might use Google from this location if they were giving up on their search. One RStaff who disagreed noted that, "Patrons are usually familiar with Google and have already used it before they get to this page; but this takes you outside of your database and your user may not know they are at another website."

17. *I find the addition of Ask a Librarian as a search link useful from this location within the SFX link*.

[This question addresses linking "Ask a Librarian" from the SFX search window.]

Patrons: One disagreed; one was uncertain; and eleven agreed.

Those who agreed thought linking from the SFX window to "Ask a Librarian" gives patrons the ability to have personal assistance in obtaining needed information. The one that disagreed thought it gave the impression that "I can get any questions I have answered right away", yet the link was not to a specific library.

Staff: One was uncertain; four agreed.

All thought the link allows customers to ask for some help at point of search; however, one asked if this link was more for reference or technical help.

18. *Please identify the 3 most useful search features on the site*.

Patrons identified the following as most useful: pre-created search groups; link to Google; the quick search feature; link to "Ask a Librarian"; the ability to create customized database groups; and SFX.

Staff identified the following as most useful: ability of users to customize search by creating database sets; ability of library to customize some features; link to Google; pre-created groups of databases by

libraries; saving searches for future use; the ability to simultaneously search more than one library; and the ability to see and locate text articles online.

19. *Please identify the 3 least useful search features on the site*.

Only one patron responded to this question and answered SFX.

Staff identified the following as least useful: no way to narrow (limit by refining) searches from basic search results; My Basket feature is too confusing; names of spots (icons), [e]shelf, [my] space, [my] basket are incongruent and not user friendly; too many steps for features such as My Basket, saving items to folders, creating customized database groups, and SFX; [existing] help files not enough help [question mark]; [interface] too complex for typical library patrons; inconsistent buttons with hyperlink themes; and not enough screen information to guide user.

20. *What suggestions would you make to improve the site*?

Patron suggestions include: [adding to this site so] users can find "stuff" in their library today [using the current search]; more color and movement within the interface; lack of labeling—needs more; and lack of a tutorial—need to add one.

Staff suggestions include: make it more intuitive; use more consistent labels; add more help files; the site needs to be more explicit for users; and simplify, too many steps to make things happen.

21. *How usable do you feel the site is overall*?

Patrons felt that the site: could be usable; not that much for the average patron; and some felt the site is very usable. One patron said, "For me, if I could be shown/walked through on how to use it, I think it'll be very useful."

Staff felt that the site: probably would be useful to staff, but not user friendly and general patrons probably can't use it; at the moment not very usable for the public library setting, it looks great for academic libraries; it's a disjointed application, general public will need more explanation; for our staff, has potential, for public library patrons not so much; right idea, need better GUI; not realistic for usage by the average person; this is a great feature for the Florida Electronic Library.

One staff member added, "We already have a very functional search website, which seems to be more user friendly. This is a very confusing search application."

Additional Participant Comments and Summary:

        In general, participants (a mix of library patrons and library staff members) felt the simple search features and retrieval of items to be adequate to meet the needs of most library patrons. Staff participants felt their own search interfaces were superior and offered features such as the ability to refine and limit searches that this site apparently did not offer. Staff participants also felt their own library web sites offered a more familiar and simpler approach to locating resources by patrons.

        None of the participants had used or seen the interface so none had any experience in navigation or use of the site. The lack of familiarity with the site along with the site not being fully implemented within a library interface limited the evaluation of the site by the participants. Participants could see potential for usability and usefulness of many of the features, but without the familiarity, the perspectives of both patrons and staff were that library patrons would not like, could not use, or want to use many of

the features. Additionally, without having a fully functional site to evaluate, staff participants in particular tended to view the site negatively for patron use and cautiously for staff use. Of primary concern for both staff and patron participants was the learning curve they perceived patrons would have to overcome to find the site usable and useful.

Patrons agreed that grouping databases into relevant general search areas by libraries was logical and practical. Patrons were comfortable with the site's search features and thought the bookbag feature, with the ability to save searches into patron-created folders would enhance the search experience. They had difficulty with comprehending the meaning of some of the icons used throughout the sight and in labeling of areas such as My Shelf and eShelf, particularly since accessing the bookbag feature is through the My Shelf feature, a step that was confusing to both patrons and staff. They were not comfortable with creating customized database groups or with SFX, although they were intrigued at the potential usefulness of both features. They presented mixed opinions on the usefulness of linking Google to SFX, but thought the addition of a link to the "Ask a Librarian" interface would be helpful.

All participants verbally admitted and were concerned that utilizing many of the features, those beyond simple search would require additional training and guidance before patrons would be able to use the features. Staff participants felt that the training needed for patrons was beyond the scope of most patrons' needs and the ability of many patrons. In general, the patrons liked what they were seeing and wished they could use the features, but they also perceived the usability and usefulness of many of the features to be beyond the skill levels of typical library patrons.

Staff participants tended to agree with the overall assessment by patrons of the usability and usefulness of many of the features for typical library patrons. Staff agreed that logically grouping databases, saving searches, and linking to the "Ask a Librarian" interface could be helpful to patrons. Staff held mixed opinions on the bookbag feature, feeling the feature would be useful but at the same time the feature was too complicated, or took too many steps to be used by patrons. Staff agreed with patrons on problems with icons, labeling, and on SFX being too complicated to use as well. All participants liked the potential of SFX but felt the process to use SFX impractical for typical library patrons.

Functionality Testing

Members of the study team evaluated the Ex Libris interface (http://66.77.99.12:8336/V/) for functionality using a modified version of a functionality form previously created for evaluation within the FEL. Prior testing of the *FEL Evaluation Form* occurred in the evaluation of three FEL pilot programs: 1) SEFLIN; 2) CCLA and TBLC; and 3) TBLC.[8] The study team also relied on criteria identified by Dr. John Bertot in his 2002 assessment of the electronic library interface prototype for the state of Texas (ZLOT)[9] in developing the original functionality form and in modifications to the present form. The research team modified the current functionality form for assessment of the Metalib/SFX interface based on:

- Results of a prior ZLOT study (Texas, 2002; more information available below) and the 2003 FEL Pilot Project Functionality Study;
- Access to and print copies of (when necessary) various pilot project reports and related information such as project dates, project aspects, and any other information that may impact functionality testing as provided by the FDLIS project manager;
- Relevant information from other FEL working groups, consultants, Ex Libris, and others as necessary and as provided by the FDLIS project manager;
- Information obtained as to status of Metalib/SFX development obtained from the Florida Library Association Conference (March 2004);
- Ex Libris training sessions (March 2004); and
- Site visits to three of the ten selected Florida public libraries of this demonstration product.

A list of functions, identified in the ZLOT study, the FEL Pilot Project study, site visits, and other information resources was used to create the final test list of features and functions tested during the assessment of the Metalib/SFX product. Final functionality requirements for testing were determined as the project progressed.

Members of the study team evaluated the functionality of the Metalib/SFX product and its retrieval interface in terms of a set of essential functions identified by the study team during prior functionality testing within the FEL. Functions evaluated were:

1. Ability to group—user can group results by lending library;
2. Limiting—user can limit searches by library (e.g. selecting a specific library or group of libraries, limiting by types of libraries or locations of libraries, etc.);
3. Search process options—user can perform basic and advanced searches; searches can be done by subject, author, keyword, and title;
4. Stated location and availability of resources—results include the name of the lending institution and the availability, call number, and format of the item retrieved;
5. Languages—search can be performed in a language or languages other than English;
6. Ability to refine searches—user can search results at a greater level of specificity once results have been retrieved;
7. Equivalence of results—same items are retrieved across test public library portals and native online public access catalogs (OPACs);
8. Support/instructions/help tools—instructional rubrics guide users through the search process;

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[8] Information Use Management and Policy Institute. (July 2003). *Florida Electronic Library: Pilot Project Functionality Testing Methodology*. Available at: http://www.ii.fsu.edu/projects/2003/state_library6/functionality.report.09_14_03.pdf
[9] ZLOT Project. (2002). Available at: http://www.unt.edu/zlot/phase1/del_g_poc_eval_wem_1Dec2002.doc

9. Save/print functions—users can save entire results listing or select portions of the results list and can print results in whole or by selection; and

These functions cover a diverse range of portal interface capabilities and are based on the general information behaviors of users, whether patrons or librarians.

Functionality Methodology for Metalib/SFX

Four members of the study team conducted the functionality testing of Metalib/SFX. Results of the functionality assessment as presented are based on a Functional Requirement Capability Index[10] where points for each question represent sums of the results of each evaluator. Each individual functional requirement (and its subcomponents, if applicable) receives a score from each evaluator. The index indicates by percentage the extent the Metalib/SFX interface satisfies potential capability for each function tested. Points for each functional requirement were assigned using the following values:

- Yes, the feature or function was present = 2
- No, the feature or function was not present = 0
- Somewhat, the feature or function was partially present = 1
- Not applicable = N/A

Each study question was evaluated on this scale of zero to two (0-2) by four evaluators. The totals for each question represent the combined scores of the evaluators. The combined minimum number of points possible is zero (0), and the maximum number of points is eight (8) for each function or each function's subcomponents (2 points maximum x 4 testers). If a study question contained multiple parts, each part was assigned a separate total score. A resulting score of 6 points out of a possible 8 is shown as 75%. To test the specific functions as described above, the study team used the following search strings:

Search Type	Search String I	Search String II
Subject	Arthritis	West Nile Virus
Author	Austen Jane	Gould Stephen Jay
Keyword	Mosquito	Kayak
Title	To Kill a Mockingbird	Living History

The procedure for evaluation is for each evaluator to begin with Search String I. If no results are retrieved for terms within a search area for Search String I, terms from Search String II are used to obtain search results. For the functionality assessment of Metalib/SFX, each of the evaluators only needed Search String I to obtain results to evaluate the Metalib/SFX interface. The functionality instrument used to guide this assessment is attached at the end of this report (See Appendix F).

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[10] This index has been applied to the assessment of online virtual catalogs in previous studies. See Texas Center for Digital Knowledge. (2002). *Assessment of ZLOT Resource Discovery Service Proof of Concept Prototypes*. Denton, TX: University of North Texas.

Functionality Results for Metalib/SFX

The results for specific functions assessed are presented in the following table.

Question	Functionality	Points	%
Question 1 (Q1)	Can users group items in searches (e.g. by type, format, author, date)?	4	50
Question 2 (Q2)	Can a search be limited to particular location(s)?	0	0

Question 3 (Q3)	Do the search results indicate an item's:
	    A: call number?
	    B: location?
	    C: availability?
	    D: format?
		
		A: 0
		B: 0
		C: 0
		D: 4
			
			0
			0
			0
			50

Question 4 (Q4)	Does the search process have functions for:
	    A: advanced searching (ability to search 2 or more fields at once)?
	    B: keyword?
	    C: subject?
	    D: author?
	    E: title?
		
		A: 8
		
		B: 0
		C: 8
		D: 4
		E: 4
			
			100
			
			0
			100
			50
			50

Question 5 (Q5)	Can searches be performed in any languages other than English?	2	25
Question 6 (Q6)	Can searches be refined?	0	0

Question 7 (Q7)	Does the site provide:
	    A: support?
	    B: instructions?
	    C: help tools?
		
		0
		4
		2
			
			0
			50
			25

Question 8 (Q8)	Can user:
	    A: save entire results?
	    B: save selected results?
	    C: print entire results?
	    D: print selected results?
		
		0
		8
		0
		8
			
			0
			100
			0
			100

<u>Results</u>

Q1: Can users group items in searches (e.g. by type, format, author, date)? (and)

The Simple Search does not provide users the option of searching by fields. The advanced search does allow grouping items for searching two separate terms with selection options from a set number of fields so grouping is allowed but limited.

The Metalib/SFX advanced search feature allows searching of two separate terms using the Boolean operators **and**, **or**, and **not**. Each term used also has the following options of fields for the search: **All Fields**, **Subject**, **Title**, **Author**, **ISSN**, **ISBN**, or **Year**. Users are able to group two items in a search, have a selected field for each term, and use Boolean operators to create relationships between the terms.

Q2: Can a search be limited to particular location(s)?
Evaluators were unable to locate a limiter by location within the quick or advanced search.

Q3: Do the search results indicate an item's:

A: call number? Not available within retrieved item records.

B: location? Not available within retrieved item records.

C: availability? Not available within retrieved item records.

D: format? The format appears within some records; however, *format* as a label or format within the record where the description includes the term "Book" was not evident in any of the records viewed by the evaluators.

Ex: Conduct a search within the "Books-Reference" grouped databases and some of the records indicate "short article" or "Series". Some *formats* may be intuitive for users who view the fields within the record such as "Description", "ISBN", "ISSN", etc.

Q4: Does the search process have functions for:

A: advanced searching (ability to search 2 or more fields at once)? Advanced search allows a user to search two terms with each term limited to one of the available fields (**All Fields**, **Subject**, **Title**, **Author**, **ISSN**, **ISBN**, or **Year).**

B: keyword? Quick Search and Advanced Search (using All Fields) may search by keyword but **keyword** as a search field could not be found by the evaluators as an option for users to select.

C: subject? Advanced search allows searching by subject.

D: author? A search for "Austen Jane" and a search for "Jane Austen" using **All Fields** and sorting the results by **Author** did not produce any works by Jane Austen within the 60 "pre-selected by rank" items of 2630 and 2675 respective total results. A search for "Austen Jane" using the Author field produced one item (total), a compilation of three novels by Jane Austen compiled within one work attributed to Jane Austen as the author. A search for "Jane Austen" produced two total results both by Jane Austen.

E: title? A search for "To Kill a Mockingbird" using **All Fields** and sorting the results by **Title** did not produce the original book within the first ten displayed records of 244 total results. The book by Harper Lee was number 20 within the list. Searching for "To Kill a Mockingbird" using the **Title** field and sorting the ranked results by Title produced the book by Harper Lee as the 24th item within the list.

Q5: Can searches be performed in any languages other than English? The top toolbar of the site has an icon (earth?) with a drop-down box that has the terms: English, French, and Spanish. When selected, each term acts as a live link and creates a refreshed page; however, no changes seem to appear on the refreshed page. No language other than English appears within the search interface or within the results. The results of searches do not retrieve "French only" or "Spanish only" items either, so search capability in any language other than English is not evident. Two evaluators

selected "somewhat" with the understanding that this site may still be under construction and language is a future feature.

Q6: Can searches be refined? Searches cannot be refined from the initial pre-selected and ranked results. Pre-selected results are typically of a larger number of total results; however, selecting a database from within the displayed items does not take a user to the database for further searching. Databases within the displayed records appear as hyperlinks to the actual databases, but the hyperlinks are not activated. It is unknown-if the hyperlinks were activated-if a user could refine the original search from that link.

Q7: Does the site provide:

A: support? No support functions such as email for technical support or phone numbers could be located within this site.

B: instructions? A question mark (?) icon is located within the toolbar of each page; however, the icon was not active from all pages. Mouse-over on the icon produces a drop-down box with the term "Help". When selected, a window opens with brief instructions on how to use selected features of the site. The "help" includes an "Index" with hyperlinks to go directly to sections within the help site which aids with navigation within the help section; otherwise, the help is a "scroll box" and a user must scroll through each section to locate the desired help.

C: help tools? Other than the instruction window, no additional help tools were evident within this site. Two of the evaluators marked "somewhat" and suggested the instructions included what might be considered minimum "help tools". Some terms were hyperlinked to their respective sections within the instructions. These hyperlinked terms could be considered as navigation aides within the instructions although no location markers existed within the help section.

Q8: Can user:

A: save entire results? The "Quick Search Results" page, which includes both simple and the advanced searches, does not have a feature to save the entire results.

B: save selected results? Users may select individual items and save them to a "basket" by selecting the "basket" icon beside each retrieved item. Viewing items selected, however, is a multi-step process; the term "Basket" does not appear within the toolbar at the top of the page. When the item to be saved is selected (click the basket icon) the icon changes color and a small arrow appears below the icon. These are the indicators for the user that the item is selected and saved to a basket. Users view the items saved to their basket by completing the following steps:

- User selects **My Space** from the tool bar option at the top of the page;
- Page titled **eShelf** appears with the saved items appearing in a box below;
- Feature called "Select Folder" contains a folder named "Basket"; and
- User determines that the items listed belong to the folder named "Basket".

The user goes to the **eShelf** page to see the items are saved to a folder named "basket". Other than the icon changes above, no prompts or messages appear telling the user the item has been saved.

C: print entire results? The "Quick Search Results" page does not have a feature to print the entire results.

D: print selected results? Users may print saved messages by one of two means. The user can right click on the page and use the print option that appears, or the user may use the print option supplied by the browser to print saved items. A print option was not found within the Metalib/SFX interface.

Members of the study team evaluated the Metalib/SFX interface using the currently available version of the Metalib/SFX product. The current Metalib/SFX interface was not integrated within a library setting. It was available from the Metalib/SFX test site located on a Metalib/SFX server. As such, the final state of the interface is not known. It is not known if additional features will be added or if integration and implementation within a library setting will enhance the current functionality of this site.

Accessibility Testing

Accessibility is the level at which a technology can be used by individuals with disabilities. This can include having built-in accessibility features and working with adaptive technologies that individuals with disabilities may be using. Accessibility testing is particularly important in Florida as many seniors have disabilities including visual, hearing, and mobility impairments that impact the ability to use Web-based materials.

The accessibility of websites is commonly measured using two sets of standards—the World Wide Web Consortium guidelines for accessibility (http://www.w3c.org) and the federal legal standards of accessibility established by Section 508 §1194.22[11] of the Rehabilitation Act (htpp://www.section508.gov). Members of the study team evaluate selected criteria as developed from the accessibility standards as described in the first methodology section. The accessibility testing instrument is included within this document. (See Appendix G)

Accessibility Results for the FEL Web Page Interface

Overview

The accessibility testing of the Florida Electronic Library website (http://www.flelibrary.org) was conducted by four Information Institute researchers in July 2004 to ascertain the levels of accessibility of the website for persons with disabilities. The researchers focused on both established principles of accessibility, such as clear layouts and obvious navigation features, in website design and on how the website functioned when interacting with assistive technologies, such as screen enlargements, alternate color schemes, and screen readers.

The goal of this testing was to provide a comprehensive understanding of accessibility issues that users with a range of disabilities, including visual impairments, hearing impairments, learning disabilities, and mobility impairments, might encounter when using the site. Each testing question is accompanied by a suggestion line for addressing the issues, and guidance for addressing these suggestions can be found at the World Wide Web Consortium website () or the Section 508 website (http://www.section508.gov).

Testing Questions

The website was evaluated using specific questions to frame the testing. Listed below are the questions, a description of the findings related to the questions, and the importance of the findings.

1. Provides equivalent alternatives to auditory and visual content?

   The FEL website provides auditory alternatives for some content when using screen reading software. The audio describes page and color of frames, but it cannot read text from page content. The audio reads main headings but not secondary headings or the content of text boxes. Overall, the auditory device cannot read text on the page, text within boxes, text in Spanish, graphics, and links. By users not receiving an audio interpretation of all of the text and graphics, they will be unaware of much information and many of the features present on the interface.

   The font size is predominantly static, which means that the font does not increase in size when the screen enlargement software is employed, making it very difficult or impossible for some users to

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[11] Section 508 §1194.22 of the Rehabilitation Act Amendments of 1998 requires that Federal agencies ensure the accessibility of their web-based intranet and Internet information and applications.

read the content of the website. Further, the text within the frames is primarily static in its position on the page so that screen enlargement results in these lines of text becoming misplaced on the page or completely lost.

Suggested solutions

For the FEL site to be fully accessible for users with disabilities, the programming of the site must be written so as to accommodate screen enlargement software and screen reading software. Text can be encoded so that it automatically enlarges when a user is employing screen enlargement software and dialogue boxes can be created to facilitate the use of screen readers.

2. Does not rely on color alone?

Graphics, pictures, links and titles (i.e., titles or headings for boxes) do not change color according to applied accessibility settings. The links appear to be the greatest problem for differing visual settings because the color does not change with applied high contrast. The colors that do change only modify inconsistently throughout pages.

The interface heavily relies on its original color scheme as shown on the homepage. Color is employed as part of the navigation and context of the site. On the four main sub pages, color is used to indicate which sub page the user is on (i.e., Resources is green). Users who cannot discern some or all of these four colors (blue, green, red, and yellow), either as the result of colorblindness or the use of an alternate color scheme, will have greater difficulty

Suggested solutions

The site can be designed so that the colors are not static, allowing the user to view the pages with alternate color settings. Further, the navigation of the pages should not be tied to specific colors.

3. Uses markup and style sheets and does so properly?

The FEL website uses style sheets. However, it is not evident that style sheets exist for the website's design and under applied accessibility settings the formats do not work smoothly. The site relies on Cascading Style Sheets (CSS), which is a type of HTML code that allows for a succinct look across all of the linked pages. When users view the site with an alternate color scheme, parts of the interface do not change to the newly set color preferences.

Suggested solutions

This issue may be due to CSS controlling how web pages are presented on the screen by overriding the user's preferences. If this influence of CSS dictates the structure of the webpage then the use of CSS may need some adjustments.

4. Creates tables that transform gracefully?

When the site is viewed with alternate color schemes or screen enlargements, the tables no longer appear on the page. The new setting should still allow users to see the tables for several reasons. Tables allow for a grouping of information that is closely related. By structuring a webpage so that the content is logically placed, it allows for users to scan the page for their information. Without the tables, users see blocks of text with little indication to where information is grouped or where specific

text begins and ends. By not seeing the tables, users may become confused because it is now difficult to distinguish between the blocks of text.

Suggested solutions

The site should be designed so that tables transform when viewed with either alternate color schemes or screen enlargements.

5. Ensures direct accessibility of embedded user interfaces?

Sites that are linked from the FEL website are not positively accessible. Ask a Librarian and Florida Memory Project, under the Resources heading, open in separate windows and are clear homepages that accommodate accessibility settings. However, the links for the Florida Library Youth Program, PALMM Literature for Children, Just Read, Florida, and Children's Books Online all open within the same window as the FEL homepage and do not adjust to accessibility settings well. The MyFlorida website at the bottom of the FEL page has the same difficulty using tables as noted with the FEL homepage. The websites for the homepage of the governor and the secretary of state open within the same window as the FEL homepage without providing orientation from the FEL homepage, from which they were linked. Also, the website for the secretary of state is a dead link.

Suggested solutions

To ensure full accessibility, a website should encourage the sites that it links to comply with accessibility principles as well.

6. Provides context and orientation information?

On the four major area pages the heading and color of the heading remains the same so the user can determine which major sub page they are using. In the top right corner, there are usually links to the home page and the help page. The majority of the content remains visible after the settings are altered, however, some of the navigation links are no longer displayed. This may be confusing to users who are expecting to see previously available links but due to the set accessibility preferences some of the website is no longer viewable.

When new websites open within the same window as the FEL homepage (as described above), all orientation information is lost. There is no indication of the previous homepage. In addition, when users select the links, they are not notified when they are linked to another site (outside of the FEL site). This poses a problem for users, particularly those with learning disabilities, because if they do not know they are navigating another site then they become lost and unsure if they are still on the FEL website.

Suggested solutions

Users need to be notified through an alert box if they are being linked to another site so they can expect a new set of navigation tools.

7. Provides clear navigation mechanisms?

The Homepage is the only page on the site that displays static navigation. Static means that the links are always shown for the users to navigate. This is a good feature to include because users save time by not having to mouse-over the headings in order for the links to drop-down or appear. All of the

other FEL pages use drop-down menus, which require users to move the mouse over the headings in order for the navigation to be displayed. Although this type of menu conserves space because the menu only appears during a mouse-over, this inconsistency may cause confusion for users who will inevitably be looking for the menus to already appear rather than drop-down from the main navigation. In addition, if users cannot see all of their menu options unless they scroll from one heading to another it slows down their navigation. If users were looking for a consistent navigation the structure of the navigation would be the same as that found on the Homepage. These are all issues for users with learning disabilities. A separate problem with these mouse-over menus is that mouse-over menus can be very challenging to use for persons with mobility impairments.

The headers for each page follow the four major areas of the page Resources, Special Topics, How to Use and About Us. Although these are easy to follow, if the user selects an embedded page from any of the four major area pages the headings do not change. A user could easily think that they are still looking at the About Us page when in fact they are looking at the Florida Group Catalog: Administrative Set Up page under the About Us page.

Suggested solutions

The site should rely less on mouse-over menus.

8. Ensures that documents are clear and simple?

    The FEL homepage is relatively cluttered with different objects and the site can be very confusing as a result. There are three different search functions on the homepage. Table-like lines supposedly differentiate between the major subjects on the page. However, within these tables there are links for more than one subject. Using high contrast black these objects lose their outlines, which separate them from one another. Thus, the subjects are no longer individualized or discernable as major subjects. Links which may be related but are not the same subject are all floating on the homepage with other links that are not related. The links on some pages are redundant. Overall, the organization is poor on most pages of materials.

    Suggested solutions

    When accessibility preferences are altered to fit the users specific needs the content can be extremely difficult to read and the problems with lack of clarity on the site can become much more pronounced. Clarity benefits not only users with a range of disabilities, but makes the site better for all users.

Accessibility Results for the DCC Interface

Overview

The accessibility testing of the Digital Catalog Collection website (http://bibt10f-8.fcla.edu/cgi/b/bib/bib-idx) was conducted by four Information Institute researchers in July 2004 to ascertain the levels of accessibility of the website for persons with disabilities. The researchers focused on both established principles of accessibility, such as clear layouts and obvious navigation features, in website design and on how the website functioned when interacting with assistive technologies, such as screen enlargements, alternate color schemes, and screen readers.

The goal of this testing was to provide a comprehensive understanding of accessibility issues that users with a range of disabilities, including visual impairments, hearing impairments, learning disabilities, and mobility impairments, might encounter when using the site. Each testing question is accompanied by a suggestion line for addressing the issues, and guidance for addressing these suggestions can be found at the World Wide Web Consortium website () or the Section 508 website (http://www.section508.gov).

Testing Questions

The website was evaluated using specific questions to frame the testing. Listed below are the questions, a description of the findings related to the questions, and the importance of the findings.

1. Provides equivalent alternatives to auditory and visual content?

    When screen enlargement is used, only parts of the text enlarge. On the homepage, the search fields enlarge, but the text of the main navigation and sub-navigation do not. On subpages, much of the text does not enlarge significantly or at all, appearing to stay in its original format. Text that only enlarges slightly is of little use to users with visual impairments. Within frames, the text can be enlarged, but the text box disappears making the document appear to be in one frame instead of the original multiple frames, such as on a page displaying the results of a search.

    Screen readers are unable to read much of the content of the site. Certain graphics on the site, such as the banner found at the top of every page, have not been designed to work with a screen reader. This is an area of concern because titles are a huge part of navigation. Screen readers can make little sense of the search results pages. The records of a search are organized in tables and when selected by the mouse the screen reader reports the existence of a table, but not the text within the tables.

    Suggested solutions

    For the DCC site to be fully accessible for users with disabilities, the programming of the site must be written so as to accommodate screen enlargement software and screen reading software. Text can be encoded so that it automatically enlarges when a user is employing screen enlargement software and dialogue boxes can be created to facilitate the use of screen readers.

2. Does not rely on color alone?

    Unfortunately, the site does rely on color a great deal. The text in the frames (including the main toolbar) and the links are blue and remain dark colors when viewed through alternate color schemes, creating significant problems when the alternate color scheme employs a dark background color. The text in some text boxes completely disappears when viewed with alternate color schemes.

Many of the sites that are linked from the DCC have similar problems. However, as this site is a database of images, much of this is likely beyond the control of the DCC and may be very difficult to rectify.

Suggested solutions

The site can be designed so that the colors on the pages are not static, allowing the user to view the pages with alternate color settings without losing any content.

3. Uses markup and style sheets and does so properly?

The HTML code and CSS (Cascading Style Sheets) used for the DCC website does not accommodate text size modification. Nonspecific text values are used for the content, making it inaccessible to users who change settings when using screen enlargement.

Suggested solutions

The best way to avoid this from happening is to list alternative fonts when using CSS that accommodate alternate font sizes through different browsers. Browsers have settings for every page that the user navigates. Providing alternatives for font size is the best way to meet the user's needs with accessibility options that provide for different sizes.

4. Creates tables that transform gracefully?

When the site is viewed with alternate color schemes, the tables seem to disappear from the interface. This poses a problem for users because there are no boundaries separating the text, potentially confusing users as to where content begins and ends, what context it is placed in, and its purpose.

Tables are critical to the DCC website, particularly when users are reading the *results summary* records. The whole page is done using tables, so it is apparent that the DCC is intended to display data in coherent, color-dependant tables. When viewed with alternate color schemes, the color-based organization of the tables is lost to the user with a visual impairment. Also, the size of the font in the text of tables is not significantly affected by screen enlargement. Therefore, when site is viewed with either screen enlargement or alternate color settings, the tables disappear and the text from various tables bleed together. On results pages, the text concerning the locations of records in the far left column loses its distinction and merges with the text of the records.

For simple searches, context and orientation are present. The search word appears in the left column with the number of hits related to the keyword and the locations of the records. The records in the center column are organized in a numerated list. However, when viewed through alternate color settings, the tables disappear and the information loses its organization. The use of color facilitates the organization of the search and without them the information becomes jumbled.

Suggested solutions

First, the tables need to be designed so that they still appear in a coherently organized manner with accessibility settings. Further, when viewed with alternate color settings, the color-dependant elements of the tables need to be displayed clearly to the user, regardless of the color scheme they are employing.

5. Ensures direct accessibility of embedded user interfaces?

Since the DCC provides a digital image collection of visual graphics, the way that the photographs are presented is an area of concern. When users click on an image, it opens in a new window. Though the new windows that open for images include a mouse-over enlargement tool, it does not make users are aware of its existence.

The embedded links from the DCC also open in new windows. However, there is no navigation feature from new windows back to original window. Many of the sites linked from the DCC have accessibility problems, including failure to account for screen enlargement and alternate color schemes. Further, screen readers cannot read most of the text or tables on these linked pages because of the lack of dialogue boxes.

Suggested solutions

For the windows that display images, the users should be informed of the availability of the enlargement tool. To ensure full accessibility, a website should encourage the sites that it links to comply with accessibility principles as well.

6. Provides context and orientation information?

Although the site provides a main task bar that remains consistent in all windows, the site has context and orientation problems related to the use of tables (as described above) and with titles on pages. Many pages lack a clear indication and defining mechanism to notify users where they are. When titles are displayed, like the *search results* heading, they appear on the far left of the screen, which may confuse users with its unusual location. Typically, titles are centered and noticeable. By placing it far left it is not obvious that this is the title. The absence of titles and headings on other deep linked pages makes it hard for users to follow the site. Although the *FEL Homepage* and *FEL Help* links are provided on the DCC *search results page*, it is not extremely helpful in navigating to other pages of the DCC.

Further, there is inconsistent orientation as to home page from home page links, i.e., *Bookbag* opens in a new window where all the other links open within the same frame. The redundancy of having *Simple Search* and *Home Page* be the exact same page is also very confusing and completely unnecessary.

Suggested solutions

Breadcrumbs may be a useful element to add to the site so that users are always aware of what part of the DCC site they are located. *Breadcrumbs* are a hierarchy that illustrates where on the site the user has been and where they currently are. It is an excellent element to include on a website because users virtually cannot get lost on the site.

7. Provides clear navigation mechanisms?

The navigation tools (i.e., "Simple Search," "Advanced Search") remain a static size when viewed through screen enlargement. However, even without the accessibility settings, the navigation tools are significantly smaller then the rest of the text found on the site. The navigation tools should be enlarged, since it is what users need to indicate where the user is and to maneuver around the site.

The sub pages, like the advanced search and help pages, do not have proper headings. The only indication that the user is using a different page is the selection of the link at the top of the page under the title graphic.

In its favor, the search screens on the site are consistent with style and operation, and *Help* is clearly available on all screens. Further, additional options for searching (i.e. directions, examples, etc.) are available and clearly marked. These features certainly will benefit users with learning disabilities in navigating the site.

Suggested solutions

Navigation tools should be larger in size to benefit all users, and all sub pages should have proper headings and navigation information. There should be a more distinct and obvious header presenting the page so the user understands they have selected the correct page.

8. Ensures that documents are clear and simple?

The homepage to the DCC site is plain and its content is clearly organized. The general organization is consistent, clear, and simple throughout DCC pages. When search results are displayed in a regular visual format the pages appear organized in tables, which identify title, author, etc.

However, when viewed with alternate color schemes or screen enlargements, the table outline disappears and the page becomes disorganized. The far left column, which displays the locations where the records can be found, almost bleed into the actual records. The text of the locations information appears to enlarge far more than the text of the records. The numbers, which separate records from one another, are too far left to clearly relate to their records. Ultimately, the tables that disappear make the content unclear.

Suggested solutions

The DCC needs to make sure that tables remain visible when a user employs accessibility tools so that the pages remain clear and easy to understand for all users.

Accessibility Results for the Metalib/SFX Interface

The accessibility testing of the Metalib/SFX interface was conducted by three Information Institute researchers in November 2004 to ascertain the levels of accessibility of the website for persons with disabilities. The researchers focused on both established principles of accessibility, such as clear layouts and obvious navigation features, in website design and on how the website functioned when interacting with assistive technologies, such as screen enlargements, alternate color schemes, and screen readers.

The goal of this testing was to provide a comprehensive understanding of accessibility issues that users with a range of disabilities, including visual impairments, hearing impairments, learning disabilities, and mobility impairments, might encounter when using the site. Each testing question is accompanied by a suggestion line for addressing the issues, and guidance for addressing these suggestions can be found at the World Wide Web Consortium website (http://www.w3c.org) or the Section 508 website (http://www.section508.gov).

<div align="center">

Testing Questions
</div>

The interface was evaluated using specific questions to frame the testing. Listed below are the questions, a description of the findings related to the questions, and the importance of the findings.

1. Provides equivalent alternatives to auditory and visual content?

   When screen enlargement is used, only parts of the text enlarge. On the homepage, the search fields enlarge, but the links for navigation on the top of the screen do not.

   Suggested solutions

   For the site to be fully accessible for users with disabilities, the programming of the site must be written so as to accommodate screen enlargement software software. Text can be encoded so that it automatically enlarges when a user is employing screen enlargement software and dialogue boxes can be created to facilitate the use of screen readers.

2. Does not rely on color alone?

   Color is an issue in some cases on the site. When an alternate color scheme of white on black is used, some of the buttons and links do not change color, making them very hard to see (i.e., blue on black).

   Suggested solutions

   The site can be designed so that the colors on the pages are not static, allowing the user to view the pages with alternate color settings without losing any content.

3. Creates tables that transform gracefully?

   The site does not use many tables. The graphics generally tend to adjust successfully to enlargement. The tables also do not appear to be color dependent for the most part.

   The key transformation problem occurs on the initial screen when screen enlargement is used. The button used to enter a search is obscured by one of enlarged boxes.

Suggested solutions

The site needs to address the issue of enlargement and the enter button.

5. Ensures direct accessibility of embedded user interfaces?

The embedded links from the site open in new windows. However, there is no navigation feature from new windows back to original window. Many of the sites linked from the DCC have accessibility problems, including failure to account for screen enlargement and alternate color schemes.

Suggested solutions

To ensure full accessibility, a website should encourage the sites that it links to comply with accessibility principles as well.

6. Provides context and orientation information?

The links at the top of the pages are not necessarily clear enough for users to know where they are on the site and where they can go next. The complexity of the site makes the lack of context and orientation information all the more pronounced.

Suggested solutions

Breadcrumbs may be a useful element to add to the site so that users are always aware of what part of the DCC site they are located. *Breadcrumbs* are a hierarchy that illustrates where on the site the user has been and where they currently are. It is an excellent element to include on a website because users virtually cannot get lost on the site.

7. Provides clear navigation mechanisms?

The navigation tools remain a static size when viewed through screen enlargement. However, even without the accessibility settings, the navigation tools are significantly smaller then the rest of the text found on the site. The navigation tools should be enlarged, since it is what users need to indicate where the user is and to maneuver around the site.

A *Help* function (in the form of a question mark) is available on all screens, though it is not clearly identified.

Suggested solutions

Navigation tools should be larger in size to benefit all users, and all sub pages should have proper headings and navigation information. There should be a more distinct and obvious header presenting the page so the user understands they have selected the correct page.

8. Ensures that documents are clear and simple?

The pages successfully avoid being cluttered or disorganized. However, the site is not difficult to follow only if a user knows what they are doing.

CONCLUSIONS

Ex Libris Metalib/SFX Interface

Three outcomes have been developed from the FEL Portal Component goals (See Appendix A) to be used in evaluating the Ex Libris Metalib/SFX pilot product interface. These outcomes are used to assess the Metalib/SFX pilot product as to meeting selected functionality requirements, limited usability criteria, and specific accessibility standards. Outcomes, indicators and sources/method for each outcome are presented in the table below.

Ex Libris Metalib/SFX Portal Product: Outcomes, Indicators, Sources and Methods			
	Outcomes	Indicator	Source/Method
Metalib/ SFX	1. Florida residents will be able to use the Metalib/SFX interface to retrieve information from multiple sources with a single search engine.	90 % function capability of selected, existing, and modifiable interface features.	Functionality testing
	2. The Metalib/SFX interface will provide a coherent and unifying point of access to a variety of online resources that are available through FEL.	90 % of searches result in successful navigation of the online interface.	Usability testing
	3. The Metalib/SFX interface will meet selected W3C and Section 508 accessibility standards.	100 % of minimum accessibility requirements met.	Accessibility testing

Outcomes

Outcome: *Florida residents will be able to use the Metalib/SFX interface to retrieve information from multiple sources with a single search engine.*

The indicator for this outcome is 90 % function capability of selected, existing, and modifiable interface features. Based on the results of the functionality evaluation, Metalib/SFX as presented does not meet 90% function capability of any of the eight primary function categories evaluated (Q1-Q8), and exceeds 90% in only 4 of 20 tested features (categories and subcategories combined).

[See table of results presented within functionality results section above, page 26 of this report.]

Outcome: *The Metalib/SFX interface will provide a coherent and unifying point of access to a variety of online resources that are available through FEL.*

The indicator for this outcome is 90 % of searches result in successful navigation of the online interface. Successful navigation of the online interface is based on usability evaluation of participants *interacting* with this interface. Participants were unable to interact with the interface prior to usability testing and therefore were restricted to presenting *potential* usability results. These results were based on the perceived interaction of participants with the interface and not on experience of actual interaction with the interface.

Additionally, without having a fully functional and integrated interface to evaluate, researchers could not fully assess Metalib/SFX as a coherent and unifying point of access. Participant's interaction with

an integrated version of this product is needed to assess whether Metalib/SFX has the *actual* capability to present a coherent and unifying point of access to a variety of resources.

Outcome: *The Metalib/SFX interface will meet selected W3C and Section 508 accessibility standards.*

The indicator for this outcome is 100 % of minimum accessibility requirements met. Based on the results of the accessibility tests, many areas meet some or most of the selected W3C and Section 508 accessibility standards; however, none of the areas presented within the accessibility instrument meet 100% compliance with the minimum standards.

Limitations of the Metalib/SFX Evaluations

Members of the study team evaluated the Metalib/SFX interface using the currently available version of the Metalib/SFX product. The current Metalib/SFX interface was not integrated within a library setting; it was available from the Metalib/SFX test site located on a Metalib/SFX server. As such, the final state of the interface is not known. It is not known if additional features will be added or if integration and implementation within a library setting will enhance the current functionality of this site.

Additionally, due to Metalib/SFX not being integrated into a library system, individual evaluations were affected in a number of ways:

1. Final Metalib/SFX interface presents the most recent, updated, fully-functional and operational version of this product which limits comparative value to previous versions of this product and any prior evaluations.
2. Original functionality methodology is based on using a functionality instrument developed for use within a fully functioning and integrated search interface. Evaluation of an interface that is not fully integrated may limit the potential effectiveness of the functionality instrument in presenting results.
3. Original intent of functionality testing was to evaluate the functionality of the Metalib/SFX interface integrated within and interacting with an operational public library networked environment. Functionality testing of the product as a stand-alone interface limits the assessment to the product environment alone and prevents evaluation of actual interaction within a library networked environment.
4. Functionality testing of the present interface does not allow for generalizations to public library environments.
5. Original usability testing methodology relied upon an integrated, if somewhat limited version of Metalib/SFX. Lack of integration led to a modified presentation of the interface to participants which changed the intent, scope, focus, and perspective of the usability study.
6. Original usability testing methodology was dependent upon participants being familiar with the interface to assess the interaction between participants and the interface. Participants provided input based on reaction to what they were seeing, a potential perspective as opposed to input based on experience.
7. Accessibility evaluation reflects accessibility of a specific interface as presented. Accessibility evaluation is limited to the current available Metalib/SFX interface and cannot reflect actual accessibility of a future integrated and implemented version.
8. Results of the current accessibility evaluation cannot be generalized to future implemented versions within a library environment.

Due to these limitations, the extent to which the results of evaluations of this interface can be generalized for future planning and decision making is unknown.

Recommendations

1. Results of the evaluations presented within this report should be considered in the future continued development of an integrated portal product.
2. Goals, objectives, and outcomes should be re-evaluated and modified if necessary for assessment of the success of implementation of the portal product.
3. Results of the evaluations presented within this report should be considered within the application and/or development of evaluation methodologies to assess a future integrated portal project.
4. Methodologies for assessment of the portal product need to be re-evaluated and/or updated.
5. A version of the Metalib/SFX interface or of another potential portal product should be fully integrated within the FEL web page interface and at least one of the pilot library sites.
6. Evaluations of the portal product, such as functionality, usability, and accessibility testing should occur, after a specified time has passed of the fully integrated portal product.

DCC Interface (Florida on Florida)

Two outcomes developed from the FEL Virtual Union Catalog Component goals (See Appendix A). These outcomes are used to assess the DCC interface as to meeting usability and accessibility standards. Outcomes, indicators and sources/method for each outcome are presented in the table below.

DCC Web Interface: Outcomes, Indicators, Sources and Methods			
	Outcome	Indicator	Source/Method
DCC (Florida on Florida)	1. The DCC interface will allow Florida residents to search the contents of most Florida public and academic virtual union catalogs for informational needs.	90 % of searches result in successful navigation of the online interface.	Usability testing
	2. The DCC interface will meet selected W3C and Section 508 accessibility standards.	100 % of minimum accessibility requirements met.	Accessibility testing

Outcomes

Outcome: *The DCC interface will allow Florida residents to search the contents of most Florida public and academic virtual union catalogs for informational needs*.

The indicator for this outcome is 90 % of searches result in successful navigation of the online interface. With the exception of a few minor problems, all of the participants were able to successfully complete the tasks of the usability test.

Outcome: *The DCC interface will meet selected W3C and Section 508 accessibility standards*.

The indicator for this outcome is 100 % of minimum accessibility requirements met. Based on the results of the accessibility tests, many areas meet some or most of the selected W3C and Section 508 accessibility standards; however, none of the areas presented within the accessibility instrument meet 100% compliance with the minimum standards.

Recommendations

1. Results of the evaluations presented within this report should be considered in the present DCC interface and future continued development of the DCC interface.
2. Continuing formative and summative evaluation efforts should occur of this FEL component as it continues to be developed and additional databases are integrated into the current interface.

FEL Web Page Interface

Two outcomes have been developed from the FEL Virtual Union Catalog Component goals and objectives to be used in evaluating the existing FEL Web Pages (See Appendix A). These outcomes are used to assess the FEL web page interface as to meeting usability and accessibility standards determined by the FDLIS and the study team. Outcomes, indicators and sources/method for each outcome are presented in the table below.

FEL Web Page Interface: Outcomes, Indicators, Sources and Methods			
	Outcomes	Indicator	Source/Method
FEL Web Page Interface	1. The FEL web page interface will provide a coherent and unifying point of access to a variety of online resources that are available through FEL.	90 % of searches result in successful navigation of the FEL web page interface.	Usability testing
	2. The FEL web page interface will meet selected W3C and Section 508 accessibility standards.	100 % of minimum accessibility requirements met.	Accessibility testing

Outcomes

Outcome: *The FEL web page interface will provide a coherent and unifying point of access to a variety of online resources that are available through FEL.*

The indicator for this outcome is 90 % of searches result in successful navigation of the FEL web page interface. With the exception of a few minor problems, all of the participants were able to successfully complete the tasks of the usability test.

Outcome: *The FEL web page interface will meet selected W3C and Section 508 accessibility standards.*

The indicator for this outcome is 100 % of minimum accessibility requirements met. Based on the results of the accessibility tests, many areas meet some or most of the selected W3C and Section 508 accessibility standards; however, none of the areas presented within the accessibility instrument meet 100% compliance with the minimum standards.

Limitations of the FEL Web Page Interface Evaluations

1. Participants of the usability study noted their inability to go directly to some of the FEL databases once they located a database, i.e. linking directly to the *Health Reference Center* database (example from the usability test). The extent that a fully integrated portal product will affect directly linking to databases is unknown.
2. The extent an integrated portal product will affect searching across databases within the FEL web page interface is unknown.

Recommendations

1. Results of the evaluations presented within this report should be considered in the future continued development of the FEL web page interface. This should be done as an integral part of the development process, not after the interface has "gone public".
2. Continuing formative and summative evaluation efforts should occur of the FEL web page interface as it continues to be developed and additional knowledge areas are integrated into the current interface.
3. A version of the Metalib/SFX interface or of another potential portal product should be fully integrated within the FEL web page interface.
4. Evaluations of the FEL web page interface, such as functionality, usability, and accessibility testing should occur after a portal product is integrated into the interface.
5. The focus of portal product specific evaluations should be upon specific areas within the interface directly affected by the integration of a portal product.

Next Steps

Further development of the FEL and related web sites should not be undertaken without concurrent usability, functionality, and accessibility evaluations included. An important part of this process will be a rigorous needs assessment of public library requirements prior to design, development, and implementation. Given the varying needs and requirements of libraries and users, both the requirements and ongoing testing of the system can continue to improve its usefulness for the library community as well as the residents of Florida.

Acknowledgements

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- Helen Moeller and others at the Leon County Library for assisting with usability testing within the Leon County Library.

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APPENDICES

APPENDIX A: Goals, Objectives, and Outcomes

1. Ex Libris Metalib/SFX Portal Product

The goals and objectives of the Ex Libris one-year product demonstration are derived from the original FEL portal goal and objectives. The Ex Libris pilot goals and objectives will be used to determine the extent to which Metalib/SFX may serve as the FEL portal component.[12]

Ex Libris Metalib/SFX Interface: Goals and Objectives		
	Goals	Objectives
Metalib/ SFX	1. Assess the degree to which Metalib/SFX interface meets selected functionality requirements, and 2. Assess the degree to which Metalib/SFX interface is usable and accessible under various resource seeking and retrieval conditions.	1. Determine the extent to which Metalib/SFX interface can meet the information needs of Florida residents and library staff.
		2. Review the flexibility of Metalib/SFX interface as a customizable portal to Florida library digital content.
		3. Test the Metalib/SFX interface ability to search across and retrieve content from varied resources such as library OPACs, online databases, and locally digitized content.
		4. Test interoperability between the Metalib/SFX interface and the Florida Center for Library Automation (FCLA) and the College Center for Library Automation (CCLA).

Three outcomes have been developed from the Metalib/SFX interface goals to be used in evaluating the Ex Libris Metalib/SFX pilot product interface as to meeting selected functionality requirements, limited usability criteria, and specific accessibility standards.[13]

Ex Libris Metalib/SFX Interface: Outcomes, Indicators, Sources and Methods			
	Outcomes	Indicator	Source/Method
Metalib/ SFX	1. Florida residents will be able to use the Metalib/SFX interface to retrieve information from multiple sources with a single search engine.	90 % function capability of selected, existing, and modifiable interface features.	Functionality testing
	2. The Metalib/SFX interface will provide a coherent and unifying point of access to a variety of online resources that are available through FEL.	90 % of searches result in successful navigation of the online interface.	Usability testing
	3. Metalib/SFX interface will meet selected W3C and Section 508 accessibility standards.	100 % of minimum accessibility requirements met.	Accessibility testing

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[12] Information Use Management and Policy Institute. (October 2003). *Evaluation of the Florida State Library PortalPilot (Phase III): Draft Statement of Work.*

[13] Information Use Management and Policy Institute. (October 2003). *Measures and Statistics to Assess the Florida Electronic Library (FEL)*

2. DCC Web Interface (Currently called Florida on Florida)

Specific goals and objectives of the DCC interface are derived from the original FEL *Virtual Union Catalog Component* goals and objectives. The DCC interface goals and objectives will be used to determine the extent to which the DCC interface is usable and accessible (based on specific accessibility standards) under various resource seeking and retrieval conditions.[14]

DCC Interface*: Goals and Objectives*		
	Goals	Objectives
DCC Interface	1. Assess the degree to which the DCC interface is usable under various resource seeking and retrieval conditions.	1. Perform general usability testing of the interface created for the DCC.
	2. Assess the degree to which the DCC interface employs accessibility features (selected W3C and section 508 1194.22 standards).	2. Conduct a selected accessibility assessment of the DCC interface to determine the extent to which the DCC interface meets key W3C and Section 508 11194.22 accessibility standards such as those pertaining to visual display and mobility.

Two outcomes developed from the FEL Virtual Union Catalog Component goals to be used in evaluating the DCC interface for meeting usability and accessibility standards.[15]

DCC Web Interface: Outcomes, Indicators, Sources and Methods			
	Outcome	Indicator	Source/Method
DCC Interface	1. Residents will be able to search the contents of most Florida public and academic virtual union catalogs for informational needs.	90 % of searches result in successful navigation of the online interface.	Usability testing
	2. The DCC will meet selected W3C and Section 508 accessibility standards.	100 % of minimum accessibility requirements met.	Accessibility testing

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[14] Information Use Management and Policy Institute. (January 2004). *Development of the Florida Electronic Library: Three Initiatives.*
[15] Information Use Management and Policy Institute. (October 2003). *Measures and Statistics to Assess the Florida Electronic Library (FEL).*

3. FEL Web Page Interface

Specific goals and objectives of the FEL Web page interface are derived from the FEL *Portal Component* goals and objectives. The FEL Web page interface goals and objectives will be used to determine the extent to which the FEL Web page interface is usable and accessible (based on specific accessibility standards) under various resource seeking and retrieval conditions.[16]

FEL Web Page Interface: Goals and Objectives		
	Goals	Objectives
FEL Web Page Interface	1. Create uniform Web site and user interface containing usable content.	1. Provide a coherent and unifying point of access to a variety of online resources available through the FEL.
	2. Create uniform Web site and user interface containing accessible content.	2. Meet selected Federal accessibility standards.

Two outcomes have been developed from the FEL Virtual Union Catalog Component goals and objectives to be used in evaluating the existing FEL Web Pages as to meeting usability and accessibility standards determined by the FDLIS and the study team.[17]

FEL Web Page Interface: Outcomes, Indicators, Sources and Methods			
	Outcomes	Indicator	Source/Method
FEL Web Page Interface	1. The FEL web page interface will provide a coherent and unifying point of access to a variety of online resources that are available through FEL.	90 % of searches result in successful navigation of the Web interface.	Usability testing
	2. The FEL web page interface will meet selected W3C and Section 508 accessibility standards.	100 % of minimum accessibility requirements met.	Accessibility testing

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[16] Information Use Management and Policy Institute. (January 2004). *Development of the Florida Electronic Library: Three Initiatives*.

[17] Information Use Management and Policy Institute. (October 2003). *Measures and Statistics to Assess the Florida Electronic Library (FEL)*.

APPENDIX B: FEL Website Usability Lab Protocol

Navigation Assessment

If you were looking for a way to find a library close to your house what would you do?

[*If user does not use the search by city or search by county feature direct them to the search box fields.*]

Please enter the city or county from your hometown.

[*If cannot find hometown, enter Tallahassee or Leon County.*]

Did the interface do what you expected it to? If so, in what way, if not, what were you expecting? Is this information helpful to you? If so, in what way, if not, why isn't the information helpful?

Now, if you wanted to access the **Florida libraries catalog** as a guest what would you do?

[*If user cannot locate the Guest Access to FloridaCat, then direct the user to the link.*]

Did this link direct you to the information that you expected? If so, in what way, if not, what type of information were you expecting? Is this information useful to you? Why or why not?

Resources Assessment

We will now be moving on to the FEL resources.

If you wanted to ask a reference question what would you do? Is the page displayed what you expected? If so, in what way, if not, how were you anticipating the page to be displayed? Does it contain useful information? Why or why not?

[*If user does not click on Ask A Librarian link then show them where to find it.*]

Let's say that your Local Service was West Palm Beach Public Library, how would you conduct a search of their database? Is the database shown here what you expected? If so, in what way, if not, what data were you anticipating?

Now, search for the Keyword, [ENTER A SEARCHABLE KEYWORD HERE.] Tell me about the results that you see? Are these hits useful to you?

Let's say that you did not want to conduct a search on [ENTER THE PREVIOUS KEYWORD HERE] and you wanted to directly speak to a librarian. How would you do it?

[If user does not see the **Ask A Librarian** *tool show them where to click.]*

Did the interface do what you expected it to? If so, in what way, if not, how were you expecting to interact with the librarian?

Please return to the Florida Electronic Library site. If you wanted to use the **Health Reference Center** database, how would you access it? Did the interface do what you expected it to? If so, in what way, if not, what were you expecting the interface to do?

[*If user does not locate the Available Databases link show user where to click.*]

Accessing Florida Library Resources
Now, please access the **Health Reference Center** database. Do you know your Public Library Bar Code Number? Please enter it in. If not, how would you access the database in another way?

[*If user does not know their bar code number ask them to input the one we will provide for them.*]

Did the interface do what you expected it to? If so, in what way, if not, what type of information were you expecting? How would you describe the interface? Does the architecture of the database look familiar to you? What does it remind you of? Does it appear to be easy to use?

Special Topics
Now, that we have searched using the Health Reference Center database, I would like you to look for a title under a more light-hearted topic. Please go to the **Kids, Students and Families** link.

Now using the **PALMM Literature for Children** find the title, "Aesop's fables: a new version, chiefly from original sources." Did the interface do what you expected to? Is the right amount of information displayed?

Entering your Public Library Bar Code Number, search for [ENTER HERE EITHER A MAGAZINE ARTICLE TITLE OR AN ENCYCLOPEDIA TERM THAT THE USER CAN SEARCH FOR.]

Did the interface do what you expected it to? Does the information displayed satisfy you? In what ways does it satisfy you? Can you locate the title that you were seeking easily?

Content Assessment
Moving on now to the bibliographic information of the search.

Looking at the results retrieved from this search, when you select on the [ENTER HERE THE TITLE OF THE RESULT TO EXPLORE FURTHER] does the information being displayed further your understanding of this document? Tell me about the information that you see. Is it a sufficient amount of information? Do you think that you could locate the document given this information?

Concluding Comments
Now, that you have looked at some of the databases that the Florida Electronic Library has to offer, how would you describe its' services? Would you recommend this site to a friend? Why or why not?

If you could develop your own searchable library database what would it consist of? How could the FEL be improved? Do you have any additional comments on the FEL?

Thank you for your time and if you have any further questions or comments do not hesitate to contact us in the future.

APPENDIX C: DCC Usability Lab Protocol

Search Feature Assessment

If you wanted to search for *Tallahassee,* what would you do?

Did the interface do what you expected it to do? If so, in what way, if not, what were you expecting the interface to do? Is this information helpful to you? If so, in what way, if not, why is this information not helpful?

If you wanted to search for *wildlife* what would you do?

Do the amount of results meet your information needs? Did the interface do what you expected it to do? If so, in what way, if not, what were you expecting the interface to do? Is this information helpful to you? If so, in what way, if not, why is this information not helpful?

Bookbag Feature Assessment

Now, looking at these listed results retrieved

If you wanted to place *Florida Wildlife officers loading gator carcass into pickup truck* in a personal collection what would you do?

[*If user cannot locate the Bookbag link then direct them to the link.*]

Did the interface do what you expected it to? If so, in what way, if not, what were you expecting the interface to do? Is the right amount of information displayed for you? Why or why not?

If you wanted to e-mail this information what would you do?

[*If user cannot locate the Email Contents link direct them to the link.*]

Did the interface do you what you expected it to? If so, in what way, if not, what were you expecting the interface to do?

Now, if you wanted to delete this item from your bookbag what would you do?

[*If user cannot locate the Empty Contents link direct them to it.*]

Did the interface do you what you expected it to? If so, in what way, if not, how could the interface meet your needs better?

Collections Feature Assessment

If you wanted to search the *Florida Writer's Project Collection* what would you do?

[*If user cannot locate the Collections link and the Florida Writer's Project then direct them to the links.*]

Did the interface do what you expected it to do? If so, in what way, if not, what were you expecting the interface to do?

Now, looking under *Subject Areas,* what would you do if you wanted to find the digital collection, *The Seminoles of South Florida*?

[*If user cannot locate the Native Americans link, direct them to the link.*]

Did the interface do what you expected it to do? If so, in what way, if not, what were you expecting the interface to do?

Concluding Comments

Now, that you have looked at some of the databases that the Florida Electronic Library Digital Catalogs Collections has to offer, how would you describe its' services? Would you recommend this site to a friend? Why or why not?

If you could develop your own searchable library database what would it consist of? How could the DCC be improved? Do you have any additional comments on the DCC?

Thank you for your time and if you have any further questions or comments do not hesitate to contact us in the future.

APPENDIX D: Usability Lab Test Instrument: Metalib/SFX

Florida Electronic Library Survey Answer Form

Part I: Demographic Information

1. Library: _____ Staff   _____ Patron   (check one please)

2. Age: _____ (Please write your actual age, example – 23)

3. Gender: _____ Male   _____ Female   (check one please)

4. Do you have a current library card for this library (Circle one)?

      Yes   No   If No, from another library? Library Name: _____

5. How would you rate your Internet skills (Circle one)?

      Excellent   Very good   Good   Fair   Poor

6. Do you regularly access the World Wide Web from your home or your office (Circle one)?

      Yes   No

7. What was the highest level of education you completed (Check one)?

___ Graduate degree
___ Bachelor degree
___ Some college
___ High school diploma
___ Some high school

Part II: Library Search Answers From Review Process

Please circle the number that best reflects your opinion for each statement/question.

	Strongly disagree	Disagree	Undecided	Agree	Strongly agree	Unable to Assess
8. The databases are logically grouped by relevant general search areas.	1	2	3	4	5	6
Please comment:						
9. The results are displayed in an easy to read and understand format.	1	2	3	4	5	6
Please comment:						
10. The Basket feature will enhance my search experience.	1	2	3	4	5	6
Please comment:						
	Strongly disagree	Disagree	Un-decided	Agree	Strongly agree	Unable to Assess
11. Saving items to search folders that I can name will enhance future search sessions.	1	2	3	4	5	6

Please comment:						
12. The labels, i.e. Find Database, My Shelf, My Databases, and the icons, i.e. [icon], [icon] etc. adequately guide me through the process of creating a customized database group.	1	2	3	4	5	6
Please comment:						
13. The ability to create and change customized databases during future sessions is useful to me.	1	2	3	4	5	6
Please comment:						
14. The SFX search process simplifies the search experience.	1	2	3	4	5	6
Please comment:						
15. SFX helps me locate items.	1	2	3	4	5	6
Please comment:						
16. I find the addition of **Google** as a search link useful from this location within the SFX link.	1	2	3	4	5	6
Please comment:						
17. I find the addition of **Ask a Librarian** as a search link useful from this location within the SFX link.	1	2	3	4	5	6
Please comment:						

Part III: Feedback about the FEL Search Interface

18. Please identify the 3 most useful search features on the site:

 a.
 b.
 c.

19. Please identify the 3 least useful search features on the site:

 a.
 b.
 c.

20. What suggestions would you make to improve the site?

21. How usable do you feel the site is overall?

APPENDIX E: Metalib/SFX review Process Procedure

FLORIDA ELECTRONIC LIBRARY SEARCH INTERFACE REVIEW PROCESS

Usability Research Goal
This assessment will provide the Information Institute and FDLIS with information and guidelines that can help them understand user experience with features and data provided within the FEL search interface.

Introduction

This study is part of an ongoing evaluation effort of the FEL search interface by the Information Use Management and Policy Institute of the School of Information Studies at Florida State University. We are conducting this study to evaluate the interaction of patrons with features of the FEL search interface. Objectives of this study are to understand patron's experiences as they:

- Search across logical groupings of database resources;
- Create customized groupings of database resources for future personal use within the interface;
- Use the SFX knowledge base; and
- Use Google as an alternate link for resources.

Your responses to this assessment will help to determine the quality of the interface and may help to improve the usability and the usefulness of the FEL search interface.

The review process will take about 30-45 minutes. Please contribute as many comments as possible during this process. Your feedback is very valuable to this evaluation effort.

This review process will introduce you to the FEL search interface and provide you with some short tasks for using the website. While you are working through this process, please feel free to take notes on the back of the answer sheet on what you are seeing and thinking, where you are looking, the kind of results you might expect or be seeking, etc. Also, please tell us if something is not working or if what you expect to happen does not happen.

After you've gone through all the tasks, we'll ask you a few more questions and then we'll be done.

Evaluation Instruction

The following review process offers step-by-step approaches to exploring *some* of the features of the FEL search interface. The most important thing for you to remember is that you are reviewing the website; the review is not testing your skill level or abilities. There is absolutely nothing you can do wrong.

If you see anything that is confusing or seems broken or weird, it is not your fault. Please describe the problems/inconsistencies/etc. so we can know about them. Even if it is just a shape or color or the speed of a transition, anything, we would like to hear about it.

If you think something is awful, please tell us. If something is great, also please tell us.

Since this is designed specifically for individuals like you, we want to know your thoughts. The results of your review are for the researchers' use only. You will not hurt anyone's feelings. Please feel free to write any thoughts you have, etc. on the back of the answer sheets.

As you work through this review, you will see questions appear followed by suggested questions to help you consider your answers. **Please use the questions within the review as a guide and respond to the statements on the provided answer sheet**. The number beside the question in the review will match the number of a statement on the answer sheet. Please *circle* the most appropriate response next to the statement and use the comment area for your thoughts.

Directions:

Please complete Part I of the survey, Demographic Information. When Part I is complete, please take a few minutes to examine Part II, the review process and questions. The review process will guide you through some selected FEL search interface features. Once you have reviewed the overall evaluation tutorial and questions, please follow the directions in the tutorial and answer the questions for Part II *on this answer sheet*. After you have completed the tutorial and Part II questions, please take a few moments and complete Part III of the survey, Feedback about the FEL Search Interface, located at the bottom of this answer sheet. Thank you for participating in this study.

[Note: the researchers will locate the search screen and log-in for each participant.]

I. Logical Database Groupings:

First Impressions (2-3 minutes)

Take a look at the *Quick Search* screen paying particular attention to the six groupings of databases and their labels. Click on the underlined name of a couple of them to open windows showing you the databases to be searched in each case. These databases have been grouped by the library according to general areas of interest to patrons. This is a test site so the general areas may not be the same as what your library would use, but they are representative of the types of groupings available to libraries.

What are your first thoughts as you look at the groupings of databases? Are the databases named and organized as you would expect? (Respond to **Statement 8** on the answer sheet: The databases are logically grouped by relevant general search areas.)

[*Are they interesting to you? Do they represent groupings of databases that would be useful to your information seeking needs? Would you use these, or similar general groupings? Is that good or bad?*]

Navigation Assessment (5-7 minutes)

Using the **Simple Search**, enter the term **arthritis** into the search area, select **Books-Reference** by clicking the circle next to the term and then click **GO**. Look at the databases being searched and the number of items available within each database as the system loads the results. After the results appear, respond to Statement 8 on the answer sheet using the questions below to guide your comments.

Is what you see what you had expected? Are the results useful and relevant to the search? Would you want more results? Less? (Respond to **Statement 9** on the answer sheet: The results are displayed in an easy to read and understand format.)

Select the first three retrieved items and place them in your shopping basket by clicking the basket icon under the **Action** column. Click on the **My Space** label at the top of the page. A list labeled **eShelf** should

appear. Find the Select Folder pull-down menu and locate your Basket. The term **Basket** should appear in the folder window.

[*Are your three items located within the basket? Is this a useful feature? Are the steps needed to save search items simple and easy to follow? Would you use this feature? Why or why not?*]

Select **Quick Search** at the top of the page. Enter **arthritis** again as the search term if it is not already present, select **Paper Due Tomorrow**, and click **GO**. Look at the different databases grouped within this search and the number of items found within each as you are waiting for the results to appear. Take a moment and look at the titles of the first ten items displayed of the 120 retrieved. Select the first three items by clicking on their **Basket Icons** under **Action**. Select **My Space** at the top of the page. Take a moment and look at the names of the databases within the basket.

[*Have the three items been placed in your basket? Are all of the items within the basket related to your search term?*] (Respond to **Statement 10** on the answer sheet: The Basket feature will enhance my search experience.)

Select all six items by checking the box next to the **Author** label. You may also select all six by individually checking boxes next to the items you might choose to save, but for now select all six. After the page reloads, locate the **Save Icon** ( ) between the folder box and the **Trash Icon** ( ). Hold the cursor over the **Save Icon** and the label **Save As** should appear. Click on the icon and type **Arthritis Search** in the **Save As** window. Click **Save** and look in the **Select Folder** box. The new label for the group of saved search items should appear.

Select **Quick Search** at the top of the page and then select **My Space** again, also at the top of the page. Look within the **Select Folder** box and see if your saved search is there. Select the Basket folder and see if the original saved items are still there. You can continue searching and all future saved items will continue to be added to the basket, or you can clear the basket. Click on the **Trash Icon** with the **Basket** items displayed. Click OK and then look in the Select Folder box to see if the Basket and its items were deleted. Open the Arthritis Search folder. Each individual item has a delete icon under action that would let you delete individual items as well ( ). Also, the **Arthritis Search** folder will remain under **My Space** even after you log off this session. The system saves your search folders until you decide to delete them.

[*Is the ability to save and sort saved items useful? Is the process of saving items to folders, labeling folders, and adding or removing items from the folders simple to understand and follow? Would it be useful to have searches from this session saved for future search sessions?*]

(Respond to **Statement 11** on the answer sheet: Saving items to search folders that I can name will enhance future search sessions.)

With the **Arthritis Search** folder still open, take a look at the names of the databases under the column labeled **Database** for the next phase of the review.

II. Customized Database Groupings (10-12 minutes)

Select **Find Database** at the top of the page. We are going to use the **Title** search (click on the term Title if it is not already selected); leave the **Start With** and **Show All** buttons selected. Enter the term **Florida Cat** into the search box and click **GO**. A list of databases should appear in alphabetical order. Select

Florida Cat and **General Reference Gold** by clicking on the icon of a circle with a plus sign in it (⊕) under **Actions**. Click on **My Space** and then on **My Databases**, which are both located at the top of the page. The databases you found should be located on the **My Database Clipboard**.

Select **Find Database** again, enter the term **Info** into the search box, and click **GO**. A list of databases should appear. Select the first six databases by clicking on the icon of a circle with a plus sign under **Actions**. Click on **My Space** and then on **My Databases**, which are both located at the top of the page. The second set of databases you found should be located on the **My Database Clipboard**.

Move all of the databases in the **Clipboard** into the Temporary Set by clicking on the circle with the arrow (⬅) under Actions. Find and click on the **Save As** icon (⊟). Name this database set **Medical Search** and select **Save**. The folder box should display the new name of this database set. Remove the database **Informe (Gale)** from the **Medical Search** set by clicking the delete icon under **Actions**. You have now created a **Customized Database Grouping**.

In the box for **Select Set**, choose the **Temporary Set** and delete this set using the **Trash Icon**. Select Quick Search at the top of the page. Is your newly created customized group visible? Select My Space and My Databases. Is the Database Clipboard and your Customized Database Grouping still visible? The Clipboard and your customized database sets will remain for future use in a future search session. You can change the databases within the customized database groupings at any time to create new groupings, etc.

[*Do the steps involved in creating a customized database follow a logical sequence of steps? Is the search feature used for locating databases adequate and easy to use? Do the icons (⊕ ⬅) and labels used to aide in the creation of a customized database group help you create the group of databases? Is the ability to save the customized database groupings and clipboard of databases useful? Is the ability to change customized database groupings useful?*]

(Respond to **Statement 12** on the answer sheet: The labels, i.e. Find Database, My Shelf, My Databases, and the icons, i.e. (⊕ ⬅, etc.) adequately guide me through the process of creating a customized database group.)

Select Quick Search. Is the newly created customized database group, **Medical Search** present?

(Respond to **Statement 13** on the answer sheet: The ability to create and change customized databases during future sessions is useful to me.)

III. SFX Knowledge Base

Select **QuickSearch** from the top of the page, use the **Simple Search**, enter the term **arthritis**, and click in the box next to **Books/Reference**. Click **GO**. Click on the red SFX button under Action next to the first title in the list, "Arthritis: what works" by Dava Sobel. A new window should appear with four options for searching.

Select **Holdings in OCLC WorldCat Service**. Is the article displayed in the list of retrieved items? Click on the title, **"Arthritis: what works."** In this example, SFX has linked to the WorldCat database and the result should be a display of libraries that have the book, "Arthritis: what works" by Dava Sobel. Click on the name of a library near you. The library's search page should appear and the title sought should appear

at the top of the page. From this point you could search the selected library's holdings to see if the item is available.

[*Is the information displayed useful? Would the information help you locate the title? Is your local library listed? Would the additional titles listed aide in your search for information on the topic arthritis? Are the additional titles helpful? Not helpful?*]

(Respond to **Statement 14** on the answer sheet: The SFX search process simplifies the search experience.)

(Respond to **Statement 15** on the answer sheet: SFX helps me locate items.)

IV. "Google" and "Ask a Librarian" as Alternate Links for Resources

Return to the **SFX** window with the four options for searching. Click on the **Google** link. The original search term, arthritis should appear in the **Google** search box.

(Respond to **Statement 16** on the answer sheet: I find the addition of **Google** as a search link useful from this location within the SFX link.)

Return to the **SFX** window with the four options for searching. Click on the **Ask a Librarian** link.

(Respond to **Statement 17** on the answer sheet: I find the addition of **Ask a Librarian** as a search link useful from this location within the SFX link.)

This is the end of the Review Process. Please take a few more minutes and answer the last section of the answer sheet.

If you have any additional thoughts on the FEL search interface at a later date, please do not hesitate to email us. Our contact information is Dr. Peter Jörgensen, Assistant Professor and Director of the Usability Lab at peter.jorgensen@fsu.edu, Tommy Snead at jsnead@fsu.edu, and Dr. Charles McClure, Francis Eppes Professor and Information Institute Director at cmclure@lis.fsu.edu. Thank you for taking the time to take a look at the PLGDB.

APPENDIX F: Functionality Instrument

SAMPLE FUNCTIONALITY TESTING INSTRUMENT

Evaluator Name: _____

Virtual Library: _____

Date/Time Accessed: _____/_____

Time Completed: _____

Computer Type: _____

Operating System: _____

Browser and Version: _____

Screen Resolution: _____

Connection Type: _____

Comments on access to site or other general access issues:

_____
_____
_____
_____
_____
_____
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_____

Search Type	Search String I	Search String II
Subject	*Arthritis*	*West Nile Virus*
Author	*Austen Jane*	*Gould Stephen Jay*
Keyword	*Mosquito*	*Kayak*
Title	*To Kill a Mockingbird*	*Living History*

Functional Requirement	Results			Comments
Can users group items in searches?	Yes	No	Somewhat	
Can a search be limited to particular location(s)?	Yes	No	Somewhat	
Do the search results indicate an item's:				
-call number?	Yes	No	Somewhat	
-location?	Yes	No	Somewhat	
-availability?	Yes	No	Somewhat	
-format	Yes	No	Somewhat	
Does the search process have functions for:				
-advanced searching (ability to search 2 or more fields at once)?	Yes	No	Somewhat	
-keyword?	Yes	No	Somewhat	
-subject?	Yes	No	Somewhat	
-author?	Yes	No	Somewhat	
-title?	Yes	No	Somewhat	
Can searches be performed in any languages other than English?	Yes	No	Somewhat	
Can searches be refined?	Yes	No	Somewhat	
Does the site provide:				
-support?	Yes	No	Somewhat	
-instructions?	Yes	No	Somewhat	
-help tools?	Yes	No	Somewhat	
Can user:				
-save entire results?	Yes	No	Somewhat	
-save selected results?	Yes	No	Somewhat	
-print entire results?	Yes	No	Somewhat	
-print selected results?	Yes	No	Somewhat	

APPENDIX G: Accessibility Instrument

Functional Requirement	Results			Comments
Do the appearance and function of the site comply with the accessibility principles mandated by Section 508 of the Rehabilitation Act by complying with W3C principles that:				
-Provides equivalent alternatives to auditory and visual content?	Yes	No	Somewhat	
-Does not rely on color alone?	Yes	No	Somewhat	
-Uses markup and style sheets and does so properly?	Yes	No	Somewhat	
-Creates tables that transform gracefully?	Yes	No	Somewhat	
-Ensures user control of time-sensitive content changes?	Yes	No	Somewhat	
-Ensures direct accessibility of embedded user interfaces?	Yes	No	Somewhat	
-Designs for device-independence?	Yes	No	Somewhat	
-Provides context and orientation information?	Yes	No	Somewhat	
-Provides clear navigation mechanisms?	Yes	No	Somewhat	
-Ensures that documents are clear and simple?	Yes	No	Somewhat	