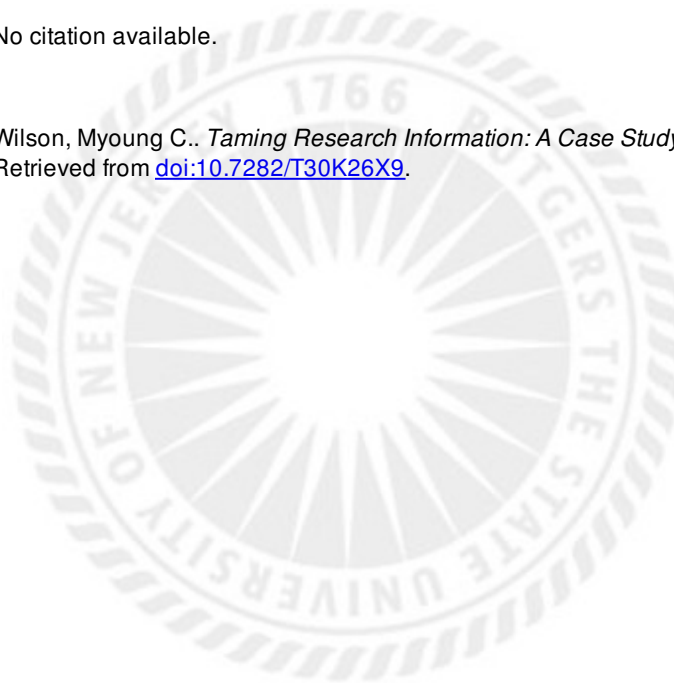


Taming Research Information: A Case Study of a U.S. Academic Library

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Taming Research Information: A Case Study of a U.S. Academic Library

ABSTRACT

If training students for an unknown future is a hallmark of today's education, then providing the skills for coping with future demands is an essential feature of the educational experience. Nowhere is this more evident than in academic libraries where the use and application of information technology have dramatically increased. While the new technology expands access to information, it also establishes some serious barriers for many students. This paper describes a pilot project, an Electronic Information Clinic established at the Alexander Library, Rutgers-the State University in New Brunswick, NJ, USA. The Clinic was designed to provide on-site counseling in the use of electronic resources and to help students contextualize electronic information sources in the context of overall library resources. The findings of this project will identify the electronic databases used by different user groups as well as the levels of user understanding in the use of these electronic databases. Projects like the Electronic Information Clinic can aid librarians to reconceptualize service configurations in an emerging electronic library environment.

INTRODUCTION AND BACKGROUND

Information technology has brought dramatic changes not only in how library materials are acquired, organized and accessed but also in library materials themselves. No longer are libraries limited to the single medium of print materials. Among the various media now available nothing has impacted users more directly than computers and computerized information sources.

While computers have changed (and enhanced) much about the ways that students conduct research, studies have also shown that library and technology anxieties are seriously impeding students' ability to pursue their research assignments. Mellon found that even in a relatively small academic library students feel intimidated by its sheer physical size.(1) Kuhlthau, as well, discovered that feelings of anxiety, doubt and uncertainty are common phenomena in information seeking processes for many students.(2)

The increasing number and diversity of computerized information sources further exacerbate students' feelings of intimidation and anxiety in large academic libraries. Further, there is a growing body of evidence that the new information technology has established novel barriers for students. Borgman, for instance, reported that one third of the undergraduate students in her study were unable to achieve a minimal level of competency and that few of the student participants could apply Boolean searching.(3) In other studies of human-computer interaction, it has been found that there is a great range of differences in skills and ability that individuals bring to computing systems. Flotsos found that among college students there is a unique anxiety associated with CD-ROM technology especially on the part of students who lack self-confidence.(4)

In recent years, students' attempts to use the plethora of computerized information resources are often likened to drinking >From a fire hydrant. Too much information exists; on-site or remote electronic databases abound coupled with printed versions of similar information sources. With too little capability for absorption the results are confusion, frustration, a negative learning experience and a poor, final research product.

Attempts to teach students about the availability of, and the differences among, these diverse information sources have been part of numerous library instruction programs. However, library training is largely structured as scheduled classroom instruction; during these learning sessions students are taught the staggering number of information sources that have potential use for their research topics. One Rutgers faculty member describes the ineffectiveness of such instruction as follows, "Unfortunately, I found that my students were not in a position to extract the relevant bits of information that emerged during the general introduction; instead, they just waited for the sessions to end so they could go find someone who would help them with their specific questions."(5)

In the past, complicated paper-based research tools, such as the Citation Indexes, were explained by audio-visual facilities located adjacent to them.(6). These points of use machine(or printed) aids helped students to understand and access these particularly complex research tools. Traditionally, reference desks offered research assistance to paper-based reference tools that only required students' reading ability. By contrast, student's ability to deal with electronic resources appear to be more stratified than their reading abilities. As Christine Borgman insists, not all information retrievers are created equal. The information retrieval literacy level among students varies greatly depending on their prior experience, skills and technical aptitudes.(7)

In addition, the seemingly simple task of choosing the most appropriate information source requires that students have prior knowledge of both print and electronic information sources. Nash and Wilson found that many students using the CD-ROM databases are unable to critically evaluate their own search results as to their appropriateness and relevance to their research assignments.(8)

Because of the number and variety of databases on different workstations with a varying level of user-friendly interfaces, and because of student needs to connect from electronic to paper resources, it was thought that specially trained "consultants on site" would better help students to maximize all available information sources.

THE ELECTRONIC INFORMATION CLINIC AT THE ALEXANDER LIBRARY

The computerized information sources, including online catalogs, stand-alone CD-ROM stations of bibliographic/ numeric/full-text databases and remotely available databases are complex, extensive and ever changing. Without professional intervention and counseling, students can easily be drowned in the new technologically driven information-explosive

environment or starve from a misguided retrieval effort that unearths too little information.

The Alexander Library is the oldest and the busiest of all 18 Rutgers libraries located throughout the State of New Jersey, housing the main research collection for the social sciences and humanities. Under a University's Teaching Excellence Center grant, funding was requested to establish an Electronic Information Clinic in the library's newly renovated Automated Reference Center. With this new addition and renovation, a decision was made to introduce three tiered reference services; an Information Desk staffed by students and staff members, a Reference Desk staffed by professional librarians, and advanced research consultation through appointments with subject specialists.

What was still lacking was on site consultation in how to use almost 30+ workstations (some networked with various databases and some stand-alone workstations with single or multiple databases) located in an enclosed room near the Reference Desk.

Funding was successfully obtained to hire and train three graduate electronic consultants. The Automated Reference Center then became the Electronic Information Clinic during the hours when the graduate electronic consultants were on duty. The Clinic was established on the assumption that there exists a very wide range of student competence regarding the various systems available to them and, concomitantly, a need to counsel them at an individual level. The Clinic had two specific goals:

- (1) to counsel students about the range of electronic databases available to them and to teach them which databases are most appropriate and how to search the selected database.
- (2) to teach students to evaluate research information. A proposal was also made to invite selected faculty members to hold their office hours in the library. The objective was for faculty to participate in the counseling process for students who misinterpret their research assignments and who lack the ability to collate the information that has been amassed.

DESCRIPTION AND ANALYSIS OF THE CLINIC ACTIVITIES

Three graduate electronic consultants (two MLS candidates and one Ph.D candidate in Urban Planning) were trained a total of four 2-hour sessions. They were to provide guidance regarding the variety of information sources that are available at the Alexander Library and through the RU Campus Wide Information network, called Info. The Consultants were on duty during designated hours in the Automated Reference Center, not at the Reference Desk. The busiest reference hours for the previous year were selected as the Clinic hours. These were posted throughout the library. The Clinic offered it's services by appointment and by walk-in consultation. The consultants on duty were identified by wearing a "Consultant" tag. During the fall semester, 1994, the project coordinator also encouraged selected faculty members who had library-based research assignments to hold their office hours in the library.

While the Clinic was in operation, assistance in the use of almost 20 different databases was requested a total of 2499 times. Analyses of these cases of assistance reveal some of the electronic resource use patterns of Rutgers students. As targeted, the two largest groups who sought assistance were undergraduates (54.5 %) and graduate students (40.6 %). February, March and November were the three busiest months. Chart 1 illustrates the number of users by status and the databases for which assistance was requested.

Chart 2 illustrates the composition of assistance by databases by all users. It is interesting to note that the instances of assistance in downloading, choice of databases and interpretation of retrieved citations and directions to physical locations occur in rather high numbers.

Two faculty members held office hours in the library in the spring semester, 1994-- one from the English Department held two sessions during which the English selector was also available for consultation. The Political Science faculty member held three sessions in one of which he requested a general session with the political science selector. If these office hours are any indication, however, students were not serious in seeking consultation with faculty members. This aspect of the project requires more coordination than anticipated and has thus been postponed to another time.

OBSERVATIONS OF THE CLINIC ACTIVITIES

What did not happen during the time the Clinic was in operation was a significant indication of how academic librarians should design their services in the future. Despite announcements and posters, not a single student made an advance appointment for counseling/tutoring in the Clinic. This suggests that assistance at the point of use is far more critical than any prearranged classroom instruction.

Evaluation of the Clinic's activities was sought in two ways; through observation of the consultants and through random exit interviews of those students who used the Automated Reference Center, not necessarily the ones who sought assistance.

It was thought that consultant observations would supply information about students' level of knowledge and their skill in using various electronic databases. For this reason, they were required to keep a detailed diary of their work. The consultants were also asked to submit a written report of their experiences. Following are salient features of their observations.

- . Most students are not prepared to construct search statements. One consultant noted that "even the best database is worthless if the user doesn't understand how to search it."

- . There indeed exists a very wide range of student competence regarding databases, from a novice to a very sophisticated user. Most commonly, if students know something about

online catalogs, they are eager to learn more. Another consultant observed, "many students displayed less knowledge and more enthusiasm."

.The satisfaction of the student directly correlates to the number of appropriate citations that were found.

.Many students are unsure of their choice of research topic.

.Students lack understanding in the universality of databases and the locality of the physical holdings of items that were found.

These observations validate many previous studies of student use of electronic databases. It also underscores Kuhlthau's finding that students need as much counseling in intellectual access to library resources as well as in how to physically access these materials.(9)

Through 91 exit interviews, we learned, inter alia, that almost half of the respondents (48% of undergraduates and 42% of graduate students) preferred in-person instruction in the use of databases. Surprisingly, about 38% of student respondents preferred online instruction. This contrasts sharply with consultant reports that students do not digest online instruction. Only 14% of undergraduates and 19% of graduate respondents wanted this kind of training as part of their course work.

CONCLUSION

Results from the Electronic Information Clinic have confirmed previous studies that students are not adequately trained to fully comprehend the variety of electronic databases available to them. They also lack an understanding of the different structures of these databases, thereby requiring a different set of skills in order to construct effective search strategies.

For many students electronic libraries provide enhanced access to information resources but they clearly create new barriers. For untrained students using an electronic library is like doing jigsaw puzzles without edges (10). The Electronic Information Clinic was an effort to offer individualized boundaries for students as an aid to solving their particular puzzles. The Clinic also allowed librarians to experience the value of on-site counseling and to contemplate an alternate structure to the existing service configuration.

Academic libraries are experiencing a fundamental transformation from paper to electronic resources that will change the ground rules of how to deliver services. In the business community, these are conceptualized as breakthrough services.(11) In the academic world libraries are fertile grounds for reformulating such "breakthrough services" in order to help students and faculty to frame their research information needs.

References

1. Mellon, Constance A. 1986. "Library Anxiety: A Grounded Theory and Its Development," *College and Research Libraries*, Vol.47, March. pp. 160-165.
 2. Kuhlthau, Carol Collier. 1993. *Seeking Meaning: A Process Approach to Library and Information Services*. Norwood, NJ: Ablex Pub.Co., p.170.
 3. Borgman, Christine. 1984. "Psychological Research in Human Computer Interaction" in *Annual Review of Information Science And Technology* Edited by Martha E. Williams. Vol. 19, 1984 p.48
 4. Fliotsos, Anne. 1992. "Anxiety Layering: The Effects of Library and Computer Anxiety on CD-ROM Use," *The Southeastern Librarian*, Vol.42, Summer. pp.47-49.
 5. Miller, Richard. 1994. Letter to author. 10 June.
 6. Chung, Myoung et. al. *Report of the Development of Six Point-of-Use Library Instructional Programs*. ED 202-466-1986
 7. Borgman, Christine. 1989. "All Users of Information Retrieval Systems Are Not Created Equal: An Exploration into Individual Differences," *Information Processing and Management*, V.25, No.3. pp. 237-251.
 8. Nash, Stan and Wilson, Myoung. 1991. "Teaching Students to Find the Right Citations," *RSR, Reference Services Review*, Vol.19, No.1. p.91.
 9. Kuhlthau, Carol Collier. 1993. *Seeking Meaning*. p.187.
 10. A presentation by David Carr at a Rutgers Forum. "Envisioning Information Literacy" May 20, 1994.
 11. Heskett, James L., Sasser Jr., W. Earl, James, Hart, Christopher W.L. 1990. *Service Breakthroughs: Changing Rules of the Game*. New York: Free Press.
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