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Library Systems: Transaction Log Fever

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Analyzing patron searches can reveal solutions to increase search success

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Analyzing Patron Searches

What I call "transaction log fever." Analyzing what the users type into the system and watch for signs of frustration—you don't need an advanced degree in psychology to know when a library user is not interfacing well with your system. A third technique is to study the usage indirectly by analyzing what the users type into the computer. This can be surprisingly revealing and absorbing and can result in what I call "transaction log fever." 

Analyzing Patron Searches

Since 1990, I have been managing systems provided by Innovative Interfaces. These online catalogs provide you with data on every search typed into the system within the past 10 days. The patron search analysis mechanism is a delight to work with. Everything about a search can be analyzed. Search details can be broken down by time of day, by the terminal that the searches were performed on, and by whether the search was "successful" or not. The only thing we don't know is the identity of the searcher. People using an OPAC in that system don't have to identify themselves—they just walk up and use the machines.

There is much discussion about whether a successful search (one where the system responded with results) was actually successful in retrieving what the patron wanted. However, the meaning of zero-hit searches is somewhat less controversial. When the computer responds with some sort of error message, i.e., "THIS SUBJECT HAS NOTHING TO DO WITH THAT TOPIC. CHECK YOUR SPELLING," there's no question that the search was unsuccessful.

The Adelphi Study

Studying unsuccessful searches goes beyond the normal fascination of finding out what users were wrong. It allows us to see where the human-computer interface is breaking down so you can make it better.

One specific example concerns a study that was conducted at Adelphi University in 1994. Questionnaires were given to patrons at the OPAC terminals. They were asked to write down what they were looking for, how much of it they found in the online catalog, and how much of that was actually found on the shelves. We were able to take the study one step further and verify exactly what they typed into the computer.

For the 20 days of the study, I copied the search data into a series of text files that I merged into a giant file that was sorted by terminal and by date. By importing it into word processing and searching by the topics on the questionnaires, I was able to identify 90 percent of the searches.

For the most part, people searched the way they said they did. Lots of them would try a subject or title search and then run it again as a keyword search. Some of them would search for a title, and, not finding it, declare it to be a book that the library didn't own. In many of those cases, they were searching for article titles (which don't get indexed in an online catalog). If they had searched for the name of the journal, they would have found it.

When the study was over, I ran the list of searches through a spell checker. This helped me produce a list of the most misspelled words in patron searching. We mounted it in the library information screen of the online catalog. The most misspelled words that we found are architecture, civilization, criticism, economic, encyclopedia, history, medieval, Nietzsche, occasional, pregnancy, psychology, quarterly, renaissance, and steroids.

Looking over the list I realized that most of the university's users grew up after the 1950s, a time when all children knew how to spell "encyclopaedia" thanks to a singing cricket. This list contains words that lend themselves to typos mixed in with words that most people just don't know how to spell.

Subject Headings

A more powerful reaction to searching problems comes when the librarians adjust patrons from their own subject headings to the "real" ones.

A classic example is the American Civil War. The average user would search this under the subject heading "Civil War." WRONG! The "correct" subject heading is "United States History—Civil War—1861-1865." However, to solve this, program the authority record for the correct heading to watch for an incorrect one. When a user asks for a commonly requested yet incorrect heading, the computer can respond by displaying the "right" heading and then making an automatic link to titles with that subject.

I Could Write a Book

There is so much to say about transaction log analysis that I could write a book about it. However, I don't have to because Thomas P. Peters already has. He is an unofficial leader of the librarians from around the country who do research in transaction log analysis. He has given considerable thought to all of the issues that I have covered and much more. The book is The Online Catalog: A Critical Examination of Public Use, published by MacFarland in 1991.

To return to the initial question—Is someone watching your searches? Sometimes, yes. But be assured, it is for the purpose of helping to make a better system for everyone.

Data Trek Introduces WorldPAC

Library OPAC Web Access Tool

Data Trek, Inc. has announced the introduction of WorldPAC, a World Wide Web browsing tool that enables library professionals to place their online public access catalogs on the Internet. The company plans to release this new product in the third quarter of this year. WorldPAC will enable the public to access the OPAC in that system don't have to identify themselves—they just walk up and use the machines.

The machines.

Meanwhile, the most constant number I've ever seen in years of looking at transaction logs is the 45 percent failure rate for subject searches. Studying user search patterns can help systems librarians to provide the kinds of links that will get the

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