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Do Patron Expectations Correlate with OPAC User Attrition?

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Abstract

The Online Public Access Computer (OPAC), a computerized library catalog that can be searched online, is a fixture in almost every modern library. OPACs are at the heart of how libraries function and serve patrons, enabling users to gain greater access to materials and information. Many current OPACs in use today are difficult to use and are based on outdated theories of information storage and retrieval. Unfortunately, it is common for patrons, and even professional librarians, to confess that they have given up on using OPACs and instead prefer to search for information using popular websites like Google and Amazon. This study seeks to identify whether there is a correlation between specific patron expectations and patrons' decisions to use non-OPAC strategies to locate library materials. Knowing what expectations are most critical to user satisfaction will help OPAC developers better prioritize software development efforts and stem user attrition.

Introduction

From March to May of 2003, the popular “free range librarian” blogger, Karen Schneider, wrote a three-part series of articles entitled, “How OPACs Suck” for ALA Techsource Online. In Part One she criticizes the common lack of relevance ranking in most popular Online Public Access Computers (OPACs). Instead of using an algorithm to determine which item records best match the user’s search terms, some OPACs prioritize the most recently added records with keyword matches. For example, in one catalog that Schneider searched, the first result for her search term “million” was the library item “Hog heaven: the story of the Harley-Davidson empire,” instead of the more probable, “Million man march” or, “Million dollar prospecting techniques.”

In Part Two, Schneider creates an extensive wish list for 18 features that she feels should be present in OPACs that are often not, including: spell check, recognizing similar word forms (such as the plural and singular form of a word), duplicate detection, and ability to sort search results other than by date. Finally, in Part 3, she proposes full text indexing, centralizing records, and decentralizing the Integrated Library Systems that are used to contain local OPAC records systems -- suggestions which would dramatically change the way most existing OPACs work.

Schneider is hardly the first librarian to recognize that library OPACs fail to meet user needs and expectations and that they are badly in need of an overhaul. Readers enthusiastically responded to her article with dozens of additional suggestions. This researcher also noted many OPAC problems. For

instance, patrons from her workplace's library system are confused when the OPAC simply deletes the user's search term when it doesn't find any search matches, leading the user to believe either that the computer is broken or that the search term was lost and needs to be typed in a second time. Feeling frustrated with OPACs is so common that librarians in online forums often accuse one another of "jumping on the OPACs suck bandwagon." Sadly, although a few of Karen Schneider's suggestions have been employed by OPAC vendors since 2003, most have not. When thinking about OPAC reform, the task can seem overwhelming. Which idea or enhancement should librarians most advocate? Which problem is the worst problem? How can software developers know what to focus their improvement efforts? What direction should OPACs go in the future?

In order to answer these questions, this researcher would like to discover what features of current OPAC design are the most likely to make patrons turn to another source altogether for their search needs. It is the researcher's opinion that these "deal-breakers" would be the features most urgently in need of change. When and why do patrons typically turn to alternate sources to find library resources -- for instance, using Amazon to find the correct title, asking a librarian to do the search for them, choosing to wander the stacks in hopes of just seeing the correct item, or giving up on in-house library resources and searching Google instead?

Research question

This study seeks to identify what negative features of OPAC design most discourage patrons. Is there a positive correlation between specific patron

expectations regarding OPAC searching and the decision to use non-OPAC search strategies to locate library materials?

Literature review

In Jeng G.'s (2005) literature review of the techniques that library researchers use to analyze OPACs entitled, "What is usability in the context of the digital library and how can it be measured?" Jeng points out that there is no one single agreed upon way to "evaluate usability." Instead, she lists many different methods that libraries use to collect data about their systems, both quantitative and qualitative, including: "formal usability testing; usability inspection; card sort; category membership expectation; focus groups; questionnaires; think-aloud; analysis of site usage logs; cognitive walkthrough; heuristic evaluation; claims analysis; concept-based analysis of surface and structural misfits (CASSM) and paper prototyping" (np).

Literature about OPAC use generally falls into one of two camps: books and articles written from a systems approach (generally quantitative), or materials written with a user approach in mind (typically, but not always, qualitative). In Jeng's list, the research methods of formal usability testing, usability inspection, card sort, analysis of site usage logs, heuristic evaluation, and CASSM lend themselves to the systems approach. The systems approach tends to identify specific problems with software design and to prescribe very specific enhancements for that software. Focus groups, questionnaires and think-aloud, meanwhile, are more characteristic of methods that favor a user-centered approach.

Most OPAC analysis is preformed as a usability test and is done from a systems approach. There are dozens of case studies published each year by individual libraries about their efforts to improve database and website user interfaces. These case studies are systems focused because they typically examine a specific tool and evaluate it according to a set of usability standards. For two examples of well-written articles in this genre see Chisman Diller and Walbrige (1999) and Manzari, L. & Trinidad-Christensen, J. (2006). In addition, usability guru Jakob Nielson, WebJunction, and the ALA provide a good starting point for those who wish to research more about how this type of usability testing in libraries is preformed (Balas, 2005, p.38-9). The authoritative source on usability testing, however, in both library and non-library environments, is *Research-based web design & usability guidelines* published by the General Services Administration (2006).

A criticism of systems-centered research is that it can lead researchers to become too focused on the architecture of library tools and does not shed light on the deeper reasons behind the user's behavior and preferences. Additionally, the above mentioned studies are typically location specific and are not aimed at uncovering larger trends. The many tools-based studies done by libraries may provide useful for this researcher, however, as a starting point for this proposal. A document analysis of systems-based literature on OPACs could reveal a pattern of usability concerns that are repeated throughout the articles. Identifying this pattern would allow the researcher to begin with a firm foundation, referencing work that has already been done. Although this proposed study is primarily

intended as a qualitative correlation study, which typically falls under the domain of systems analysis, it will also draw heavily upon studies that come from a user approach – ideally, combining the best features of systems research with work on user expectations and the individual search process.

Unlike systems-based research, user-based library research tends to look almost exclusively at the emotions and preferences of the patron and usually does not consider the underlying design of the search tool. Carol Khulthau's (1999) works about the Individual Search Process (ISP) are a well-known example of user-centered research. Her studies provide a useful lens for focusing on search factors -- such as the feelings, thoughts and actions of the user – that are generated internally inside a patron rather than externally from computer equipment. In Kuhlthatu's model of the ISP, patrons are most vulnerable to quitting their searches altogether in the Initiation and Exploration phase of searching (See Figure 1). Knowing this allows librarians to pay extra attention to patrons in those stages of the search process. It may also be useful to keep this information in mind when identifying equipment factors that

encourage patrons to stop using OPACs.

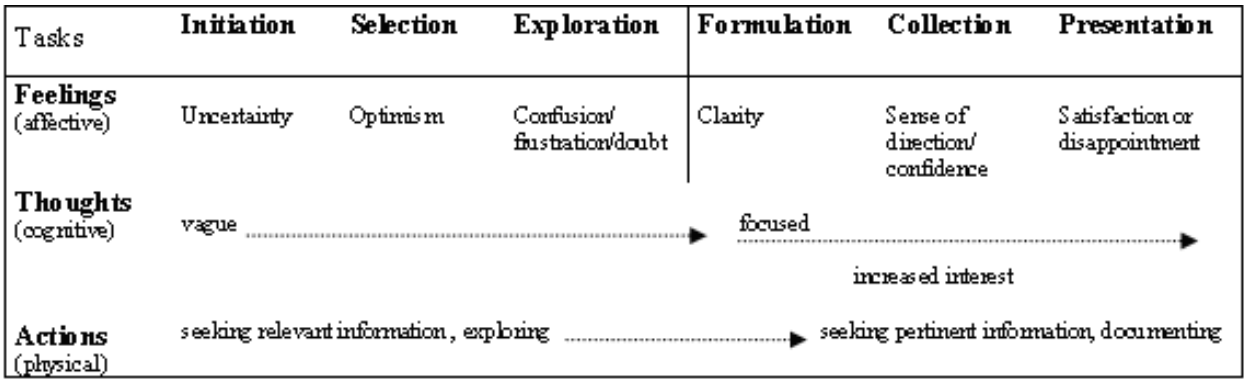

Figure 1: Kuhlthau's model of the ISP

Several more recently published studies examine OPACs by looking at patron expectations instead of at system failures. From their literature review of articles on patron expectation, Bawden, D. and Vilar, P. (2006) conclude that modern users expect:

Accessible – everything immediately available

Immediate gratification – speed of response

Followability of data – seamless

Ease of use – single interface

Multiple formats – text, images, sound (p.346)

Bawden and Vilar then argue that it may be more efficient for libraries to work on reducing expectation rather than on improving services. They note that in many cases the patron demands are literally impossible to meet, either because patrons fundamentally don't understand how libraries work or because libraries are never going to have the budget to purchase the kind of searching power that commercial entities like Google can. They make their case by citing studies like Michael Bennett's (2007) article, "OPAC design enhancement and their effects on circulation and resource sharing within the library consortium environment, " that show no significant improvement in patron borrowing even after improvements have been made to user interfaces with computer equipment. This argument does not take into account, however, that circulation statistics do not necessarily reflect user satisfaction. Previous to enhancements, many patrons checking out items may have been settling for something other than what they were looking for, or they may have resorted to using non-OPAC strategies to locate materials for checkout.

In the quarterly journal, *International Cataloging and Bibliographic Control* (ICBC), published by the International Federation of Library Associations (IFLA), John D. Byrum (2006) recommends that libraries not take a fatalistic view of OPAC development and instead that they proactively work to improve functionality both through enriching their data and through adopting next generation OPAC features and softwares. Byrum strengthens his argument by pointing out that in light of rapidly increasing alternative sources of information, the last thing libraries should be doing is accepting the status quo.

I believe there is a gap in literature between system and user approaches to OPAC search evaluation. Neither perspective takes the user's full searching experience with the OPAC itself into account. Work on patron expectation, although it succeeds in telling us what patrons would like, results in a list of desires that are unhelpfully broad. Additionally, expectation studies appear to indicate that OPAC improvement is unmerited because success is measured by the single indicator of circulation statistics. As Byrum writes, libraries should provide superior service regardless of how much or how little it affects their bottom line. Therefore, it is my intent to demonstrate a correlation between specific failed expectations and the patron's use of non-OPAC strategies so that OPAC developers can better focus their improvement efforts.

Methodology

10-15 patrons will be recruited from a nearby library system. Each patron will be assigned the same search task and asked to execute the task in a library. The patrons will not work in a group atmosphere, and will not be directed to use the OPAC or given instructions about how to use the OPAC. Searchers will be told that there is no "right" or "wrong" way to perform the search and will be assured that the researcher is independent of the library system and will not be personally hurt feelings by any criticism that the searcher my wish to express. Each searcher will be accompanied by the researcher during the search process. The researcher will use the verbal protocol method to ask patrons about the ongoing decision making process as it occurs. Sessions may be videotaped for future reference. In addition, a short intake and exit interview will be preformed

with each participant. Verbal protocol methodology will be based on T. Guha and V. Saraf's (2005) article, "OPAC Usability: assessment through verbal protocol." Intake and exit interviews will draw on D. Kelly and X. Fu's (2007) paper, "Eliciting better information need descriptions from users of information search systems."

Data analysis

Results will be analyzed using a combination of the analytic-inductive process and the Person's R correlation calculation. The analytic-inductive process will be used to locate and class together commonly mentioned problems. For the Person's R calculation, the researcher intends to collaborate with an experienced student of statistical methodology from either Emporia State University's or Portland State University's graduate program.

Population and setting

10-15 patrons will be recruited from Multnomah, Clackamas or Washington county public libraries (whichever library system will be most agreeable to my doing a study with their patrons will be selected). The study will be preformed in the library. Participants will be selected, in so far as it is possible, to represent a wide range of demographics, that is, of various ages, genders and racial and socio-economic backgrounds.

Role of the researcher & institutional review board

The researcher plans to fill out a human subjects form in order to perform participant observation. The researcher also intends to abide by the highest standard of ethics possible, keeping in mind at all times issues of trust, attempts

at neutrality, recognition of subjectivity, full disclosure for research participants, and professional boundaries. In addition, good project management skills will be necessary in order to schedule and execute the data collection sessions in a professional and effective manner. After performing the research, the results will be published and shared with the library system chosen for study.

Time schedule & budget

Timeline = 1 year

1. Surveying the literature, 1 month
2. Composing interview questions, 1 month
3. Seeking permission & scheduling observations, 2 months
4. Observation sessions with 10-15 people, 2 months
5. Analyzing the data, 2 months
6. Writing up research, 2 months
7. Editing and polishing, 2 months

Budget needs will be minimal, but may include refreshments for volunteers, video tapes, and the cost of ink and paper. The researcher will be able to cover most costs herself and will be pursuing all research in addition to her regularly scheduled ½ time job.

Limitations

There are a number of possible challenges and limitations. The need to build report with administrators of a local public library system may result in working work with multiple layers of management in order to gain approval for the research project, which could bog the project down indefinitely or prevent it from

even getting off the ground. Other possible limitations are that the volunteers may naturally be inclined to be expert users since they will be contacted through the library and since they are enthusiastic enough to volunteer. Although every effort will be made to include a broad range of users, it will be impossible to have a truly representative sample using volunteers, and the study will not be able to recognize the diverse needs and expectations of all user groups (for example, addressing access issues for those with disabilities as mentioned by Stewart, R., Narendra, V., & Schmetzke, A. (2005), or cultural and linguistic concerns like those written about by Bjorner, S. (2008)). In addition, it will also not be within the scope of this project to analyze what may causes differing expectations from user to user or how to accommodate those individual differences.

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