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## ABSTRACT

In the academic year 1987-1988, the administration at Fort Hays University announced its commitment to emphasizing computer literacy for all students. In response to the new administrative policies, the departments of history and earth science required their students to conduct an online search in preparation for a major research paper as part of an undergraduate or a graduate seminar. The Forsyth Library worked cooperatively with the departments to orient and train the students and to coordinate the efforts of professors and librarians. This report concisely describes the process of arranging to have DIALOG available to students on a reduced-fee basis, the hardware and software utilized, and other aspects of the pilot online searching project and subsequent programs. Observations about the effectiveness of these programs, such as students' willingness to pay for searches and assignments being planned well before the end of the semester, are evaluated. Related impacts and implications--e.g., the substantial increases in demand for library services, librarians' time, and interlibrary loans--are assessed, and general trends in library automation and cooperative educational programs in Kansas are noted. (SD)

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ONLINE DATABASE SEARCHES: PUTTING THE STUDENT IN CONTROL

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by

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December 1989

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TO THE EDUCATIONAL RESOURCES

## Pilot Project 1987-88

In the academic year 1987-88 the administration at Fort Hays State University, Hays, Kansas announced the institution's commitment to emphasize computer literacy for all students. Academic departments were asked to develop strategies to integrate computer usage into the curriculum, especially through the use of computer assisted instruction (CAI). This mandate posed no problems for some departments, such as mathematics and political science, which had already implemented CAI systems. The department of history, in contrast, found that available CAI programs, especially in the form of tutorials, were inappropriate for the department's needs. Gaming, likewise, was thought to be too limited to fulfill the CAI emphasis.

At this juncture, the department of history and also the department of earth sciences at Fort Hays State, in cooperation with the staff of Forsyth Library, decided to introduce a program of training in database bibliographical searching for students in advanced undergraduate and graduate seminars.

These seminars had, for years, required the completion of a major research paper. The database search was added as a requirement for the conduct of the bibliographical search in preparation for the research paper.

With the multiplication of hundreds of electronic databases, data searches have become the norm rather than the exception for serious researchers. In previous practice, such data searches generally had been executed by professional librarians for library patrons. This procedure presented obvious problems. The use of professional librarians to conduct data searches is both time-consuming, expensive and often yields some inappropriate citations due to ambiguities that can result in the interview process. These factors combine to make it almost impossible for the staff of small and medium sized libraries, such as Forsyth Library, to offer this service on an open basis. If it is offered selectively, difficulties arise with faculty or students who are not able to obtain service. Since few libraries employ staff to do full-time searching, the searches must be conducted at off-hours, and at the convenience of the library staff. This situation invariably causes delays, which are especially inconvenient for seminar students because they frequently need to allow time to request some resources through interlibrary loan.

Methodological problems must also be overcome. The person conducting the search should have some idea of the direction in which a search is to go. A student preparing a paper on the French Revolution may ask for a search on the subject of "Reign of Terror." A search based only on this name almost certainly will not yield all appropriate

references. There is no reason why the professional librarian conducting the search would try, for example, "Jacobins", "Robespierre", "sans culottes", "France, 1792-95", or numerous other promising search terms. There is no substitution for actually being at the terminal to evaluate the effectiveness of the search in progress.

It was in response to these problems that the decision was made to train and permit seminar participants to conduct data searches for themselves. The program was made possible by the library staff willingness to conduct a pilot program in cooperation with the professors in history and earth sciences departments, and the university's membership in the DIALOG Information Retrieval Service. DIALOG, which has been online since 1972, encompasses over 500 databases, containing more than 152 million records. DIALOG accesses a number of databases, such as Historical Abstracts and American History, which are of specific use to historians, and GeoRef which is the major reference source for the earth sciences.

Dialog Information Services, Inc., the parent company, eager to build usage, offers a special classroom instruction program which is specifically tailored for the type of project here under discussion. Academic institutions which subscribe to DIALOG are able to secure access to databases at a special rate of \$15/per connect hour for instructional use. This special rate made student generated data searches a practical and inexpensive reality. The institution received 10 passwords for \$25. Additional costs at the time of the pilot project involved telecommunication costs. The computer modem contacted the database through "nodes", which in Kansas are located in Wichita, Topeka and Kansas City. Access to a node required a long-distance telephone call from Hays. In addition, the program required a personal computer with a modem, as well as communications software available from DIALOG.

To expedite this experimental program, the administration of Forsyth Library agreed to pay telecommunication costs, and to arrange the classroom instruction program through DIALOG. In return, the participating academic departments agreed to insure that students used the system in the evening and on weekends when telephone rates were lower. The department of history and the department of earth science made one hour of search time available to each seminar student at the classroom instruction rate. The department paid \$5 and required students to pay the additional \$10 for this hour. It was decided to make students pay something in order to focus their minds, and insure that they would use their time effectively and efficiently. These guidelines worked tolerably well; no student in either seminar required more than the hour of discounted search time to conduct a data

search.

All students in the project were required to conduct a data search in the compilation of their bibliographies, and were graded on the quality of their search. The data from each student search was downloaded from the PC to a floppy disk furnished by the library, and this provided a record of the student search, its organization, quality and, ultimately, the use made of the citations identified.

In preparation for the student search, three hours of orientation time were incorporated into the syllabi of the courses. Two orientation sessions were conducted by library personnel for students and a preliminary orientation session was conducted for the participating faculty. The library subsequently provided an orientation session for the entire history department, and the department allocated funds from the departmental budget to provide each faculty member with one free hour of computer time for a data search.) Professional librarians were generous in arranging their schedules to be available at set times in the evenings and weekends in order to assist students.

### Observations

Most students took eagerly to the concept of the data search, and it was possible to give full credit for the search to all but one of the students. There were few complaints by students at the need to pay part of the cost of the search, especially as students realized that they were receiving considerable savings over the usual cost of a search. The requirement that students pay part of the cost of the search was instrumental in producing better and more calculated searches.

The provision of orientation sessions early in the semester encouraged students to focus rather early on their topics, and provided stronger faculty oversight of bibliographies than in the past. Faculty had easy access to the university library online catalog, which made it easy to insure that students were making effective use of holdings which were in the collection. The utilization of an electronic data search made the participating faculty more sensitive to the need to discuss paper data bases (or indices, as we used to call them) with students, and to emphasize that these also had to be consulted. Thus a database search alone may not be comprehensive. The research process became as critical in the learning and teaching process as the end product.

The experiment brought up important consideration for the university library staff. To insure the success of the program required that staff members were required to devote unusual amounts of their time and energy to the effort. Such sacrifices cannot be required nor expected indefinitely. The burden of orientation and guidance must therefore fall more fully upon the faculty of the



departments which wish to use the program. This factor will require the training of appropriate faculty. In addition, students will have need to conduct their searches without the luxury of library personnel close at hand to assist them. This may create a better learning experience for students, but it could create emergency situations and unexpected demands on staff time. Forsyth Library does not have a strong research collection and lacks specialized holdings in most areas which were the topics of the experimental seminars. In normal circumstances, these inadequacies mean that students have to utilize interlibrary loan. The data searches for the experimental seminars generated a greater number of bibliographical needs than normal, and concentrated these needs at the beginning of the semester. This put a severe strain on the already understaffed ILL division of the library. By mid-semester, restrictions had to be placed upon ILL usage by all but graduating seniors, selected graduate students, and faculty completing research projects.

#### Expansion of the Project 1988-89

The success of the 1987-88 pilot project generated a piquing of interest in faculty of graduate research courses and upper division undergraduate courses in other academic department, and more faculty approached Forsyth Library staff resulting in expansion of the project. The format of training faculty in a department prior to working with a specific class has proven to be critical to success of the program. Faculty who become involved in utilizing online database searching must commit to integrating the process into the course, providing a syllabus specifically identifying the use of online database searching and cooperating with library reference staff by allowing 2-3 hours of class time for training.

It has been ascertained that library staff can teach the process and procedure for preparing a search strategy, but faculty must be present for content orientation. Thus, a true cooperative effort between library and departments is emerging.

In addition to the pilot project departments, the departments of biology, nursing, agriculture, economics, business administration, business education, health and human performances have established use of this service. With this expansion a classroom housing six microcomputers, three printers and six rack modems located at the computing center has been built in the library. Each microcomputer has been installed with Procomm, Wordstar, and Hands-Off Security software. A menu and batch command files allow the student to use a password and ID that will automatically log him to the appropriate DIALOG password for the account established by a department. The initial passwords and ID's are changed

each semester to insure no misuse of the service. The batch files are also designed to automatically download all searches both to the hard drive and a floppy as well as print hard copy of all searches. Faculty in the department and the library staff monitor monthly bills from DIALOG and reconcile them with the logged searches.

All training activity costs associated with teaching faculty and students how to search are paid for by the library. As in the pilot project, departments continue to assess the students all or part of the cost for individual searches so that search time is effectively and efficiently used.

### Observations

Students continue to be eager to learn and use online database searching. The requirement to pay for part or all of the search has not been a detriment, but rather has resulted in more conscientious pre-planning of the search strategies.

Faculty have observed usage of more comprehensive bibliographies and references in the final research paper, while students have expressed satisfaction in acquiring a transferable research skill. Students also have been more responsive to completing a literature search earlier in the semester as many searches yield citations that require an interlibrary loan transaction. Some students have returned in subsequent semesters or for other classes and used the service via library passwords.

Interlibrary loan service has seen an increase because of this activity, but there is an apparent decrease in the last minute frenzy of students attempting to meet deadlines because of the earlier awareness of needs resulting from the time frame necessitated by training. Library usage and circulation have increased due partly to this project. Reference staff who provide the training have fine-tuned their skills in online searching as a result of teaching others.

### Future

Plans are being finalized for Fall 1989 to provide the same opportunities in off-campus graduate courses in Special Education as are available on-campus. One of the frequent criticisms of off-campus work, voiced by both faculty and students has been inequitable library service and access resulting from the distances involved.

By providing lap top computers, training and a dial access online catalog at remote sites resources can be made available anywhere. For month Forsyth Library staff have been intensely inputting journal holdings data into the online bibliographic records so that all users on campus and off-campus will have reliable information to pair with online citations. All data should be input by

January 1990.

### Conclusion

The Forsyth Library experience confirms the warnings given by many specialists in library automation: automation increases library usage, staff workload, and costs, in return for the potential of more effective services. Despite the expense, it is doubtful that libraries or educational institutions will be able to escape the need to automate. The only secret of technology, after all, is whether or not it works. As more library patrons become aware of automated services, they can be expected to demand them. Indeed, such programs are already spreading at the grass roots. The Kansas Library Network Board has funded experimental programs incorporating student run data searches in a cross section of Kansas high schools, large and small, urban and rural. Institutions of higher learning will be serving an increased population of students already familiar with data searches, and they can be expected to want to conduct their own. Fort Hays State University and Forsyth Library are practicing today's innovation which in all likelihood will be tomorrow's norm.

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