

University of Massachusetts Amherst

From the Selected Works of Sally Krash

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EDS Usability Testing Final Report



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Available at: <https://works.bepress.com/sallykrash/19/>

EDS Usability Testing Final Report

Prepared by the IRM-DRMS Usability Team
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Executive Summary

Usability studies in academic libraries are essential tools to assess functionality and accessibility of library services. The University of Massachusetts Amherst Libraries recently conducted usability studies on EBSCO's Discovery search platform, which is to be the default search platform on the UMass Amherst Libraries' website beginning on July 2017. During the spring of 2017, Information Resources Management utilized surveys, focus groups, and hands-on testing of students and faculty to assess how library patrons interacted with the new discovery service (EDS) and other related library services. The following report documents this usability study, findings discovered, and recommendations hitherto. The following recommendations are broken into three categories: dataload (i.e. bibliographic records), design, and library services.

Recommendations

Dataload Related Issues

1. EDS search results for e-books show all e-books held by the 5 Colleges, but it is not always clear which ones are accessible from UMass Libraries. This creates confusion and frustration with patrons.
 - a. Work with EBSCO to create an all-encompassing **UMass only/UMass E-Resources** limiter/subsection in EDS listings of library locations.
 - b. Review and find incomplete/inaccurate bibliographic records and overhaul these records in Aleph and other relative datasets so UMass resources are more easily distinguishable.
 - c. Recommend that Five Colleges Discovery/Aleph Committees review the number of clicks it takes to get from Discovery to an e-book, and see if that number can be reduced.
 - d. Configure **UMass only/UMass E-Resources** limiter so UMass content displays at the top of search results.
2. UMass e-books should be ranked at the top of relevance results in EDS, as of now, they are not.
 - a. Editing of bibliographic records to accurately reflect what is available via UMass Amherst Libraries.
 - b. Work with EBSCO to customize how EDS pulls records from the shared 5 College Catalog.
 - c. See 1 d.
3. Online videos available via UMass are not always obviously accessible – patrons have issues identifying what resources are available via online access (e.g. Kanopy, UM Internet Films on Demand, Alexander St. Press, Gale videos, etc.).

- a. See Recommendation 1a.
 - b. Have EBSCO configure limiters to display UMass content more prominently.
- 4. Use of video limiter can skew results showing that videos are not available online.
 - a. Work with EBSCO to create an all-encompassing **UMass only/UMass E-Resources** limiter/subsection in EDS listings of library locations.
- 5. Using a location (e.g. Du Bois only) limiter for videos does always not show all available video resources, if any.
 - a. See Recommendation 1a and 2b.
- 6. Redundant records and records for items are not accessible via UMass EDS should not be displayed.
 - a. Revise the way our MARC content is displayed on EDS. By reimagining the way our Aleph MARC content is sent to and used by EDS will prioritize UMass content and reduce duplication of inaccessible Five Collage content.

Design Related Issues

- 7. The **New Search** button is in a poor location (upper left corner). Users do not see it and their subsequent searches are skewed because limiters/expanders and other sorting preferences are still enabled from the prior search.
 - a. Existing **Clear** button will be reengineered into a **New Search** button that will redirect a patron to the advanced search page, which also clears any limiters/expanders set during prior searches, giving the patron a fresh start on their new search.
- 8. SFX does not always show when a digital item (e.g. online video) is available, which creates confusion.
 - a. Either eliminate SFX from EDS display, or modify records so SFX displays if and when a digital resource is available.
 - b. Customize links on EDS to enable ease of access for patrons.
- 9. Clickable links/tabs to access items are not easily seen by many patrons, (**PDF Full Text, Connect to Resource, Full Text at IEEE Xplore, JSTOR Full Text**, etc.). Reduce the number of tabs that link users to various resources to increase accessibility.
 - a. Research what other institutions have done, consult with EBSCO about how to customize/design a single link for full text access.
 - b. Include instruction on how and what tabs/links provide access to full text versions of e-resources.
- 10. Create a custom ILL tab.
 - a. This is a customizable tab that will be in place by the July 2017 rollout of EDS.
- 11. Redesign the **Ask Us** tab so it has more visibility and usage.

- a. Have quick links to research resources, not just an email link on left handed Ask Us menu.
 - b. Communicate from the main page that the **Ask Us** tab has a chat function with a real live person.
 - c. Address in next round of usability testing.
- 12. Less dropdown menus on the library homepage.
 - a. It was mentioned in focus groups that students rarely use them, or are willing to explore what is contained within them. Consider other options that can have the same functionality and deliver comparable service.

Library Services Issues

- 13. Promote the library services more.
 - a. Create more mouse hover over tutorials for various features on the library homepage.
 - b. Engage in more outreach about library instruction like: “Demystifying Library Research”, how to customize course guides, and easier access for “how to” videos.
- 14. There is a need for EDS information literacy skills for UMass Library staff, faculty, and students (i.e. many patrons do not know how to use EDS’ many facets, limiters, Advanced Search/Boolean, and other related capabilities).
 - a. Library staff training scheduled to take place in August 2017 before the start of the semester.
 - b. EDS instruction for students and faculty can be conducted by reference/research librarians.
- 15. Many 1st and 2nd year students have trouble identifying what type of resource they are looking at, as well as understanding if the resource is available to them via UMass Libraries.
 - a. This can be addressed with more in-depth information literacy instruction.
- 16. There is a wish for increased collaboration with subject liaison librarians.
 - a. Consider different outreach approaches to promote more cooperation with faculty.
- 17. Need for more frequent and in-depth information literacy instruction, particularly for undergraduates.
 - a. Assessment of current approaches to library instruction to look for more opportunities for in-depth instruction.

Project Introduction

The University of Massachusetts Amherst Libraries is changing its resource discovery platform from UMA World Cat Local to EBSCO's Discovery Service (EDS) in July 2017. EDS is designed to meet the current search needs and behaviors of 21st century library patrons, who are used to accessing online content via search engines. "EBSCO Discovery Service (EDS) is an online research tool that 'pulls together' our Library resources so that they can be explored using a single search box. In other words, rather than searching the Library Catalog for books and a database such as Academic Search Complete for journal articles, you can do an EDS search and get results which include books, e-books, journal articles, and government documents in one list." (What is EBSCO Discovery Service, 2011, p. 1).

Libraries use a variety of metrics to gauge the quality of library services. Usability studies are now a commonly used approach to assess library services. Information Resources Management wanted to evaluate the level of effectiveness the current version of EDS provided for our library patrons. In order to find out what patrons liked and disliked about EDS, usability studies were undertaken. With this data, the library can make informed decisions and changes to the EDS platform to increase patron satisfaction. Usability studies help us provide and design a search platform that is intuitive, user-friendly, comprehensive, effective, and efficient for our library patrons. Equally, other pertinent information about various library services was sought after and collected to ensure that we provide quality service for our UMass Amherst community.

Literature Review and Methodology

The Usability Team set out to explore various usability testing methods, theories, and procedures using best current practices. Working with the goal of running a usability study before the July 2017 rollout of EDS, it was necessary to plan and administer our study during the spring 2017 semester. A literature review of other academic libraries' usability studies of EDS provided informative and instructive guidance on how best to design our testing schema. Common themes that have arisen during other academic libraries' usability studies were: issues accessing full text versions of e-resources, poor searching practices exhibited by 1st and 2nd year students, inadequate ability using limiters and expanders, patrons rarely looking beyond the first page of results, and confusion about "library-ese" terminology (Woods, 2015; Clark et al., 2016; Cassidy et al., 2014; Lawrence, 2015).

Usability study methodology most often used by other academic libraries included: use of surveys, use of focus groups, and traditional usability testing (i.e. hands-on testing of the library website). We decided to incorporate these three methods in to our usability study. By using a three pronged approach; we would gather data from observing actual usage of the EDS

platform; get follow-up reactions from the surveys; and hear feedback during the focus groups.

Focus Groups

We decided to organize a number of focus groups, with a goal of hosting six total focus groups of approximately 10 people per. In our recruiting effort, we asked the participants to name their area of study and if they were undergraduates, graduate students, or faculty, so we ended up with a fairly diverse selection of participants (see Appendix B for demographics). We planned on organizing the focus groups in to three sets of undergraduate students and three sets of graduate students and faculty. A script and a list of questions to ask the focus groups were drafted, edited, and the final draft can be seen in the Appendix. Audio recorded from the focus groups would be analyzed and transcribed (see Appendix C).

Hands-on Usability Testing

For the hands-on usability testing, we selected a software package called Morae. This software has the capability to capture screen activity, as well as gather audio and video of the testing participant. It also has a variety of useful features that can be used to aid in data analysis and data visualization for presentation. A cubicle in IRM was slotted to be the testing area. Participants would be asked to “think aloud” while attempting their searches in order to gain more insight in to how patrons interacted with the EDS platform. As before, a collaborative effort was employed to create and edit the five searches that the testing participants would attempt (see Appendix D).

Our recruitment strategy included working with Systems Management, Communications and Marketing, and Research/Reference Librarians to draft a recruitment statement that would be sent via social media, mass emails, and an advert on the library homepage. Incentives of a coupon for the Procrastination Station and a UMass Library mug were offered to potential participants. The recruitment drive was quite successful with over 150 UMass students and faculty replying over the course of a few days. The whole month of April 2017 was scheduled to host the focus groups and hands-on usability testing, with 100 people scheduled to participate. Once testing was complete, analysis of the Morae generated A/V footage would take place to note the occurrence of particular behaviors, usage of specific functions on EDS, and anything else that was of interest. As stated before, a survey would be sent to participants to gauge their level of satisfaction with the EDS platform (see Appendix E for recruitment letter).

Survey

A survey was a quick and easy way to measure information seeking behavior and collect opinions of hands-on testers regarding the quality of their interaction with EDS and other

library services. The survey was drafted and circulated to other various members of the library staff for review and editing. After a few rounds of edits, a final version was decided on that used a free text response format (see Appendix A). The survey would be given to hands-on testers after they completed their round of testing of EDS.

Implementation

Focus Groups

The primary goals of the focus groups were to ascertain student and faculty information seeking behavior in their research efforts, as well as soliciting commentary on the quality of certain library services. These guided discussions entailed both specific questions and open-ended questions in order to gain a broad perspective on patrons' preferences and information on how the library can serve its patrons most effectively. The focus group data has been organized by topic and in the following selected transcript excerpts, FG denotes which focus group the comment is from and a semicolon denotes a different speaker (for complete transcripts and questions, see Appendix C and F).

Information Seeking Behavior

The focus groups were organized with a total of five groups consisting of three undergraduate groups and two faculty/ graduate student groups. We met in various conference rooms on the upper floors of the Du Bois Library. Focus group participants were asked questions about their research process. As has been noted in other US academic libraries' research into 21st century patron search behavior, many undergraduate students named Google/Google Scholar as their primary, go to search engine/database (Woods, 2015; Calvert, 2015). Our focus group participants also listed Google Scholar as the most popular starting point to engage in research. Among graduate students and faculty, the majority of them used some resource from the UMass Libraries to undertake their research.

FG1-Undergraduates: "I like Google Scholar because...when you are on campus you can access all the JSTOR or other databases through Google Scholar, you get better results...because it searches (other) papers, from dissertations and not published articles from professors, like working papers that may never be published. Google Scholar gives you the benefit of the UMass Library website plus the power of Google."

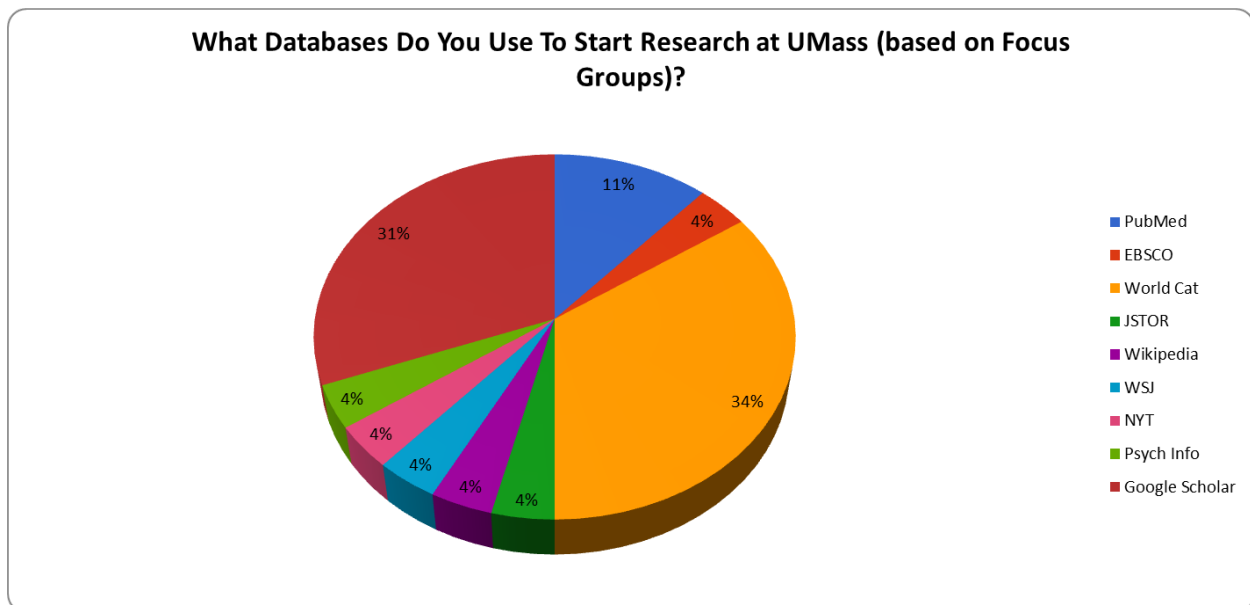
Although Google Scholar was mentioned quite a bit, usage of various databases via the UMass Amherst Libraries was a close second.

FG5-Undergraduates: "...I have looked through the databases a lot, so, when I know what I am looking for, I know where to go, but sometimes for general knowledge, I feel guilty saying this but, I

use Wikipedia for more general stuff, it's pretty good, but if I know what articles I want, I'd go to like, Genderwatch and find the articles I need.”

FG2-Grad./Faculty: “I'm a literature scholar so I actually search by author first, so on a creative writer for instance, I will put in their name and some keywords to search for them, just to see how broad the discussion is on their work.”

FG1-Undergraduates: “Absolutely, I find when it's, like, history or psych. I use JSTOR. Science I use PubMed or Google Scholar to find whatever I can; Like, for me, um, for science related topics I like Wikipedia, for history I use JSTOR; It depends on the discipline, when I research social sciences, I use Wikipedia, but for instance, I am a computer science major, so I always use Stack Overflow when I have questions; For STEM based topics or health classes I use Google Scholar; I use different databases - PubMed or NY Times or Wall St. Journal; Depending on what I am searching for - Google to Google Scholar, if I'm looking for a paper - Google Scholar or Current Events (EBSCO), if I am looking for a data set – Google (then) to the library website.”



The pie chart above denotes focus group participants' preferences regarding where they start their research process. The most common answer was the library website, i.e. World Cat Local, as it has been the default search platform on the UMass Amherst Libraries website up until July 2017.

Usage and Comprehension of Features on Library Website

Focus group participants were asked various questions about topics such as: do you use filters, limiters, or advanced search; their level of understanding regarding links that access full text resources (e.g. PDF Full Text); and usage of citation managers.

FG1-Undergraduates: “I like PDF’s a lot, more than the HTML; I like that you can take PDF’s across platforms, devices, you can store it in the system, and search the PDF’s.”

FG2-Grad./Faculty: “If I click it, I expect, after a number of clicks, I should get full text, but sometimes when I am trying to get a PDF, you have to go around in circles before you can get it, say if you find a full e-book online, you can’t download the whole thing, just 50 pages, or not, sometimes it is not user friendly, like when I see the UMass Links, I know I am screwed, no offence, but the library usually does a good job telling me what I’m gonna expect, most of the time it is really quick...but sometimes you have to play this game and click around to try and find it, but sometimes you get a dead end (laughter).”

FG4-Undergraduates: “The UMass Links is more ambiguous, like when it says “check for availability” I don’t know if it is something that will be available, often you have to go through a bunch of clicks and sometimes it is still not available.”

When asked about their understanding regarding the variety of links used to access full text versions of different resources, quite often either confusion or dislike of the current configurations was expressed. Other academic libraries have consolidated the different links when possible to cut down on the number of choices that many patrons found overwhelming (Clark et al., 2016).

The responses regarding usage of advanced search and limiters/expanders were mixed. Undergraduates often did not use it, whereas graduate students and faculty remarked that they used it regularly. This would reflect the depth and breadth of research graduate and faculty engage in.

FG-1-Undergraduates: “I have used Advanced Search but I don’t like it; I have used it but, all the “AND” “OR” stuff, I don’t like it.”

FG1-Undergraduates: (Regarding advanced search) “I use the source types one’s a lot; I use it also; I use the date range too; I use both. Depends if I am looking for a journal article or something else, I use these filters, also to choose from a particular journal title.”

FG5-Undergraduates: “I use the date limiter, I use the full text; I have never used any of them; I like the language specific, country specific, or other geographical specific, that is helpful.”

FG2-Grad./Faculty: (Regarding advanced search) “Sometimes I’ll use “select a field” but no; I prefer to do my sorting by looking at full titles so I don’t miss anything; I think it is helpful for undergrads, because they are using PubMed and they get really confused, so I think this is helpful.”

Most of the focus group participants used some sort of citation manager.

FG1-Undergraduates: “I use Zotero because when I am on Google Scholar, it manages my citations very well, I didn’t like the Refworks, it doesn’t work that well. I would like a link to a citation form because a lot of people mess up their citations, (me: there is a tab right here for that)...”

Usage of Library Services and Open Commentary

The focus group participants were asked about their usage of various library services, experiences with library staff, and were also given time for open commentary. There was quite an overwhelming response regarding information literacy instruction and the various ways that patrons work with subject specific librarians.

FG1-Undergraduates: “I can never seem to find a book in the stacks, so I use the “Request Item”, but I have trouble finding any books, so I love the Book Reserve and ILL for finding books.”

FG4-Undergraduates: (Regarding ILL) “Yes, I use it all the time, it is really fast especially from 5 Colleges, it is great!”

The responses regarding usage of ILL were generally positive and appreciative.

FG2-Grad./Faculty: “I have used the Live Chat and I think it is awesome, I tell my students to use it because a lot of them are scared to talk to a real person, it is great if it is raining out, or across campus, I think it is great! I think that the Ask Us tab could be better, most people think it is just a FAQ button, I think that it could be better advertised, like say that a ‘real person’ is on the other end.”

FG5-Undergraduates: “Instead of the Ask Us tab, make it something else that would take you to a more user friendly page, the way it is now, it doesn’t look friendly, I actually like the chat service, I can tell them what I already tried, so I can get a fast answer, you should have them add to the Ask Us tab to make it have more services.”

Most patrons that used **Ask Us** were happy with the service, but some did have commentary about possible ways to improve the service. Some suggestions were made to make the links on the left hand side of the **Ask Us** page to connect to “how to videos” instead of just an email link, as it is currently.

FG2-Grad./Faculty: “Is there a way to search the library website? I know there is a lot of stuff on there that I don’t know about, I know students don’t use dropdown menus, it would be better to be able to search the website, just like doing a search on Google, it would never occur to me to look for these resources in the dropdown, I feel the library has a lot of information and stuff that I don’t know about, like when I am preparing for a class and doing all the work, it seems that the library could help me do some of this, but I just don’t know how to find out about the stuff that is available, maybe there is a way to let people know, like on the website (like an advertisement?) Ya, some way that the students could find out about it without having to look so hard for it.”

FG1-Undergraduates: (Regarding ease of use of the library website) “You never get used to it, the same book is listed 7 times, in different versions, so it can be hard to figure out what is available, from what college, etc.; The only reason I know how to use it (library website) is because I had a professor that showed me how to use it and later on I had a class that showed me more stuff about the library; I am a transfer student and I never had any classes (Info. Lit.), so I don’t really have

any idea about what resources are available to me, or how to access them, only reason because I know about some of the resources is because I have one biochemistry professor that is pretty adamant about using the library resources, like NCBI and PubMed, but only because of this one class do I even have a clue about what is available, I have to do a video project next week so I need to figure out how to do that (you know there is a media lab here right?), ya I have to work with them for this assignment, the only reason I sought out to do research is because a professor told me to do so; So, I've had like 3 of the info. sessions at the library 3 separate times, so I left the 2nd and 3rd time because it was very repetitive, I think it is important for freshman to like, learn it, but, for instance, I only use the E-Reserves if I need to read something assigned; I have had 3 different library classes, but each time I have to use the library website, I end up ripping out my hair, (did you try the help buttons on the website, ever?) no, I find it really hard to find books and stuff."

FG6-Grad./Faculty: "We who teach believe the undergrads do not know how to use the library. We often conduct this Info Lit ourselves, why isn't Info Lit a freshman requirement?"

FG2-Grad./Faculty: "Do undergrads get instruction on how to use the library? It seems that only the juniors get this, it would be helpful for freshman to learn how to use the library better, because I see a lot of students who don't know how to use the library, like I tell them to find 3 peer reviewed articles and they say "I couldn't find any..." and I'm like, "Really!?" Maybe the library could teach (there are classes like that). Ya, I see some of these older undergrads who don't know how to use the library website without someone holding their hand, it's pretty scary! I think it needs to be taught during Gen. Ed. classes more."

There was mixed feedback from all of the focus groups concerning skill levels navigating the library website and resources. Interaction with reference and subject liaison librarians was reported as very positive, with many faculty and graduate students remarking about various librarians and the assistance they received from them. Information literacy was another topic that came up during every session, where patrons wished for more instruction and more in-depth research skills to be taught to 1st and 2nd year students, as seen in the above commentary.

Hands-on Usability Testing

During the month of April 2017, 36 patrons participated in the testing of EDS. The testers were tasked to attempt five different searches on various subjects, accessing a variety of library resources. (See Appendix D for list of questions)

As testers progressed through the different searches, we took electronic notes using Morae software as we observed the testing sessions in real time. The testers were told that if a particular search was too difficult or frustrating, it was not necessary to complete the search before moving on to the next one. The testers also "thought aloud", explaining their screen actions, reasoning, and reactions depending on their interactions with EDS. These types of behaviors documented using Morae software made data analysis and presentation much more

efficient and manageable. All participants signed a consent form that allowed recording of the test sessions (see Appendix G).

Testers often had issues locating and accessing e-books that were available via EDS. When testers queried EDS the results included e-books that were part of the Five Colleges catalog but were not available except at the library that actually held the e-book. These records of inaccessible e-books also had a link, **Connect to E-book**. This caused testers to become confused and discouraged and often testers gave up looking for an accessible e-book. Another issue was that it often took a number of mouse clicks to access an e-book. Also, with different types of clickable links offered to patrons to access full text versions of e-books. This created confusion and frustration in patrons, with a similar result of many testers giving up trying to complete the first search.

A related patron pain point was observed when testers attempted to find a video (in any format) about the US Civil Rights Movement. Many testers attempted to use a video only limiter, yet when this limiter was turned on, the results did not accurately reflect what video resources were truly available. Likewise, using a location limiter (Du Bois only) skews results to show inaccurate records that often confused and frustrated testers as they attempted this particular search.

When testers attempted this search on EDS, often available online video resources (e.g. Alexander Street Press, Kanopy, etc.) were not easily located and accessed. Too large of a variety of clickable links created confusion, as well as redundant/repetitive records that listed video resources which were not available from the UMass Libraries website caused many testers to give up on this search.

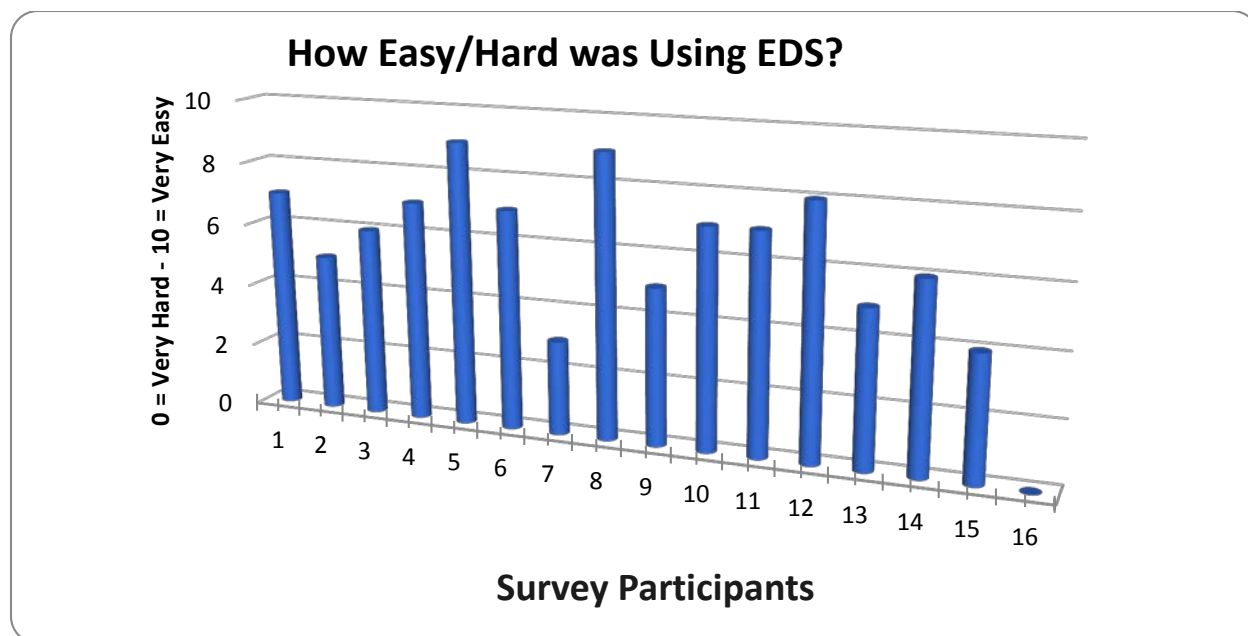
The third and fifth searches involved accessing journal articles (online). Often we observed testers becoming frustrated or confused about the number of different links that can access full text versions of these e-resources. Librarians want to offer patrons a wide variety of ways to access library resources, yet studies show that too many options creates an overload of information. Many libraries have found using the same link for full text access increases patron satisfaction with library online searching. Many of these same libraries have worked with EBSCO to customize the appearance of these links to full text resources to address this issue (Clark et al., 2015).

Another issue that was often observed was when testers set certain limiters/expanders during their searches (e.g. Full Text, Academic Journals, etc.); those settings would follow testers when they moved on to trying a new search. EDS is programmed to keep whatever settings a patron uses, unless they clear the search using a clickable tab **New Search**, which is located in the upper left corner of the screen. During usability testing, we observed that 90% of testers did

not know where this tab was, or that it was necessary to clear the previous search in order to not skew the results of their new search.

Survey Results

After the hands-on usability testers were finished, an email with a seven question survey was sent out. Out of the 36 testers, 16 responded by filling out the survey (see Appendix A for questions).



Most hands-on testers found EDS relatively easy to use (see above graph). Free text responses to the first question elicited an assortment of patron reactions, some are listed below (for complete transcripts, see Appendix H):

“I really like how many options there are to help narrow down my search, but I didn’t like how some things were not obvious, like how to get to the actual resource/reading, how to tell if it’s available online or if I need to go pick it up somewhere...”

“Finding e-books that were available through UMass was the most confusing aspect about it...when I was able to locate an e-book, the university didn’t always have access to it...”

“When search results were displayed, entering new search terms in the box would not reset restrictions, even if you hit the “clear” button, which I found counterintuitive; I would expect entering a new search would clear date restrictions, etc.”

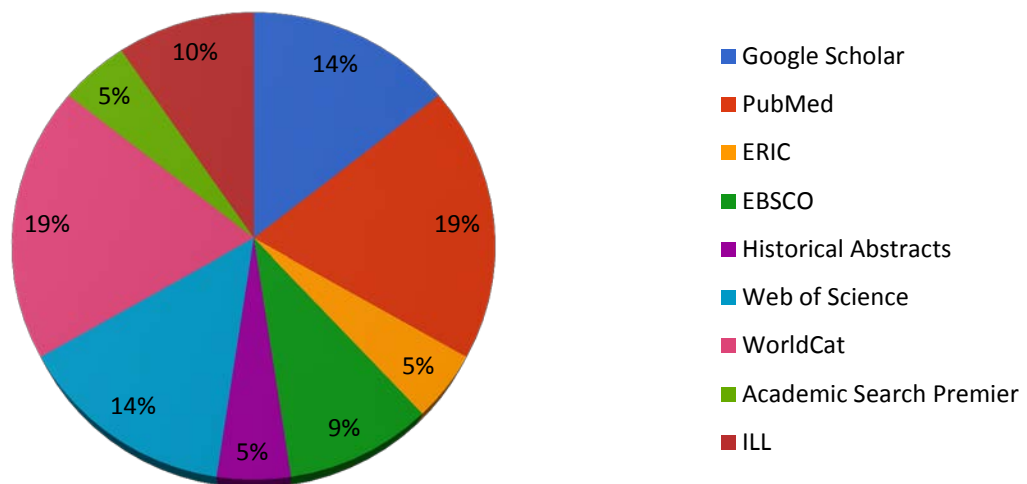
“I love the idea of searching across all platforms!”

“It was hard for me to find full-text links of online articles and e-books.”

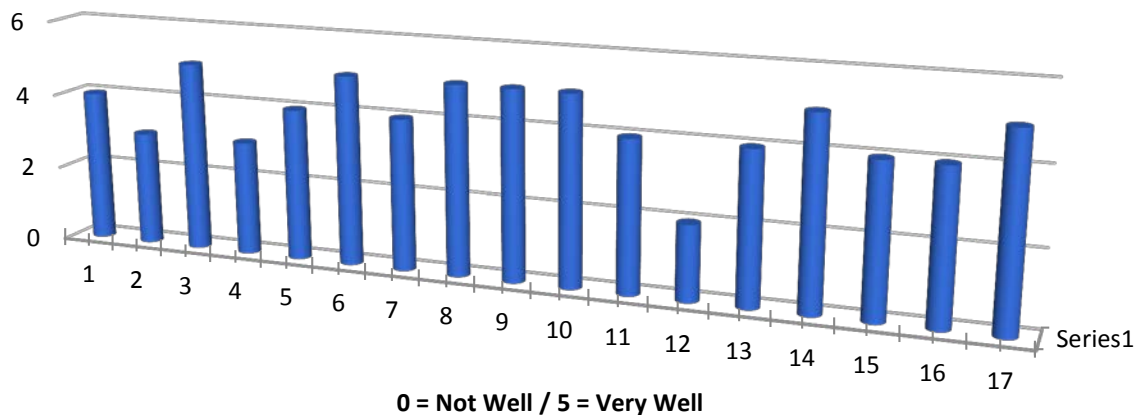
“I found Discovery (EDS) just as user-friendly as other search engines – however, access to ILL through Discovery is not intuitive.”

Much of the commentary from the surveys mirror information gathered from the focus groups and hands-on testing. The second question was similar to the focus group questions about patron’s information seeking behavior. Displayed in the chart below are the databases/resources utilized reported by hands-on testing participants.

What Databases Do Start Your Research With?



How Well Do You Understand What These Links Do?



The third question addressed the myriad of links used on platforms like EDS to access full text versions of various e-resources (see top of page 14). The chart on page 15 is based on responses regarding the level of comprehension of the variety of links used to access full text e-resources (e.g. **PDF Full Text, Connect to Resource, JSTOR Full Text**)

The next question asked if any confusion about these terms impeded their research and most responses indicated that it did not. Yet, in the video footage of the hands-on testers, many participants were observed having issues locating these links and accessing the resources. The dissonance could be the difference between patrons' perceived understanding of these terms versus their actual comprehension. Here are some of the actual responses to Questions 3 and 4 (see pg. 14):

“Occasionally. Sometimes it’s easier to simply Google the article title to find a direct link to a PDF.”

“I don’t find the terms confusing. I just thought it was a bit of an information overload. One thing I especially dislike about Discovery Search is that you need to manually click on the drop down menus on the left side to limit your search to specific items. This is very time-consuming and frustrating.”

“Overall, No, because I know if I click around enough I’ll eventually find what I’m looking for.”

“What would deter me from accessing information is not understanding if the item was available online or in person. I would get really frustrated spending time looking for a link to the source and then realizing I have to go get it from the library. It is important easily see where the source is available...”

“The resources are not as easy to access as in other search platforms. There’s a lot of roundabout clicks you need to make to get to the same item.”

Survey respondents self-assessment of their familiarity with the various library services available ranged from “not that familiar” to “quite familiar” with the majority of responses claiming a moderate knowledge of library services. As to be expected, undergraduates were less familiar and faculty and graduate students were moderately to very familiar with library services.

The final two questions were: “I would like to see _____ in Discovery Search” and “I can never find _____ in Discovery Search” and here are some of the responses we received:

“Under ‘Refine Results,’ if I click on two separate sections (for example, source type and library location) all of my other search options disappear. I know that’s probably because my search becomes too narrow to then also sort by language/geography/etc., but I’m used to seeing a ‘Clear all’ button to start over. Instead, I have to hit my back button until I’m where I want to be to start over. Also, if I unselect an option, my search options do not reappear.”

“More labeling of navigation bars (the left and right panels) ▪ I don’t remember if it does this or not, but when I click a link (specifically to an outside source) it would be very helpful and intuitive if it opened in a new tab, not reloading the current tab. In other words, I don’t want to lose the database tab when I view the source.”

“I would like to have more options on the sidebar to narrow down results. It also seemed that the options on the side that were available weren’t the ones I was looking for (not always in ordinary language or simple keywords).”

“I would like to see a quicker way to access items in Discovery Search.”

“It’s hard to find out where a resource is located—it should be easier to see what’s available at UMass and what needs to be accessed through ILL.”

The survey results were interesting in that we were able to gather commentary from hands-on testers of EDS and incorporate their statements into our assessment and recommendations we compiled after gathering and reviewing all of the data from this usability study. To see complete transcripts of the survey responses, see Appendix H.

Conclusion

Data Synthesis and Findings and Recommendations

During May 2017 the data gathered from the focus groups, hands-on usability testing, and the subsequent surveys were reviewed. Data from the focus groups were central to formulating a number of the findings and recommendations. Six of the findings and recommendations were discovered solely from the focus groups and two other recommendations were supported by comments made during the focus group sessions. Recommendations 11 and 12 addressed design aspects of the library website with suggested changes for the “Ask Us” feature and the usage of dropdown menus. Recommendations 13 through 17 centered on library staff and services such as, the desire for more library instruction, more visibility on services the library provides, and working with subject specific librarians.

Hands-on usability testing provided data that guided 8 of the recommendations, primarily focusing on various attributes of EDS, such as the relevance ranking of available items at UMass Libraries, difficulty accessing certain items, too many clicks to access various e-resources, difficulty using limiters and other search preferences, and the use/non-use of various links and buttons on EDS’ platform.

Likewise, the surveys gave us valuable insight regarding EDS and library services that guided some of our recommendations. Besides our findings and recommendations, we also learned about patrons’ search behaviors, databases and search engines used, and perception of the level of service our staff and library resources provide to our patrons.

By using three different approaches, we were able to cover a large assortment of issues and topics that will help us serve our patrons in the best possible fashion. Usability studies provide a useful snapshot of how well a product or service is performing with its users. When a new product or service is first introduced, especially with an online search platform like EDS, growing pains are to be expected with the requisite tweaks and changes that usability studies can uncover. Continued usability studies can provide a consistent stream of data that can be incorporated in to how future planning, design, and implementation of upcoming projects proceeds, as well as a metric on how current library services are meeting our patrons needs.

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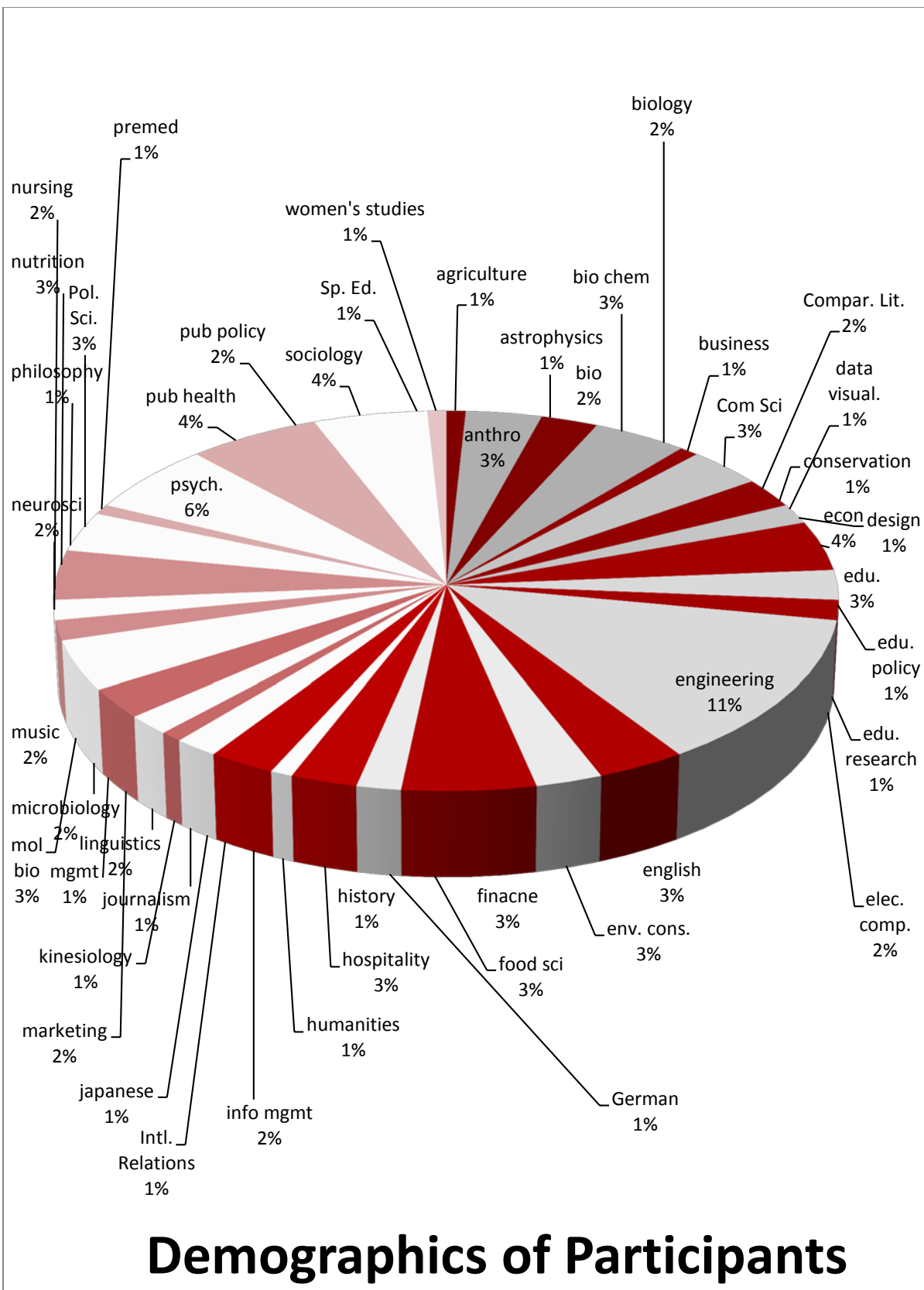
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Appendix A

Post Test Survey Questions –

- How easy or hard was it to use the Discovery Search (on a scale of 1-10, 1 being very hard, 10 being very easy)? I really love/can't stand _____ about Discovery Search.
- How do you normally access information that you want for your research?
- Was there anything confusing about terminology such as:
HTML Full Text vs. PDF Full Text, Connect to Resource, and Check Availability, JSTOR Full Text, ERIC Full Text, or any other terms that were confusing, frustrating, or are unknown to you?
- Does any confusion about these terms deter you from accessing the information that you are looking for?
- How familiar are you with the various resources that the library offers?
- "I would like to see _____ in Discovery Search."
- "I can never find _____ in Discovery Search."



Appendix C

Focus Group Transcript - April 14-Undergraduate

1. “What search engine do you use first when starting on a research topic/project?” (e.g. Discovery, Google/Google Scholar, Wikipedia, databases, course guides, etc.)

“Google Scholar; Google then Library Databases; Google Scholar and Wikipedia then Library; Google and NY Times.”

2. “What is your search process when you start a research project once you have a general idea about what you plan on researching? Do you EVER start with the library homepage search bar, a particular database or journal...?”

“Research the history of the topic to get context(e.g. the background); Read a summary about the topic, look for keywords to use for a search; Read an online encyclopedia then narrow down the search topic; Do a search and look for titles that come up in the results; Look at multiple sources and find topics.”

3. “Does what you are searching for change how you begin to look for those materials? (e.g. science/math/engineering/medicine vs. history/sociology/)

“Absolutely, I find when it’s, like, history or psych. I use JSTOR, science I use PubMed or Google Scholar to find whatever I can; Like, for me, um, for science related topics I like Wikipedia, for history I use JSTOR; It depends on the discipline, when I research social sciences, I use Wikipedia, but for instance, I am a computer science major, so I always use Stack Overflow when I have questions; For STEM based topics or health classes I use Google Scholar; I use diff. Databases - PubMed or NY Times or Wall St. Journal; Depending on what I am searching for - Google to Google Scholar, if I’m looking for a paper - Google Scholar or Current Events (EBSCO), if I am looking for a data set - Google to the library website.”

4. “If you are looking for a specific article or title, how would you go about it?” (e.g. homepage search box, databases, etc.)

"I put keywords or search for the author; I also use the author's name in a search; the same; I use quotations to get a more specific search; I like Google Scholar because you can use the dropdown, when you are on campus, you can access all the JSTOR or other databases through Google Scholar, you get better results from Google Scholar because it searches also papers from dissertations and not 'published' articles from professors, like working papers that may never be published, Google Scholar gives you the benefit of the UMass library website plus the power of Google; I go directly to the sources when I do research.

5. "Does the library help you get your research done?" "If so, how?"

N/A

6. "How many of you teach classes or workshops? How do you use library resources for your instruction (grad. and faculty only)?"

N/A

7. "How would you describe the difference between HTML full text, PDF full text, Connect to Resource, JSTOR or ERIC Full Text links, Full Text at IEEE Xplore, Full Text from ScienceDirect? What do you expect when you see this?" "Or, rephrased, what are the functions of these tabs/links?" "Does what it is called matter?"

If it's a downloadable link, one thing that's annoying to me is when it says "connect to resource" but then it downloads a PDF instead of an HTML webpage that I want to see, I guess it's just annoying to me...; I like PDF's a lot, more than the HTML; I like that you can take PDF's across platforms, devices, you can store it in the system, search the PDF's.

I don't know what HTML Full Text means...(I explain);

8. "If you are trying to search for something that is more specific, are there any other tools that you use, or do you just scroll through the pages of your search results? Do you use the left handed sidebar limiters, like narrow the search by date, full text only, subject, books, articles, etc.? Why or why not?"

I use the source types one's a lot; I use it also; I use the date range too; I use both; both; Depends if I am looking for a journal article or something else, I use these filters, also to choose from a particular journal title, but honestly I prefer to use Google Scholar for this, it is much easier to find dissertations on Google Scholar, it depends on the level of information that I am looking for...

9. "Are there services that the library currently does not offer that you would like to see (on the website)? Or if the library could do something to improve searching, what would that be?"

Um, I see a lot of broken links, it should have some way to report the broken links so you don't have to keep clicking on the broken links; I am actually trying to get access to specific datasets, it would be nice to have some way to see who has certain datasets that are not available from UMass website, but a way to find who in the UMass community has access to them (me) Like a Wiki page? Yes, something like that, I am not sure how it would work, but it would be nice to have a way to see or find what different departments have access to.

10. "What do you think the search box searches? Does anyone know what the Discovery search function does or is (how it searches)?"

I have not used it yet, I didn't know it was there...(Z: explain what and how EDS works) -

11. "What do you use the library website for?" Follow up questions about-(e.g. research, information about library services, course reserves, 'ask me' reference help, sub. specific librarian, subject/course research guides)

I use LibCal to reserve space, the only thing that annoys me is that you can only reserve a space for 2 hours a week.

12. "Who here uses Inter Library Loan? Why or why not?"

I do, it works well; I had a problem, I had an assignment due on Wednesday, so that Monday I looked it up and it said that the textbook was available at Smith, so I went to Smith College and they told me that it was sent to UMass, I came back to UMass and asked for it and they told me

that it would have to go back to Smith, and then I can order it, I told them that it seemed like a hassle you know, is there some way to make this better in the 5 Colleges, some kind of notification system? (me: well, that is the way ILL works...); I can never seem to find a book in the stacks, so I use the Request, but I have trouble finding any books, so I love the Book Reserve and ILL for finding books.

13. "Who uses a system for keeping track and managing your research or citations (e.g. Zotero, EasyBib, RefWorks)? If so, do you find it easy to save your references from the searches you do in the library collections and resources?"

I use Zotero because when I am on Google Scholar, it manages my citations very well, I didn't like the RefWorks, it doesn't work that well. I would like a link to a citation form because a lot of people mess up their citations, (me: there is a tab right here for that), ok;

14. "Do you use Advanced Search? Why or why not?" "What about it seems confusing?" "What is your level of expertise searching on the library website?" "How did you learn how to use the library website?"

You never get used to it, the same book is listed 7 times, in different versions, so it can be hard to figure out what is available, from what college, etc.; The only reason I know how to use it is because I had a professor that showed me how to use it and later on I had a class (Library 101) that showed me more stuff about the library; I am a transfer student and I never had any classes (Info. Lit.), so I don't really have any idea about what resources are available to me, or how to access them, only reason because I know about some of the resources is because I have one biochemistry professor that is pretty adamant about using the library resources, like NCBI and PubMed, but only because of this one class do I even have a clue about what is available, I have to do a video project next week so I need to figure out how to do that (me: you know there is a media lab here right?), ya I have to work with them for this assignment, the only reason I sought out to do research is because a professor told me to do so; So, I've had like 3 of the info. sessions at the library 3 separate times, so I left the 2nd and 3rd time because it was very repetitive I left, I think it is important for freshman to learn it, but, for instance, I only use the E-Reserves if I need to read something assigned; I have had 3 different library classes, but each time I have to use the library website, I end up ripping out my hair, (me: did you try the help buttons on the website, ever?) no, I find it really hard to find books and stuff.

I have used Advanced Search but I don't like it; I have used it but, all the "AND" "OR" stuff, I don't like it.

Focus Group Transcript-April 19-Graduate and Faculty

1. “What search engine do you use first when starting on a research topic/project?” (e.g. Discovery, Google/Google Scholar, Wikipedia, databases, course guides, etc.)

Google, Google Scholar; The library website, worldcat; Worldcat or jstor; I look on the catalog to see if it is right here first

2. “What is your search process when you start a research project once you have a general idea about what you plan on researching? Do you EVER start with the library homepage search bar, a particular database or journal...?”

So when I know what topic I want to search I usually break it down by subject and then narrow my search down, So when I know what topic I want to search a topic broken down by subject of and then narrow my search down; I'm a literature scholar so I actually search by author first, so on a creative writer for instance, I will put in their name and some keywords to search for them I will put in their name and some keywords to search for them, Just to see how broad the discussion is on their work; I usually you narrow it it by a recent publication or by the year of the review to get a good idea about a topic before I go further.

3. “Does what you are searching for change how you begin to look for those materials? (e.g. science/math/engineering/medicine vs. history/sociology/) –

Yes, My research is mixed between two disciplines, so if I am looking for something on kinesiology I go to Google Scholar but if I need something on ADHD I go to PsychInfo or PubMed; Sometimes I use plain Google for non European languages.

4. “If you are looking for a specific article or title, how would you go about it?” (e.g. homepage search box, databases, etc.)

5. “Does the library help you get your research done?” “If so, how?”

6. “How many of you teach classes or workshops? How do you use library resources for your instruction (grad. and faculty only)?”

I teach writing in public health so every semester that is taught, the public health librarian, Ellen Lutz comes and teaches how to search the library in the Calipari Room for each section for that semester, how to find journal articles, make annotated bibliographies so that is helpful; Is a similar process for college writing which I have taught; I teach an intro general education course And we put this up Like how to find a peer-reviewed journal article but a lot of them struggle because there are so many options So we show them to check these boxes so they only get peer reviewed articles for example but for a lot of them they don't understand this and they are still pulling up articles that are not peer reviewed

7. “How would you describe the difference between HTML full text, PDF full text, Connect to Resource, JSTOR or ERIC Full Text links, Full Text at IEEE Xplore, Full Text from ScienceDirect? What do you expect when you see this?” “Or, rephrased, what are the functions of these tabs/links?” “Does what it is called matter?”

I like the PDF clicker, I like to download them and read it right away; I use the PDF option, I like that, I don't know what IEEE is...

8. “If you are trying to search for something that is more specific, are there any other tools that you use, or do you just scroll through the pages of your search results? Do you use the left handed sidebar limiters, like narrow the search by date, full text only, subject, books, articles, etc.? Why or why not?”

I almost never do, my dissertation is is on contemporary fiction, I am Further along on my dissertation so I can usually tell by just looking at a resource it if it is something that I want; When I am trying to backtrack a citation and I know it is from a certain year I use the year filter to do this to find it again

9. “Are there services that the library currently does not offer that you would like to see (on the website)? Or if the library could do something to improve searching, what would that be?”

The mobile interface could be better, it isn't good on a phone or a tablet, also I don't like that when you are on the website that you can't hit the "back" button, you have to re log in, it is really annoying, it kicks you off the website; I've had issues that say they are not available, when I am off campus, but when I search the same thing from my office, it says it is available, that is frustrating; I really like ILL, it is great and fast, it is amazing to be able to get hard to find articles so fast! It would be nice to be able to change the course guides, so if there is a way to change them, that would be great, because I tell the students to look at them, I would like to know how to work with the librarians that make them (call them and let them know, they would appreciate it I am sure); I like that Google Scholar is on the website now, it is good for the students who need to go on the website to find something really quick; I use it because it works really well with my reference manager, I don't know how to use it with other search tools.

10. "What do you think the search box searches? Does anyone know what the Discovery search function does or is (how it searches)?"

11. "What do you use the library website for?" Follow up questions about- (e.g. research, information about library services, course reserves, 'ask me' reference help, sub. specific librarian, subject/course research guides)

Is there a way to search the library website? I know there is a lot of stuff on there that I don't know about, I know students don't use dropdown menus, it would be better to be able to search the website, just like doing a search on Google, it would never occur to me to look for these resources in the dropdown, I feel the library has a lot of information and stuff that I don't know about, like when I am preparing for a class and doing all the work, it seems that the library could help me do some of this, but I just don't know how to find out about the stuff that is available, maybe there is a way to let people know, like on the website (like an advertisement?) Ya, some way that the students could find out about it without having to look so hard for it; It would be nice to not have to log in for the different databases, 5 Colleges, ILL it is a hassle to have to log in for all of them, maybe a way to just open one page to do all that would be nice;

I have used the Live Chat and I think it is awesome, I tell my students to use it because a lot of them are scared to talk to a real person, it is great if it is raining out, or across campus, I think it is great! I think that the Ask Me tab could be better,

most people think it is just a FAQ button, I think that it could be better advertised, like say that a “real person” is on the other end;

Do undergrads get instruction on how to use the library? It seems that only the juniors get this, it would be helpful for freshman to learn how to use the library better, because I see a lot of students who don’t know how to use the library, like I tell them to find 3 peer reviewed articles and they say “I couldn’t find any...” and I’m like, “Really!?” Maybe the library could teach (there are classes like that call Information Literacy instruction). Ya, I see some of these older undergrads who don’t know how to use the library website without someone holding their hand, it’s pretty scary! I think it needs to be taught during Gen. Ed. classes more...

12. “Who here uses Inter Library Loan? Why or why not?”

(almost all raise hands) I don’t because I can find it online; ILL is the one thing I teach my juniors, because they are purchasing a lot of music scores, so only if they perform do they need to purchase the scores.

13. “Who uses a system for keeping track and managing your research or citations (e.g. Zotero, EasyBib, RefWorks)? If so, do you find it easy to save your references from the searches you do in the library collections and resources?”

I use RefWorks because it is free...I don’t use any at all, it doesn’t work the way I want it to.

14. “Do you use Advanced Search? Why or why not?” “What about it seems confusing?”

Sometimes I’ll use “select a field” but no; I prefer to do my sorting by looking at full titles so I don’t miss anything; I think it is helpful for undergrads, because they are using PubMed and they get really confused, so I think this is helpful.

15. What is your skill level searching on the library website?

So, I have issues using the 5 College website, if I find something on WorldCat and it says it’s available at UMass, the 5 Colleges says it’s here, but it’s not available at UMass right away, I get frustrated.

Focus Group 21 April, 2017 11:30

Grad/professors:

- It's hard to find phone numbers, Ref., staff, etc. and doesn't want to search for it.
- Does not want worldCat to disappear. Would like each search to be searching WordCat.org without have to do a separate search.
- Request for ILL does not populate didactics properly i.e. Tildes'
- Loves that e-reserves will take a DVD and stream it e-reserves
- Most who teach believe the undergrads do not know how to use the library. They often conduct this Info Lit themselves (Phd, faculty).
- Why info isn't Lit a freshman requirement?
- Doesn't think that students use e-resources required for class. They will us the tangible Book, Dvd etc. A few preferences for printed course packs
- They want the fastest way to find & search a journal
- Website not well designed
- Want a pdf. right away, not more searching or click throughs
- Improve search
- Want to be able to search 5 College's catalog by relevance, title, date, etc.
- WorldCat local should, absolutely not go - necessary for those who want access to library resources other than what UMass/5 Colleges offers.
- Upset that there has not been an announcement about WorldCat local leaving June 30th, 2017
- Increase "video" limiter to include subcategories, dvd, vhs, e-video, film, blu ray
- WorldCat shows results for everything. We want to see all of these results when searching
- ILL option will not show as readily with Discovery
- Textbooks on reserve, not online
- Zotero is preferred over RefWorks.
- Under "What am I searching", a suggestion to use a check mark instead of an x.

Focus Group – April 21 - Undergraduate

1. “What search engine do you use first when starting on a research topic/project?” (e.g. Discovery, Google/Google Scholar, Wikipedia, databases, course guides, etc.)

Google, Google Scholar, UMass Libraries as the main search tool

2. “What is your search process when you start a research project once you have a general idea about what you plan on researching? Do you EVER start with the library homepage search bar, a particular database or journal...?”

I usually start with a database, or the default search; I goto Google Scholar, unless I can't find it, then I will come to the UMass library website 'cause it's usually easier to get um..access, like if it's from a particular journal; I don't go for databases, but I use Google Scholar and then when I find it, I look for full text; I don't usually rely on the databases I rely on the content.

3. “Does what you are searching for change how you begin to look for those materials? (e.g. science/math/engineering/medicine vs. history/sociology/) –

4. “If you are looking for a specific article or title, how would you go about it?” (e.g. homepage search box, databases, etc.)

If I had a specific article, I start with Google but if I can't get access then I will goto the library webpage; Um, usually I just assume that I can't find full text on Google so I goto the Umass Library homepage and start looking there; I go Google, or library website too...whatever works quicker depending on the topic.

5. “Does the library help you get your research done?” “If so, how?”

I guess at the School of Education, we have Steve ... so I stopped by and he helped me to navigate the website and how to make my searches more specific, and how to expand it to books and articles, but also to periodicals; Um, ya, especially like when I have to do a big research project, I come to the library to not only find online articles, but to find actual book, anytime I ask someone for help, they are super incredible help! I think the library is very helpful for finding different resources and

also I like the citation resource...RefWorks? That is really helpful for my research, I don't like to have to manage them; Yes, that is a great resource...-

6. "How many of you teach classes or workshops? How do you use library resources for your instruction (grad. and faculty only)?"

7. "How would you describe the difference between HTML full text, PDF full text, Connect to Resource, JSTOR or ERIC Full Text links, Full Text at IEEE Xplore, Full Text from ScienceDirect? What do you expect when you see this?" "Or, rephrased, what are the functions of these tabs/links?" "Does what it is called matter?"

I want to be able to see the entire article, see a PDF; the UMass Links is more ambiguous, like when it says "check for availability" I don't know if it is something that will be available, often you have to go through a bunch of clicks and sometimes it is still not available...

8. "If you are trying to search for something that is more specific, are there any other tools that you use, or do you just scroll through the pages of your search results? Do you use the left handed sidebar limiters, like narrow the search by date, full text only, subject, books, articles, etc.? Why or why not?"

I use the date limiter, I use the full text; I have never used any of them; I like the language specific, country specific, or other geographical specific, that is helpful;

9. "Are there services that the library currently does not offer that you would like to see (on the website)? Or if the library could do something to improve searching, what would that be?"

I would like a bigger fiction section, it would be great to come to the library and find a fiction book instead of trekking to the Jones Library for a book...The only other thing I would like to see is a place to donate your old textbooks, there are definitely people who are going to take that class and use that book.

10. "What do you think the search box searches? Does anyone know what the Discovery search function does or is (how it searches)?"

11. "What do you use the library website for?" Follow up questions about- (e.g. research, information about library services, course reserves, 'ask me' reference help, sub. specific librarian, subject/course research guides)

I borrow a laptop sometimes; I use the course reserves; Ya, so do I; I have heard of "ask a librarian" but I have never used it; I goto the resources page in the beginning, but now I don't use it too much;

12. "Who here uses Inter Library Loan? Why or why not?"

Yes, I use it often; yes me too

13. "Who uses a system for keeping track and managing your research or citations (e.g. Zotero, EasyBib, RefWorks)? If so, do you find it easy to save your references from the searches you do in the library collections and resources?"

14. "Do you use Advanced Search? Why or why not?" "What about it seems confusing?"

I use it sometimes; I use it a the beginning of the semester to see if you have a textbook available, I use the ISBN number to see if it is available.

15. "Has anyone had any instruction on how to use the library?"

Yes; Ya; Mine was in freshman college writing, I found it helpful, I also had a TA show us how to use the website; I don't know if a librarian came in but I had a professor show us how to use the library, showed us and stuff...

16. "Is there anything else that you want to comment about?:

I find it hard to access using my smartphone, it doesn't work very well; I think that the access to resources has gotten so much better, I started in 2002 and now I am back and the resources are so much better; I think it would be nice to see what new books are available at the library, say what is new this week - say what is new in education - it would be nice to see it on the website, it would be nice to see it on the homepage; I would like to be able to search the library by genre; I would like to see what new subscriptions are available too...

Focus Group Transcript - April 24, 2017 - Undergraduate

1. "What search engine do you use first when starting on a research topic/project?" (e.g. Discovery, Google/Google Scholar, Wikipedia, databases, course guides, etc.)

Google; Google; specific library databases based on the area of research, Google Scholar; Google is good when you aren't sure what you want to do, so is Wikipedia; I go to Google but if there is nothing there on the first 3 pages, if not Google Scholar; If I need to cite something, I goto Databases

2. "What is your search process when you start a research project once you have a general idea about what you plan on researching? Do you EVER start with the library homepage search bar, a particular database or journal...?"

I use Google to narrow down topics, then the library website; Me too, I use Google then goto the Library website and on the side panel, looking at the broad topic areas; I kind of do it the other way, I look for the most specific results from the library search engines, then I work backwards and zoom out in my searches for topics; I use Google before I know what I'm talking about, but if I know my topic, I'll use the library databases to find my scope in that topic, I find something interesting and then I define my scope, I usually go on WorldCat.

3. "Does what you are searching for change how you begin to look for those materials? (e.g. science/math/engineering/medicine vs. history/sociology/) –

Yes, it depends a lot, I have looked through the databases a lot, so when I know what I am looking for, I know where to go, but sometimes for general knowledge, I feel guilty saying this but, I use Wikipedia for more general stuff is pretty good, but if I know what articles I want, I'd go to like, Genderwatch and find the articles I need; I use Wikipedia, but cite the sources that Wikipedia uses; For me Wikipedia is stressful because I am too impatient to find the citation, so if I just search myself, I can at least find the abstract...

4. "If you are looking for a specific article or title, how would you go about it?" (e.g. homepage search box, databases, etc.)

5. "Does the library help you get your research done?" "If so, how?"

Yes, a lot; ditto; ditto; ditto

6. "How many of you teach classes or workshops? How do you use library resources for your instruction (grad. and faculty only)?"

N/A

7. “How would you describe the difference between HTML full text, PDF full text, Connect to Resource, JSTOR or ERIC Full Text links, Full Text at IEEE Xplore, Full Text from ScienceDirect? What do you expect when you see this?” “Or, rephrased, what are the functions of these tabs/links?” “Does what it is called matter?”

If I click it, I expect, after a number of clicks, I should get full text, sometimes when I am trying to get a PDF, you have to go around in circles before you can get it, say if you find a full book online, you can't download the whole thing, just 50 pages, or not, sometimes it is not user friendly, like when I see the UMass Links, I know I am screwed, no offence, but the library usually does a good job telling me what I'm gonna expect, most of the time it is really quick...; But sometimes you have to play this game and click around to try and find it, but sometimes you get a deadend (laughter); Sometimes when you get to the 3rd party sources it can be hard to figure out how to get the article or PDF

8. “If you are trying to search for something that is more specific, are there any other tools that you use, or do you just scroll through the pages of your search results? Do you use the left handed sidebar limiters, like narrow the search by date, full text only, subject, books, articles, etc.? Why or why not?”

I absolutely use them, if I can get something with full text, I don't even consider it; I use source types, that helps a lot; Sometimes a prof. will have you use things like photos or other sources that are not usually used

9. “Are there services that the library currently does not offer that you would like to see (on the website)? Or if the library could do something to improve searching, what would that be?”

I would like to get books on tape, like Harry Potter, like my library at home in Newton, they have books on tape, so I would love to have that; I don't have a lot of criticism, I am pretty happy with the library services in general

10. “What do you think the search box searches? Does anyone know what the Discovery search function does or is (how it searches)?”

11. “What do you use the library website for?” Follow up questions about- (e.g. research, information about library services, course reserves, ‘ask me’ reference help, sub. specific librarian, subject/course research guides)

I use the course reserves, but I feel that it is dated, it is a lot easier to use stuff that is on Moodle; I haven't use the course reserves, but I use the archived periodicals;

12. “Who here uses Inter Library Loan? Why or why not?”

Yes, I use it all the time, it is really fast especially from 5 Colleges, it is great; I also made suggestions of books to buy, and they bought them.

13. "Who uses a system for keeping track and managing your research or citations (e.g. Zotero, EasyBib, RefWorks)? If so, do you find it easy to save your references from the searches you do in the library collections and resources?"

I use RefWorks, it's bit confusing, there is so much stuff going on there, but it can be really helpful for sure.

14. "Do you use Advanced Search? Why or why not?" "What about it seems confusing?"

15. "Who has had Info. Literacy Classes?"

Ya, I had it during my Junior year classes; It seems that the more you use the library website, the better you get at using it.

16. "Does anyone use the Ask Me tab?" "Or any other services on the website?"

I have reserved rooms on the website, it works well, but you can only get rooms for a few hours week...I never used the Ask Me tab...; I think that there needs to be more advertising about the library services, or a tutorial when you click on a link, it tells you how to use it; I think that all freshman should have to take some sort of seminar about how to use the library website, so many undergrads have no idea how to use the website and they shouldn't have to wait till their junior year, they should make it some sort of class (they are told about the 1 credit info lit) I know I didn't learn about this until my junior year; I didn't know about databases till 2 weeks ago when a librarian came to our class and told me about it! It would be helpful if there were more tutorials on how to use different parts of the library website (he is told that there are and they are shown on the screen where to find them); I think our generation, I'm not gonna read about how to use it, I'm not gonna read this stuff, or call a librarian freaking out, that's just how we are...(explain the EDS is designed to function more like Google, where you can enter ANY type of query, besides just subject, AU;, keyword types of searches) Instead of the Ask Me tab, make it something else that would take you to a more user friendly page, the way it is now, it doesn't look friendly; I actually like the chat service, I can tell them what I already tried, so I can get a fast answer, you should have them add to the Ask Me tab to make it have more services; I think they should have some sort of Career Services person downstairs, they could have someone from the Career Services at the library, because I never go to their offices, it would be better if they were in the library since that is where most people are hanging out; You should have Grab and Go service, because the Procratination Station can take too long, especially during finals, it would be great to have a Grab and Go station using you can use Campus Card swipe.

Appendix D

Questions and Tasks for Hands-On Testing Draft

1. "Search and click to access a full text version of an e-book about corporate social responsibility."
2. "Locate a video/DVD/movie on the US Civil Rights Movement that is available from the UMass Libraries."
3. "Find an article/e-journal about meteorological data visualization, find one from the last 2 years (2015-2017), and then click on an example of graphs, charts, or other visual data from the article."
4. "Find an image of Raymond Mungo and name the photographer."
5. "Find a full text version of an academic/peer reviewed article about homeless in Massachusetts and mental illness in the *American Journal of Public Health* journal."

Appendix E

Dear Faculty and Students:

Do you think online research at the library could be improved? Do you use online research tools at the library?

The UMass Amherst Libraries are conducting a usability test on our new Discovery Search, the new default search box on our web page that soon will be available for use. We would like to have a diverse set of participants and we were wondering if you would like to help.

Please consider volunteering for our UMass Amherst Libraries usability study! We are looking for undergraduates, graduate students, and faculty who are interested in helping us develop our next generation research platform. We will be conducting a focus group, as well as hands-on testing of our new library search platform.

Volunteers will receive a coupon for a free beverage at the Procrastination Station!

If this is something that you would like to participate in, or if you have any questions, please send an email with the following information:

1. Specify if you are an undergraduate, graduate student, or faculty
2. Your field of study/discipline
3. Choose to participate in either the focus group or hands-on testing***
4. Indicate the best time(s) when you can participate

Please note that participants may only attend **either** the focus group or the hands-on testing. Focus group and testing will take no longer than 1 hour

to: zlizee@umass.edu

Thank you!

Best,

Zack Lizée

Zachary Lizée
Usability Testing Specialist
University of Massachusetts Amherst
W.E.B. Du Bois Library
154 Hicks Way
Amherst, MA 01003
zlizee@umass.edu

Appendix F

Focus Group Questions and Script

Primary Questions:

1. “What search engine do you use first when starting on a research topic/project?” (e.g. Discovery, Google/Google Scholar, Wikipedia, databases, course guides, etc.)
2. “What is your search process when you start a research project once you have a general idea about what you plan on researching? Do you EVER start with the library homepage search bar, a particular database or journal...?”
3. “Does what you are searching for change how you begin to look for those materials? (e.g. science/math/engineering/medicine vs. history/sociology/) – **for students**
4. “If you are looking for a specific article or title, how would you go about it?” (e.g. homepage search box, databases, etc.)
5. “Does the library help you get your research done?” (**undergrad vs. grad vs. faculty**) “If so, how?”
6. “How many of you teach classes or workshops? How do you use library resources for your instruction (grad. and faculty only)?”
7. “How would you describe the difference between HTML full text, PDF full text, Connect to Resource, JSTOR or ERIC Full Text links, Full Text at IEEE Xplore, Full Text from ScienceDirect? What do you expect when you see this?” “Or, rephrased, what are the functions of these tabs/links?” “Does what it is called matter?” **Have a printout or have the library website up on a screen.**
8. “If you are trying to search for something that is more specific, are there any other tools that you use, or do you just scroll through the pages of your search results? Do you use the left handed sidebar limiters, like narrow the search by date, full text only, subject, books, articles, etc.? Why or why not?” **Have a printout or screen up**

9. "Are there services that the library currently does not offer that you would like to see (on the website)? Or if the library could do something to improve searching, what would that be?"
10. "What do you think the search box searches? Does anyone know what the Discovery search function does or is (how it searches)?"
The Discovery search box functions more like a search engine, such as Google where a simple one word search to a multi worded, natural language sentence is searched throughout both the library's physical and digital materials, as well as all of the various databases, e-journals, and other digital resources without having to search a bunch of different resources individually.

Alternate Questions:

11. "What do you use the library website for?" Follow up questions about-(e.g. research, information about library services, course reserves, 'ask me' reference help, sub. specific librarian, subject/course research guides)
12. "Who here uses Inter Library Loan? Why or why not?"
13. "Who uses a system for keeping track and managing your research or citations (e.g. Zotero, EasyBib, RefWorks)? If so, do you find it easy to save your references from the searches you do in the library collections and resources?"
14. "Do you use Advanced Search? Why or why not?" "What about it seems confusing?"
15. "Do you use ILL?"

Sample Script:

Hello, thank you for coming to our focus group about our new search box on the library homepage (we call it Discovery search). Your feedback about the search tool will be very useful to us to ensure that we deliver the best possible service to our university community. I am going to start out by reading from a list of questions I have here, be aware that there are no "wrong" answers, so please do not be afraid to speak your mind. Heather will be taking notes and running the equipment. Here is a form for everyone to fill out; it is a letter of consent, where you agree to participate in our study. We will not be releasing any information to the

public, as I said before; this is solely to assess how our new search platform is functioning. Before we start, does anyone have any questions, have I made everything clear? Feel free to ask any questions that come up during our focus group, also please let's try to be considerate of each other and allow everyone to express their opinions and feel free to discuss things amongst yourselves; we are only here to guide the discussion. And please don't feel that you will hurt our feelings, we really want your honest opinions. Thanks, and let's get started!

Closing:

I want to thank you again for participating in our focus group; we have gathered a lot of good information that will help us serve you better. We will be emailing you a post discussion survey, please take the time to fill it out, it would be greatly appreciated, thanks again!

Appendix G

UMass **Amherst** Libraries

UMass-Amherst Usability Studies Consent Form

I agree to participate in the usability study conducted and recorded by the University of Massachusetts Amherst Libraries.

I understand and consent to the use and release of this recording and understand that the data, audio, and video recordings are for research purposes only. I understand that my information will not be used for any other purpose. I relinquish any rights to the recording and understand that the recording may be used and/or duplicated by UMass Amherst Libraries without further permission. I understand that the recording and data will not be used by anyone but UMass Amherst Libraries. No personal information will be saved during this usability test.

Please sign below to indicate that you understand the information on this form and that any questions you might have about the session have been answered.

Signature _____

Name (print) _____

Date: _____

Appendix H

Post Test Survey Questions –

- How easy or hard was it to use the Discovery Search (on a scale of 1-10, 1 being very hard, 10 being very easy)? I really love/can't stand ____7____ about Discovery Search.

- How do you normally access information that you want for your research?
I normally use Google Scholar for almost all the research article search. However, I use google for other articles, news, and images. I wasn't aware of this tool at all. However, I believe that I will be using this more for books search as they are not generally available free.

- Was there anything confusing about terminology such as:
HTML Full Text vs. PDF Full Text, Connect to Resource, and Check Availability, JSTOR Full Text, ERIC Full Text, or any other terms that were confusing, frustrating, or are unknown to you? What do you expect when you see these terms?
I still don't know about the last 2 terms mentioned but it was generally easy to understand.

- Does any confusion about these terms deter you from accessing the information that you are looking for?
I wasn't able to find the last article on the search list as I wasn't quite sure of my query. I wasn't sure if I was looking for the desired item or not. The drop down menu of "select a field" was not self-explanatory.

- How familiar are you with the various resources that the library offers?
I had used it only once before. May be, I was not completely focused but it was little difficult to navigate through the resources in general.

- "I would like to see __user friendliness__ in Discovery Search."
I would like to sort content by years or type.

- "I can never find _____ in Discovery Search."

Post Test Survey Questions –

- How easy or hard was it to use the Discovery Search (on a scale of 1-10, 1 being very hard, 10 being very easy)? I really love/can't stand _____ about Discovery Search.

5; seems like an OK tool

- How do you normally access information that you want for your research?

I use pubmed, and I use the umass library

- Was there anything confusing about terminology such as: HTML Full Text vs. PDF Full Text, Connect to Resource, and Check Availability, JSTOR Full Text, ERIC Full Text, or any other terms that were confusing, frustrating, or are unknown to you? What do you expect when you see these terms?

I guess I don't really know what JSTOR and ERIC full text are.....and how they differ

- Does any confusion about these terms deter you from accessing the information that you are looking for?

I don't think so

- How familiar are you with the various resources that the library offers?

medium

- "I would like to see _____ in Discovery Search."

Easier to narrow the search

- "I can never find _____ in Discovery Search."

NA

Post Test Survey Questions –

- How easy or hard was it to use the Discovery Search (on a scale of 1-10, 1 being very hard, 10 being very easy)? I really love/can't stand _____ about Discovery Search.

Finding eBooks that were available through UMass was the most confusing aspect of it. With the old search engine, I know if I see the eBook icon that the University has access to it and I can read it immediately. But this new version didn't appear to have (or at least I don't remember seeing) an eBook icon, and when I was able to locate an eBook the University didn't always have access to it. For some reason it lists other colleges that have access to it, but I can't access them since I don't have login info for their college. If it's not available through UMass, it's extremely unlikely that I'll travel to their campus to access their computers to read an eBook. [I see how this is helpful for hard copies of items, but not for electronic resources]

- How do you normally access information that you want for your research?

I typically use the UMA WorldCat search and narrow down by Format, or go straight into ERIC since it's for education journals.

- Was there anything confusing about terminology such as: HTML Full Text vs. PDF Full Text, Connect to Resource, and Check Availability, JSTOR Full Text, ERIC Full Text, or any other terms that were confusing, frustrating, or are unknown to you?

Not that I can recall.

- Does any confusion about these terms deter you from accessing the information that you are looking for?

No, because I know if I click around enough I'll eventually find what I'm looking for.

- How familiar are you with the various resources that the library offers?

Moderately. I'm more familiar with resources specific to my discipline.

- "I would like to see (an option to clear my results) in Discovery Search."

Under 'Refine Results,' if I click on two separate sections (for example, source type and library location) all of my other search options disappear. I know that's probably because my search becomes too narrow to then also sort by language/geography/etc., but I'm used to seeing a 'Clear all' button to start over. Instead, I have to hit my back button until I'm where I want to be to start over. Also, if I unselect an option, my search options do not reappear.

- "I can never find _____ in Discovery Search."

I haven't used it enough to be able to respond to this.

Post Test Survey Questions –

- How easy or hard was it to use the Discovery Search (on a scale of 1-10, 1 being very hard, 10 being very easy)? I really love/can't stand _____ about Discovery Search.

7 I could not figure out how to select a specific journal

- How do you normally access information that you want for your research?

Umass library website, select research tab and then EBSCO or science direct

- Was there anything confusing about terminology such as:
HTML Full Text vs. PDF Full Text, Connect to Resource, and Check Availability, JSTOR Full Text, ERIC Full Text, or any other terms that were confusing, frustrating, or are unknown to you?

Figuring out if the resource was available at Umass was tricky.

- Does any confusion about these terms deter you from accessing the information that you are looking for?

No

- How familiar are you with the various resources that the library offers?

Minimally familiar

- "I would like to see _____ in Discovery Search."

- "I can never find _____ in Discovery Search."

Post Test Survey Questions –

- How easy or hard was it to use the Discovery Search (on a scale of 1-10, 1 being very hard, 10 being very easy)? I really love/can't stand _____ about Discovery Search.

9 it's easy but it's also very confusing when navigating the website. Since I don't usually scroll down to view the resources when I click open a resource.

- How do you normally access information that you want for your research?

I try to narrow down the research as much as possible. Therefore, if it's something that I want specifically I will use the advance research.

- Was there anything confusing about terminology such as:
HTML Full Text vs. PDF Full Text, Connect to Resource, and Check Availability, JSTOR Full Text, ERIC Full Text, or any other terms that were confusing, frustrating, or are unknown to you?

I am not familiar with JSTOR Full Text, and ERIC Full Text.

- Does any confusion about these terms deter you from accessing the information that you are looking for?

This makes me limit my research to only the terminology that I am familiar with. Such as PDF Full Text, Connect to Resource, and Check Availability etc.

- How familiar are you with the various resources that the library offers?

Not that familiar, I have done some research for some books for my project but it's was confusing to navigate.

- "I would like to see _____ in Discovery Search."

- "I can never find _____ in Discovery Search."

Post Test Survey Questions –

- How easy or hard was it to use the Discovery Search (on a scale of 1-10, 1 being very hard, 10 being very easy)? I really love/can't stand _____ about Discovery Search.

7

What I found irritating was the following:

(1) When search results were displayed, entering new search terms in the box would not reset restrictions, even if you hit the “clear” button, which I found counterintuitive; I would expect entering a new search to clear date restrictions, etc.

(2) The controlled vocabulary for each database is different. E.g. on the mental illness search, some databases appear to use “mental illness” as a subject heading, while others appear to use “mental health.”

- How do you normally access information that you want for your research?

I use a range of resources, databases, and bibliographies. For recent secondary literature my main points of entry are, in no particular order, Historical Abstracts, the ISIS Critical Bibliography (now available as a database: <https://data.isiscb.org>), and Web of Science Cited Reference search. For digitized primary source material, I tend to use the Biodiversity Heritage Library (since I do research in history of natural history), Gallica, e-rara, and the MDZ Digitale Bibliothek.

- Was there anything confusing about terminology such as: HTML Full Text vs. PDF Full Text, Connect to Resource, and Check Availability, JSTOR Full Text, ERIC Full Text, or any other terms that were confusing, frustrating, or are unknown to you?

No.

- Does any confusion about these terms deter you from accessing the information that you are looking for?

No.

- How familiar are you with the various resources that the library offers?

Reasonably familiar.

- “I would like to see _____ in Discovery Search.”

Results grouped by item type would be helpful, so that a user could get a better sense of the range of material in each category, instead of having to limit the search.

- “I can never find _____ in Discovery Search.”

Post Test Survey Questions –

- How easy or hard was it to use the Discovery Search (on a scale of 1-10, 1 being very hard, 10 being very easy)? I really love/can't stand _____ about Discovery Search.

On a scale of 1-10, it is about a 3.

I don't not like the discovery search option.

- How do you normally access information that you want for your research?

Google Scholar

- Was there anything confusing about terminology such as: HTML Full Text vs. PDF Full Text, Connect to Resource, and Check Availability, JSTOR Full Text, ERIC Full Text, or any other terms that were confusing, frustrating, or are unknown to you? What do you expect when you see these terms?

I expected to see most of the terms. I do not know what ERIC Full Text is but can make assumptions.

- Does any confusion about these terms deter you from accessing the information that you are looking for?

No.

- How familiar are you with the various resources that the library offers?

Somewhat familiar.

- "I would like to see _____ in Discovery Search."

More organization and easier ways to return to my main search.

- "I can never find _____ in Discovery Search."

It was difficult to go through peer reviewed sources then videos then pictures.

Post Test Survey Questions –

- How easy or hard was it to use the Discovery Search (on a scale of 1-10, 1 being very hard, 10 being very easy)? I really love/can't stand _____ about Discovery Search.

On a scale of 1-10, it is about a 3.

I don't not like the discovery search option.

- How do you normally access information that you want for your research?

Google Scholar

- Was there anything confusing about terminology such as: HTML Full Text vs. PDF Full Text, Connect to Resource, and Check Availability, JSTOR Full Text, ERIC Full Text, or any other terms that were confusing, frustrating, or are unknown to you? What do you expect when you see these terms?

I expected to see most of the terms. I do not know what ERIC Full Text is but can make assumptions.

- Does any confusion about these terms deter you from accessing the information that you are looking for?

No.

- How familiar are you with the various resources that the library offers?

Somewhat familiar.

- "I would like to see _____ in Discovery Search."

More organization and easier ways to return to my main search.

- "I can never find _____ in Discovery Search."

It was difficult to go through peer reviewed sources then videos then pictures.

Post Test Survey Questions –

- How easy or hard was it to use the Discovery Search (on a scale of 1-10, 1 being very hard, 10 being very easy)? I really love/can't stand _____ about Discovery Search.

Quite easy - 9

- How do you normally access information that you want for your research?

Umass library search

- Was there anything confusing about terminology such as: HTML Full Text vs. PDF Full Text, Connect to Resource, and Check Availability, JSTOR Full Text, ERIC Full Text, or any other terms that were confusing, frustrating, or are unknown to you?

No

- Does any confusion about these terms deter you from accessing the information that you are looking for?

No

- How familiar are you with the various resources that the library offers?

Usually, I look for books or articles (online and to borrow)

- "I would like to see _____ in Discovery Search."

No suggestions

- "I can never find _____ in Discovery Search."

I did not find any articles on meteorology data visualization

Post Test Survey Questions –

- How easy or hard was it to use the Discovery Search (on a scale of 1-10, 1 being very hard, 10 being very easy)? I really love/can't stand _____ about Discovery Search.

5. It was hard for me to find full-text links of online articles and connect to the eBooks.

- How do you normally access information that you want for your research?

If I am on campus, I normally access information that I need through my research for PubMed. When I am off campus, I use the off campus sign in on the library website and search the articles I need using the WorldCat Search box on the library website. Then I find full-text versions of online articles using this search.

- Was there anything confusing about terminology such as: HTML Full Text vs. PDF Full Text, Connect to Resource, and Check Availability, JSTOR Full Text, ERIC Full Text, or any other terms that were confusing, frustrating, or are unknown to you?

I'm not sure was JSTOR Full Text or ERIC Full Text is.

- Does any confusion about these terms deter you from accessing the information that you are looking for?

I'm not sure.

- How familiar are you with the various resources that the library offers?

I'm not very familiar with the resources the library offers.

- "I would like to see _____ in Discovery Search."

An easy way to find full text online academic articles, especially when off campus. It helps to include a link right below the entry on the search page.

- "I can never find _____ in Discovery Search."

I had trouble finding the link to access the ebook when it brought me to the call number of the ebook.

Post Test Survey Questions –

- How easy or hard was it to use the Discovery Search (on a scale of 1-10, 1 being very hard, 10 being very easy)? I really love/can't stand _____ about Discovery Search.

7 – I didn't like the layout of Discovery search; some settings were hard to adjust

- How do you normally access information that you want for your research?

I would go to PubMed or WebofScience or Google Scholar

- Was there anything confusing about terminology such as:
HTML Full Text vs. PDF Full Text, Connect to Resource, and Check Availability, JSTOR Full Text, ERIC Full Text, or any other terms that were confusing, frustrating, or are unknown to you?

No, I understood it all!

- Does any confusion about these terms deter you from accessing the information that you are looking for?

If I didn't understand, it would deter me

- How familiar are you with the various resources that the library offers?

Very familiar

- "I would like to see _____ in Discovery Search."

Better formatting

- "I can never find _____ in Discovery Search."

Specific year data

Post Test Survey Questions –

- How easy or hard was it to use the Discovery Search (on a scale of 1-10, 1 being very hard, 10 being very easy)? I really love/can't stand _____ about Discovery Search.

I haven't tried using Discovery Search yet; I was not in a group that tested it.

- How do you normally access information that you want for your research?

I search in Web of Science, or go to particular articles and use their bibliographies.

- Was there anything confusing about terminology such as:
HTML Full Text vs. PDF Full Text, Connect to Resource, and Check Availability, JSTOR Full Text, ERIC Full Text, or any other terms that were confusing, frustrating, or are unknown to you?

The first two terms are not confusing. I did not encounter the others.

- Does any confusion about these terms deter you from accessing the information that you are looking for?

Not so far.

- How familiar are you with the various resources that the library offers?

I am partly familiar with the on-line resources and regularly use the hard copy reserve service

- "I would like to see _____ in Discovery Search."

Wildcards and Boolean terms; ability to enter the journal, volume, and starting page to locate a known article

- "I can never find _____ in Discovery Search."

Please see first comment.

Post Test Survey Questions –

- How easy or hard was it to use the Discovery Search (on a scale of 1-10, 1 being very hard, 10 being very easy)? I really love/can't stand _____ about Discovery Search.

Don't know – but love the idea of search a single term across all platforms.

- How do you normally access information that you want for your research?

UMass Libraries / databases and collections

- Was there anything confusing about terminology such as:
HTML Full Text vs. PDF Full Text, Connect to Resource, and Check Availability, JSTOR Full Text, ERIC Full Text, or any other terms that were confusing, frustrating, or are unknown to you?

Sterling?

- Does any confusion about these terms deter you from accessing the information that you are looking for?

No.

- How familiar are you with the various resources that the library offers?

Medium to well.

- "I would like to see _____ in Discovery Search."
- "I can never find _____ in Discovery Search."

Post Test Survey Questions –

- How easy or hard was it to use the Discovery Search (on a scale of 1-10, 1 being very hard, 10 being very easy)? I really love/can't stand _____ about Discovery Search.

I found Discovery just as user-friendly as other search engines – however, access to ILL through Discovery is not intuitive.

- How do you normally access information that you want for your research?

Google Scholar, library databases, & ILL.

- Was there anything confusing about terminology such as: HTML Full Text vs. PDF Full Text, Connect to Resource, and Check Availability, JSTOR Full Text, ERIC Full Text, or any other terms that were confusing, frustrating, or are unknown to you?

It's both confusing and frustrating – I prefer PDF full text. If this is not available, I click down the list until I find the full article but this process often seems circular.

- Does any confusion about these terms deter you from accessing the information that you are looking for?

Occasionally. Sometimes it's easier to simply Google the article title to find a direct link to a PDF.

- How familiar are you with the various resources that the library offers?

Pretty familiar (for the purposes I use the library for – accessing journal articles, books, printing services, etc.).

- "I would like to see _____ in Discovery Search."

More options in the "advanced search" menu - e.g., the ability to select the format you wish to receive this information (e.g., PDF full text).

- "I can never find _____ in Discovery Search."

N/A

Post Test Survey Questions –

o How easy or hard was it to use the Discovery Search (on a scale of 1-10, 1 being very hard, 10 being very easy)? I really love/can't stand _____ about Discovery Search.

- 8
- I really like how many options there are to help narrow down my search (on the side bar on the left)
- I didn't like how some things were not obvious.

- How to get to the actual source / reading

- How to tell if it is available online or if I need to go pick it up somewhere

- The bar on the far right is a control bar for citations, not the whole article

o How do you normally access information that you want for your research?

- Usually I use google scholar

o Was there anything confusing about terminology such as: HTML Full Text vs. PDF Full Text, Connect to Resource, and Check Availability, JSTOR Full Text, ERIC Full Text, or any other terms that were confusing, frustrating, or are unknown to you?

- No, I don't remember not knowing what something meant

- Although, I don't know what JSTOR Full Text or ERIC Full Text mean. I assume it's something like a PDF. I also assume if someone were looking for them they would know what that means.

o Does any confusion about these terms deter you from accessing the information that you are looking for?

- No, I assume a database search engine like this, especially one provided through umass, is safe, thus I would just download files / follow links until I found what I was looking for

- What would deter me from accessing information is not understanding if the item was available online or in person. I would get really frustrated spending time looking for a link to the source and then realizing I have to go get it from the library. It is important easily see where the source is available.

o How familiar are you with the various resources that the library offers?

- Moderately. I have used some of its database search engines before. I do tend to lean toward using google scholar for research because the current one (not the one you had me use) I find confusing, intimidating, and limiting. The one you had me use I would most likely use equally or more often than google scholar. It is not intimidating.

- I don't know if this is what you mean, but I have used the tutoring center and many of the resources in the basement such as scanners, printers, the reservable cubicles, whiteboards, etc. We have a VERY

student-use-friendly library. It isn't just a building of books, it is a community center for facilitating student success.

o "I would like to see _____ in Discovery Search."

▪ More labeling of navigation bars (the left and right panels) ▪ I don't remember if it does this or not, but when I click a link (specifically to an outside source) it would be very helpful and intuitive if it opened in a new tab, not reloading the current tab. In other words, I don't want to lose the database tab when I view the source.

o "I can never find _____ in Discovery Search."

▪ If the source is available online or in person ▪ The link to the source (sometimes)

Post Test Survey Questions –

- o How easy or hard was it to use the Discovery Search (on a scale of 1-10, 1 being very hard, 10 being very easy)? I really love/can't stand _____ about Discovery Search.

5/10

I dislike the limited options on the sidebar to narrow down results.

- o How do you normally access information that you want for your research?

Searching a database relevant to my field, like Academic Search Premier.

- o Was there anything confusing about terminology such as:
HTML Full Text vs. PDF Full Text, Connect to Resource, and Check Availability, JSTOR Full Text, ERIC Full Text, or any other terms that were confusing, frustrating, or are unknown to you?

I'm already familiar with all those terms.

- o Does any confusion about these terms deter you from accessing the information that you are looking for?

N/A

- How familiar are you with the various resources that the library offers?

I am primarily familiar with journal article and book resources. I am less familiar with multimedia because it's less relevant to my research, and copyrighted videos are often cumbersome to use while teaching due to logging in/setup processes.

- "I would like to see _____ in Discovery Search."

I would like to have more options on the sidebar to narrow down results. It also seemed that the options on the side that were available weren't the ones I was looking for (not always in ordinary language or simple keywords).

- "I can never find _____ in Discovery Search."

It's hard to find out where a resource is located—it should be easier to see what's available at UMass and what needs to be accessed through ILL.

Post Test Survey Questions –

- How easy or hard was it to use the Discovery Search (on a scale of 1-10, 1 being very hard, 10 being very easy)? I really love/can't stand _____ about Discovery Search.

8. Discovery Search was easy to use for full text, wasn't sure images were being searched when I entered them. Access to journals was limited: only 6-7 journals showed up

- How do you normally access information that you want for your research?

Going to Scholar

- Was there anything confusing about terminology such as: HTML Full Text vs. PDF Full Text, Connect to Resource, and Check Availability, JSTOR Full Text, ERIC Full Text, or any other terms that were confusing, frustrating, or are unknown to you?

'Full Text' phrase was not confusing.

- Does any confusion about these terms deter you from accessing the information that you are looking for?

Image search was challenging, I wasn't getting any images as search results

- How familiar are you with the various resources that the library offers?

Yes

- "I would like to see _____ in Discovery Search."

Access to more journals

Image search

- "I can never find _____ in Discovery Search."

Post Test Survey Questions –

- How easy or hard was it to use the Discovery Search (on a scale of 1-10, 1 being very hard, 10 being very easy)? I really love/can't stand _____ about Discovery Search.

4. I think I'm just extremely used to the UMA WorldCat search system. I find it a lot easier to access peer reviewed literature over WorldCat because it clearly specifies what is available at UMass and what's not. This makes obtaining the resources extremely easy. Also, I found that Discovery Search isn't as intuitive, especially when looking for the ILLIAD button.

- How do you normally access information that you want for your research?

I typically do a PubMed search, and then if the full text link is not available, copy the exact title of the article into the library website on the UMA WorldCat search. This typically is great at finding exactly what I want. If it's not available digitally, I'm usually able to request it through ILLIAD, or, ask for a document delivery if UMass has print holdings.

- Was there anything confusing about terminology such as: HTML Full Text vs. PDF Full Text, Connect to Resource, and Check Availability, JSTOR Full Text, ERIC Full Text, or any other terms that were confusing, frustrating, or are unknown to you?

I don't find the terms confusing. I just thought it was a bit of an information overload. One thing I especially dislike about Discovery Search is that you need to manually click on the drop down menus on the left side to limit your search to specific items. This is very time-consuming and frustrating.

- Does any confusion about these terms deter you from accessing the information that you are looking for?

The resources are not as easy to access as in other search platforms. There's a lot of roundabout clicks you need to make to get to the same item. In essence – I can find what I'm looking for on UMA WorldCat in 3 clicks. In Discovery Search, it takes me a lot more clicks.

- How familiar are you with the various resources that the library offers?

I'm quite familiar with most of the resources offered by the library. Being a PhD student, I utilize a lot of these resources, and actually appreciate them a lot.

- "I would like to see _____ in Discovery Search."

I would like to see a quicker way to access items in Discovery Search

- "I can never find _____ in Discovery Search."

I haven't used it enough to comment.

How easy or hard was it to use the Discovery Search (on a scale of 1-10, 1 being very hard, 10 being very easy)?

7

How do you normally access information that you want for your research?

I just do a search in the main library homepage or if I know what I'm looking for I'll just enter in the title.

Was there anything confusing about terminology such as: HTML Full Text vs. PDF Full Text, Connect to Resource, and Check Availability, JSTOR Full Text, ERIC Full Text, or any other terms that were confusing, frustrating, or are unknown to you?

No. I have a hard time accessing ERIC files so I generally don't bother if I come across one. It's been a while.

How familiar are you with the various resources that the library offers?

I feel pretty familiar with the resources, but maybe that's all in my head!

APPENDIX I

TO: SENIOR MANAGEMENT GROUP
FROM: SALLY KRASH, HEAD OF INFORMATION RESOURCES MANAGEMENT
SUBJECT: USABILITY TESTING OF DISCOVERY TOOLS
DATE: MARCH 8, 2017

To ensure that the UMass Amherst Libraries is meeting the discovery needs of our users, we intend to run a series of usability tests between March 27th and April 20th to determine the effectiveness of the Libraries' EDS discovery platform and related tools. During the testing period, no changes will be made to the discovery platform, with the exception of fixing problems, so that testing is consistent throughout the entire testing process. Usability testing will look at how users interact with the platform, ease of navigation, ability to find what one is looking for, ability to link to other resources, where to look for help, etc.

For the purposes of our usability testing, we will be testing the Libraries' discovery platform, EDS, and related content/services (SFX, ALEPH OPAC, Database List, etc.). Information collected from these usability studies will be used to improve services within the library. Data gathered will not be used to make generalized observations of students.

Objectives

Usability testing will help IRM improve the discovery environment in terms of site navigation, user comprehension, and overall user satisfaction. Usability tests will aim to answer the following questions:

RQ1: How do students, faculty, and staff find things with the platform?

What are the students' primary discovery objectives?

Are there deadends?

RQ2: How do students, faculty, and staff navigate the Libraries' discovery tools?

How long will it take to complete a task?

Do naming conventions align with users' perceptions?

Design

Usability studies will employ a variety of non-experimental, direct, and observational methods.

Users can potentially participate in the following:

- Complete non-experimental, descriptive surveys.
- Participate in focus groups.
- Participate in hands-on usability testing of the discovery platform, such as, where to locate a book owned by the libraries or a specific academic journal article, etc.

The studies will focus on discovery tasks for the users, where investigators will measure time to task completion, discuss student opinions on tasks, the navigation, and the platform in general, as it pertains to the tasks.

A few examples of task questions would include the following:

- Find the journal Icarus
 - Search for articles on climate impact
 - Link to an article
- Find an ebook on radio waves
 - Link to the ebook
- Find materials about data visualization
 - Refine your results to the last 5 years
 - Locate an image file from one of the search results

Incentives

- Procrastination Station coupons

Importance

Usability studies seek to improve the discovery experience for library users. Information gathered will never be used for generalizable knowledge. Instead, information collected will help IRM to develop the discovery environment in ways that meet user needs more efficiently and effectively.

Study Procedures

2/15-3/1	Research tools and methods needed to conduct usability testing. Contact appropriate colleagues (like Harvard's User Research Center) to determine best practices.
3/1-3/11	Work with colleagues across the library to put out calls to participate via social media, library website, and on campus signage. Order equipment and supplies.
3/13-3/17	Set up equipment/lab. Develop test scenarios, surveys and focus group activities as appropriate.
3/20-3/24	Confirm participation appointments.
3/27-4/20	Conduct usability testing/surveys/focus groups.
4/24-5/15	Collate data, analyze results, develop recommendations, and create report
5/22	Present recommendations/report

Jakob Nielsen suggests that when testing distinct groups, it will be best to include 3 or 4 participants from each category. In all studies, categories would be students, faculty, and staff groups (<http://www.nngroup.com/articles/why-you-only-need-to-test-with-5-users/>). Investigators will call for participation through various avenues of communication, such as social media, the library homepage, and signs in the library.

At the scheduled session, participants will be asked to complete a short demographic survey. Because the sessions will be recorded, participants will also be given an informed consent form. Sessions will take no longer than 60 minutes. During study sessions, participants will interact with library discovery tools. Additionally, at least one focus group will be held. For their time, participants will receive a coupon to the Procrastination Station.

Subject Recruitment Methods

1. Identifying and Recruiting Subjects

These studies will employ a convenience sample, and in doing so, will be recruiting students through a range of communications. Investigators will reach out to the sample population using Facebook, Twitter, email, and an announcement on the homepage of the website.

2. Advertisement

Do you use online research tools? Do you think online research could be improved?

If so, please consider volunteering for a UMass Amherst Libraries study! We're looking for graduates, undergraduates and faculty who are interested in helping us develop our next generation research platform. In appreciation for your time and effort, volunteers will receive a coupon for a free beverage at the Procrastination Station.

If this is something you'd be interested in volunteering for, or if you have any questions, please contact xxx.

Thank you!

3. HIPAA, FERPA, PPRA

There will be no complications with HIPAA, FERPA, or PPRA given that the study will not recruit from vulnerable populations nor require health or student records.

Appendix J

Recommendations

Dataload Related Issues

1. EDS search results for e-books show all e-books held by the 5 Colleges, but it is not always clear which ones are accessible from UMass Libraries. This creates confusion and frustration with patrons.
 - a. Work with EBSCO to create an all-encompassing **UMass only/UMass E-Resources** limiter/subsection in EDS listings of library locations.
 - b. Review and find incomplete/inaccurate bibliographic records and overhaul these records in Aleph and other relative datasets so UMass resources are more easily distinguishable.
 - c. Recommend that Five Colleges Discovery/Aleph Committees review the number of clicks it takes to get from Discovery to an e-book, and see if that number can be reduced.
 - d. Configure **UMass only/UMass E-Resources** limiter so UMass content displays at the top of search results.
2. UMass e-books should be ranked at the top of relevance results in EDS, as of now, they are not.
 - a. Editing of bibliographic records to accurately reflect what is available via UMass Amherst Libraries.
 - b. Work with EBSCO to customize how EDS pulls records from the shared 5 College Catalog.
 - c. See 1 d.
3. Online videos available via UMass are not always obviously accessible – patrons have issues identifying what resources are available via online access (e.g. Kanopy, UM Internet Films on Demand, Alexander St. Press, Gale videos, etc.).
 - a. See Recommendation 1a.
 - b. Have EBSCO configure limiters to display UMass content more prominently.
4. Use of video limiter can skew results showing that videos are not available online.
 - a. Work with EBSCO to create an all-encompassing **UMass only/UMass E-Resources** limiter/subsection in EDS listings of library locations.
5. Using a location (e.g. Du Bois only) limiter for videos does always not show all available video resources, if any.
 - a. See Recommendation 1a and 2b.
6. Redundant records and records for items are not accessible via UMass EDS should not be displayed.

- a. Revise the way our MARC content is displayed on EDS. By reimagining the way our Aleph MARC content is sent to and used by EDS will prioritize UMass content and reduce duplication of inaccessible Five Collage content.

Design Related Issues

7. The **New Search** button is in a poor location (upper left corner). Users do not see it and their subsequent searches are skewed because limiters/expanders and other sorting preferences are still enabled from the prior search.
 - a. Existing **Clear** button will be reengineered into a **New Search** button that will redirect a patron to the advanced search page, which also clears any limiters/expanders set during prior searches, giving the patron a fresh start on their new search.
8. SFX does not always show when a digital item (e.g. online video) is available, which creates confusion.
 - a. Either eliminate SFX from EDS display, or modify records so SFX displays if and when a digital resource is available.
 - b. Customize links on EDS to enable ease of access for patrons.
9. Clickable links/tabs to access items are not easily seen by many patrons, (**PDF Full Text, Connect to Resource, Full Text at IEEE Xplore, JSTOR Full Text**, etc.). Reduce the number of tabs that link users to various resources to increase accessibility.
 - a. Research what other institutions have done, consult with EBSCO about how to customize/design a single link for full text access.
 - b. Include instruction on how and what tabs/links provide access to full text versions of e-resources.
10. Create a custom ILL tab.
 - a. This is a customizable tab that will be in place by the July 2017 rollout of EDS.
11. Redesign the **Ask Us** tab so it has more visibility and usage.
 - a. Have quick links to research resources, not just an email link on left handed Ask Us menu.
 - b. Communicate from the main page that the **Ask Us** tab has a chat function with a real live person.
 - c. Address in next round of usability testing.
12. Less dropdown menus on the library homepage.
 - a. It was mentioned in focus groups that students rarely use them, or are willing to explore what is contained within them. Consider other options that can have the same functionality and deliver comparable service.

Library Services Issues

13. Promote the library services more.
 - a. Create more mouse hover over tutorials for various features on the library homepage.
 - b. Engage in more outreach about library instruction like: “Demystifying Library Research”, how to customize course guides, and easier access for “how to” videos.
14. There is a need for EDS information literacy skills for UMass Library staff, faculty, and students (i.e. many patrons do not know how to use EDS’ many facets, limiters, Advanced Search/Boolean, and other related capabilities).
 - a. Library staff training scheduled to take place in August 2017 before the start of the semester.
 - b. EDS instruction for students and faculty can be conducted by reference/research librarians.
15. Many 1st and 2nd year students have trouble identifying what type of resource they are looking at, as well as understanding if the resource is available to them via UMass Libraries.
 - a. This can be addressed with more in-depth information literacy instruction.
16. There is a wish for increased collaboration with subject liaison librarians.
 - a. Consider different outreach approaches to promote more cooperation with faculty.
17. Need for more frequent and in-depth information literacy instruction, particularly for undergraduates.
 - a. Assessment of current approaches to library instruction to look for more opportunities for in-depth instruction.