Discovering the library: finding the hidden barriers to success using the catalog

Ellen Safley
University of Texas at Dallas
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Ellen Derey Safley

University of Texas at Dallas, United States of America

safley@utdallas.edu

Abstract

Over the past two years, the Catalog Committee at the University of Texas at Dallas used a verbal protocol analysis to research how students use the catalog system to find known items, to locate materials on a subject, and to evaluate the design and appearance of the interface. The research is attempting to evaluate the thought process and effectiveness of how students use the catalog system. The Library is conducting its third session to evaluate the changes made in the discovery process. During these sessions, the Library will incorporate a means to collect both the audio portion of the person's oral thought processes and a capture of the links tried in answering a question. The testing covers a range of levels of undergraduate students many who have received basic library instruction.

Keywords: protocol analysis, library catalogs, focus groups

Introduction.

The Internet changes everything. Use of traditional academic library services such as reference is declining in many institutions. The demand for printed materials pales in comparison with the use of electronic resources. One OCLC report indicates that nearly 90% of students and faculty find information without using licensed resources and by browsing the Internet (De Rosa, 2006, p. 1-7) while another says that only 1% of respondents began their information search at a library web site (De Rosa, 2005, 1-17).

Library catalogs have always been difficult to use. When catalogs consisted of drawers of cards, the customer had to learn about filing rules, uniform entries, and subject headings. Automated systems assisted in making the catalog easier than in the past, but many of the problems from the printed form were transferred to online systems. Once search engines were developed to enable anyone to type anything in any order and get results, library catalogs seemed truly antiquated.

Evaluation of the future of library catalogs is a hot topic at conferences and in the library science literature. Markey (2007) reviewed the literature on rethinking library catalogs (Markey, 2007). Redesigning library catalogs involves making the systems easier to use and similar to consulting a search engine box to find information over the Internet. Catalog searching could direct novice users towards defining their search rather than requiring them to speak an unfamiliar language of legitimized subjects, Boolean operators, acronyms and library science jargon, and holdings statements.
Despite cataloging standards, online public access catalogs have been manipulated by libraries in an attempt to meet their customer's needs and their collections. The types of searching that can be undertaken, the limits, the displays, and sorting functions vary across libraries. Many basic searches require the customer to know how to enter information. Sometimes catalog searching requires the exact title while ignoring the initial articles, some title searches are by keyword, and some are sorted by date or relevance as defined by the library. All of these nuances to a library catalog assist in inventory control, but do little to ease the stress of locating information.

A few system vendors are adding faceted searching to guide customers in fine tuning or limiting their results. In addition to the price tag of the faceted module, these new systems require additional software and hardware. Unless vendors are willing to convert their public catalog systems within the subscribed modules, many libraries will be unable to afford the new configurations in the short term.

The University of Texas at Dallas Libraries Catalog Committee is comprised of librarians and paraprofessionals from systems, public, and technical services. This standing committee reviews the quality and effectiveness of the catalog and is responsible for decisions regarding any changes made that impact the public use of the system. At the University of Texas at Dallas Libraries, the Catalog Committee is working to discover how to improve the catalog and make it more usable until funding is available to adopt newer technologies. Over a period of two years, the Committee conducted focus group testing on undergraduates to get a different perspective on the catalog and its use. Prior to administering the testing, the Committee reviewed the usage statistics by type of search over a period of months and analyzed a number of transaction logs.

The Committee had reviewed the search interface, all help screens, most messages, and the overall look and feel of the system prior to the testing. Default settings were also reviewed. The Committee members seemed satisfied that the catalog was optimized within the confines of the system software.

Methodology

Verbal protocol analysis (Ericsson 1993) was selected as it enabled the librarians and others to observe undergraduate students in the process of searching for known items. By each student verbalizing their thought processes, the librarians were able to evaluate how the student interacted with the catalog interface. Rather than conducting surveys or reading transaction logs, the observation of individuals created an environment for the librarians to see why some students consider the Library difficult to use. It was overwhelmingly useful for the professionals to monitor the test as it resulted in outcomes that would not have been possible without the observation.

The test was devised to determine if the headings, labels, messages, and other phrases within the catalog were jargon-free and understandable and if there were any changes that were identified by the students would make the catalog easier to use. The reference librarians were tasked with determining what was confusing within the catalog, what questions were asked repeatedly about the system, where failures occurred in the search process, and why the student did not find the item they were asked to find.

The initial tests involved 14 undergraduates (7 men and 7 women) who were selected to represent most of the major degree programs in the University. Approximately half of them had received at least one formal library instruction session. Most undergraduate instruction sessions include a basic introduction to searching the library catalog and finding periodical articles through a set of multidisciplinary article databases. The instruction gives students a foundation in determining
if the library owns a book, has materials by a particular author or on a particular subject, and if the items are available. Finally, the students were asked if they considered themselves knowledgeable about using the library for research. Students were selected to provide a range of library research abilities.

The test was divided into 3 sections: structured searching, unstructured searching, and flashcards. Questions in the structured searching section had correct or incorrect answers. Other sections asked for opinions. These results were analyzed to determine preference and to make the options more understandable to a novice.

During the first two rounds of testing, the staff manually recorded the results of the questions. Their ability to record was limited. For the third round of testing which will occur in early 2008, the Library will purchase software to record the mouse movements of the student as they are conducting the test and save their thought patterns as expressed by their oral comments.

Analysis and Findings

While the thought processes observed could not be captured during this phase of the testing, observing and listening to each student had a dramatic impact on the librarians. Because the librarians observed the testing, most were not surprised by many of the poor outcomes. The results gave the librarians compelling reasons to change the search interface. Many changes were made in the catalog to improve the student’s success.

After the initial round of testing and analysis, the Catalog Committee reviewed the findings. The results of the testing were mixed; several of the questions showed major flaws with the system’s software and could not be changed.

The Committee tried to simplify all searching by determining what might improve the catalog over a series of productive meetings. While the majority of members recommended certain changes, the process was deemed an experiment. All changes that were agreed upon were reversible if they did not achieve positive results in the next round of testing.

Instead of assuming that the changes in the catalog would improve the results, the Library undertook another set of testing. In nearly every case, the same questions were asked of a different set of students. Again, the librarians observed the process. It should be noted that each student was tested individually and each session took approximately 60 minutes to complete.

After two rounds of testing, the Committee halted the focus groups to compare the results. Overall, there was an 11% improvement between the tests and most changes occurred for questions where the Committee had made changes to the interface. In a few cases, the Committee did not change the interface although the results in both rounds of testing were negative. The Committee could not agree on wording to convey the meaning that would be succinct enough for the screens. Students did not understand the ideas behind the words, “Recall”, “On Hold”, “Series”, or “Returned”. Several of these words indicated to the students that the book had to be returned to the publisher. Recalled indicated that it was defective and had to be returned, and Returned had a similar meaning. Several students thought the phrase “On Hold” meant that the item could never be checked out or that it was only in the library for reading when the item is actually being held for customer pickup. On the catalog header was a key called Title. None of the students in either round of the testing answered the question why one would select that key. The wording on the key now reads Title List. This change will be evaluated in the third phase of the testing. In the same header, the word History was used and none of the students in the initial round understood the
meaning behind the word. This button was renamed Search History. Only 14% of the students understood Search History. While this is a positive change, the Committee will reevaluate this wording. In the initial round of testing, the call number field in the holding statements was linked to allow a customer easy access to a shelflist. Students did not understand this concept and the links were removed.

Several responses did surprise the Committee. The students understood the concepts behind limits (93% correct), behind ISBN number (93% correct), behind keyword (93% correct), behind the differences between brief and long view (86% correct), and behind help (64%). The phrases dealing with electronic resources showed that students have no problems understanding the meaning. The words “eBooks”, “eJournals”, “full-text”, and “online” were not confusing to most students.

Many of the changes made tried to add help within the structure of the search. For example, if the option was to search by title, the field was changed from Title to Title-Omit first word “a” “an” or “the” in order to prevent the student from entering the words “a”, “an”, or “the” at the beginning of any title search. The Committee added features such as More Like This which captured the subject and author headings into hyperlinks. Both rounds of testing showed that over 90% of the students thought the link would be useful. The catalog header had a button called Patron which was changed to My Account. This change resulted in an 86% improvement between the two tests. The History button was changed to Search History. This change resulted in a 50% improvement over the first test, or 86% of the time the student gave a correct answer. The button Set Search Limits was changed to Narrow My Search. This change resulted in a 14% improvement with 65% of the students understanding the message. The Staff View option was removed as 86% of students did not understand this in either round of testing. Recall was changed to Request. During the final round of testing, 79% of the students understood the meaning of Request as compared to 57% for the word Recall.

Many of the positive changes were made in the phrases selected to alert students to what options are available. These phrases include when an item is on order, in processing, or checked out. The initial testing showed that students did not understand the messages. Previously, the message for check out items was Checked Out – Due on (a date). The new message reads Checked Out – Due on (a date). Want it? Use REQUEST button above. The new message resulted in a 57% improvement and 100% of the students understood the phrase. Similarly, the message for In Process now reads Just arrived. Want It? Ask at the Reference Desk or call ****. This change resulted in an 86% increase in understanding. The students voiced preferences for phrasing. They preferred Find This to Search This. They preferred Journal Title to Periodical Title.

Two areas showed a complete disconnect with the students and the catalog. They were major elements of the bibliographic record and holdings statements. For example, many students were unaware that the publisher and the place of publication were included in the catalog record. In part, this explains why many students continue to ask for assistance with finding elements to complete a citation.

Secondly, catalogs provide information about the holdings of a particular journal. Test questions concerning what volume of a journal the library owned and what particular volume of a journal was available in print or online were not answered correctly. Only 14% of students understood how to read these holdings statements. Often, the students confused the start date for a journal with what the library owned. The concept that journal titles change over time is unknown
to the undergraduates as well as that journals cease publication. Librarians are routinely asked why a particular older volume of a journal is not online. The student’s failure to read and understand the holding statements explains the need for reference librarians to interpret their meaning. The popularity of A-Z lists of electronic journals provides some insight into why many are choosing to use a simple list rather than a comprehensive catalog.

Discussion and Conclusion

Throughout much of testing, it seemed obvious that despite any formal instruction that the librarians had provided, many of the students were using the catalog for the first time or the testing helped them to understand its potential. Despite not knowing how to answer a question, the students wanted to know how to answer the question after the session. The librarians found this encouraging and strong evidence for the need for more in-depth instruction sessions.

The testing could have been improved. The Library had never used focus groups to assess the catalog. While the transcripts of each session are not available, the librarians observing the test was equally effective as a staff development tool. Use of advanced software designed for this purpose is available and would limit any stress or changes that were created by monitoring the session. In several instances, the test questions built on each other and the administrators had to give a student the answer to proceed with the test. If this prompting was not available and the software was meant to substitute for the administrators, the student could not have completed the test. In the future, the testing will be completed with a combination of recording each session and unobtrusive monitoring.

The students were active learners. They tried very hard to find the answer to the question while searching the catalog. Students tried to make the exercise more difficult and verbalized their frustration in not being able to answer certain questions. The Committee believed this was a problem with the catalog not the student.

Originally the Catalog Committee had planned to test other constituents within the University including sets of faculty members and graduate students. While the librarians might conduct this testing in the future, the need to improve the advanced searching features was deemed unnecessary. As the testing progressed, the Committee realized that the level of the student was not important although their experiences using a catalog might have improved some scores because graduate students potentially have used a library catalog more than an undergraduate student.

Since the testing was conducted, a new version of the interface was released. This version has a feature that is similar to a search engine. It provides for a basic box to search for any words in the catalog regardless of the field. Several libraries have adapted this box as their quick catalog link. The ability to navigate this box format will prevent several of the problems encountered by many users. The addition of this function remains to be tested early in 2008.

While most catalog systems aspire to provide precise searching to find specific works, Internet search engines use technology to cast a very broad net across many different types of literature to find information about a subject. The search engines provide choices that could meet the needs of most undergraduates. Unless the student’s assignment requires information that is not readily available, it is possible to complete many assignments without venturing into the library. In addition, the sources might be biased, inaccurate, out-of-date, and without authority as many students are unable to evaluate what they retrieve.
Libraries must capitalize on new technology to provide the search structure that most people expect. Unlike systems of the past, library catalogs should not revolve around learning how to use a system. The system should be able to interpret a search and aid the customer toward finding the needed information.

For libraries that are unable to invest in state-of-the-art technology, many catalog systems provide some flexibility in creating an interface that is easier to use and one that does not require instruction to learn how to use it. The testing that is ongoing at the University of Texas at Dallas Libraries suggests that although the new interfaces might provide a good way to retrieve information, librarians need to evaluate their systems more now than in the past. If new systems retain the jargon and require further instruction, they will not provide what most users want. Rather than having one system to look up items owned by the library or titles licensed, students want a universal system where the retrieval of books and articles are equal. Until our systems provide that flexibility, a search engine will continue to be the system of choice to begin any search for information. Library customers are not always willing to work with systems that are not efficient and effective at finding what they need quickly and without instruction.

References


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General comments: Suggest reviewing headings & sub-heading and bolding and numbering to make it easier to read the article.

It would be interesting during the presentation to hear examples from the students and how this gave the librarians reasons to make the changes.

The sample was very small and the presentation might benefit from the third round of testing planned for early 2008.