# ONLINE DATABASES

BY CAROL TENOPIR

# Educating Future Professional Searchers: The Role of Formal Education

PROFESSIONAL online searchers learn how to search in a variety of ways. Many learn how to search by taking a one- or two-day course from an online vendor, others get tutoring from colleagues, still others are self-taught. In recent years many of you have had the opportunity to specialize in database searching. Other professional schools are incorporating online instruction into their programs as well.

Two recent surveys examined how database searching is now incorporated into the curriculum of professional schools. I surveyed the American Library Association–accredited graduate schools of library and information science, while a survey by Martha E. Williams and Chengren Hu of the University of Illinois looked at professional schools of law, medicine, and business, as well as those of library and information science.

## Searching in library schools

Some online and/or CD-ROM database instruction is now offered by virtually all of the 60 ALA-accredited graduate library schools in the United States and Canada. (Williams found 98 percent, I found 100 percent). Actually this has not changed much since the early 1980s, when a comprehensive survey found that 93 percent of the schools offered online instruction for at least some of their students.[1]

What has changed more dramatically as we close the decade is the increase in the percent of students in the schools who learn how to search and the amount of hands-on practice each receives. Much of this increase has happened in the last five years with the addition of CD-ROM workstations to every school, but online experience has increased as well.



Carol Tenopir is Associate Professor at the School of Library and Information Studies, University of Hawaii at Manoa, Honolulu

In over 80 percent of the schools three-quarters or more of the students now get hands-on exposure to online searching, with the same percentage providing CD-ROM practice. Forty percent of the schools report that *all* of their students get hands-on exposure to online searching, while 56 percent provide exposure to CD-ROM searching for all students. Some schools (34 percent) require exposure to both CD-ROM and online searching by all students, with the Canadian schools leading the way (71 percent). Just two schools responding to my survey indicated that only one to 25 percent of their students received hands-on exposure.

Another way to offer practice is to use in-house database simulation systems. Simulators mimic the command languages and features of major online systems, but they access databases that are created locally or downloaded and stored in the local computer. Almost one-half of the schools use simulators to some degree and 23 schools offer practice on a simulation system to 25 percent or more of their students. Use of all three methods of hands-on practice (online, CD-ROM, and simulators) has increased in a majority of the schools in the last five years.

Mere exposure to database searching does not guarantee someone will learn how to search, of course (not to mention how to be a good searcher). Most of us assume that the more practice a student gets, the better he or she will get. Many schools now offer unlimited (and unmonitored) access to CD-ROM databases. Online hours are still closely restricted, however, with an overall average of 4.8 hours online per student who takes online classes. Perhaps supplemented with unrestricted CD-ROM or simulator time that is enough, although neither survey addressed the issue of how much practice is enough or how to measure the quality of today's graduates when they take a job in online searching.

## Courses in database searching

Both surveys looked at whether courses were dedicated to database searching or whether searching was included as a part of other classes. Williams found that 89 percent of the library schools offer a separate course for database searching, but most also incorporate it into other classes. My results confirmed this mixture of instructional methods, with 82 percent offering at least one course that is completely dedicated to database searching and 25 percent of the schools offering more than one dedicated course. I also looked at whether or not these courses were required and found that only eight percent of the schools require a dedicated course in searching. Courses that are required tend to devote half of the course or less to database searching, integrating instruction in database searching with other topics. Several respondents commented that their schools have tried to integrate database information throughout the curriculum.

Courses that incorporate exposure to either online or CD-ROM databases (or both) include such things as subject bibliography, government documents, reference, information storage and retrieval, and library automation. Dedicated courses include beginning and advanced searching classes, as well as specialized courses such as legal databases, business databases, health sciences databases, and nonbibliographic databases.

All of the schools concentrate their instruction on bibliographic databases, but Williams found that 83 percent of the schools also offer some instruction and practice for nonbibliographic databases of one type or another. Full-text databases are most often covered in legal reference courses, numeric databases in business reference. Directory databases

are searched as well.

In addition to the traditional reference courses and the database searching courses, related courses that take database specialization one step further are now offered by many schools. Over 90 percent of the schools offer either a dedicated course in database design or incorporate it into other courses. Others offer such courses as systems design, information marketing, personal information systems, DBMS, etc.

## Which systems?

Both surveys asked what online systems and what CD-ROM services were taught and the data agree. For online instruction DIALOG is used by all of the library schools, but 90 percent use more than one online system. (The average number of systems used is six.) BRS is the second most popular system, used by over 50 percent of the schools. Other popular systems include WILSONLINE, NLM MEDLARS, ORBIT, STN, CAN/OLE, NEXIS, Dow Jones, Questel, and VU/TEXT. Schools use special educational rates available from these services to keep online budgets down, but even at $15 per hour, the schools are concerned about the high costs of offering online practice.

To search these online systems, schools use a variety of hardware and software, with most offering more than one configuration. Almost all have now converted to microcomputers for searching, but some schools still have dumb terminals around as well. IBM-PCs and compatibles are definitely the machines of choice. DIALOGLINK is the most popular software package, but many other communications packages and front-ends are in use, including Smartcom I, II, and III; Crosstalk, Procom, and Pro-Search. Most schools use more than one package.

Many schools rely on donation of databases on CD-ROM for their CD collections. In fact, CD-ROM searching in many library schools began only when the H.W. Wilson Company donated a workstation to each school. CD-ROM systems in use by many schools include WILSONDISC (demo disc, Readers' Guide, and Library Literature are popular), DIALOG ONDISC (ERIC is the most popular by far), OCLC (ERIC and Education books), SilverPlatter (LISA, ERIC, and Medline are popular), PAIS, and EBSCO Serials Directory.

Many schools plan to add CD-ROM workstations and more databases (at least sample or donated databases). CD-ROM is allowing several schools to add hands-on exposure to a variety of databases in almost every class in the curriculum. This, of course, is the major change in database searching in recent years and will continue to be a major force for change in library school instruction in the coming years.

## Law, medical, and business schools

The Williams-Hu study also surveyed a representative sample of law, medical, and business schools. They found that online searching is well established in law schools, as would be expected since both LEXIS and WESTLAW claim to be represented in virtually every law school in the United States. Eleven percent of the law schools that responded offer separate courses in online searching, while 79 percent incorporate online instruction as part of another course or courses. All have online systems available for students to learn on their own, even if not in formal courses. Some kind of online training is required in 78 percent of the law schools.

Medical schools are newer entrants in the online instruction field, but still 14 percent of those responding offer a separate course and 67 percent incorporate online into one or more courses. (Of course, those offering online instruction would be more likely to respond to such a questionnaire.) Only 31 percent of the medical schools require online instruction, but many sponsor vendor training sessions or provide access to systems for students who wish to teach themselves.

Business schools do not yet offer dedicated courses in database searching and do not often require online searching (Williams found four percent do), but they are beginning to incorporate it into their curriculum. Nineteen percent of the respondents offered it as part of other courses in the business curriculum and many are beginning to sponsor seminars or workshops. This will likely increase in the future as online vendors and database producers begin to target this lucrative area.

## How does formal instruction differ?

Database instruction is an important part of the professional school curriculum and will continue to be so. Although I did not study how the instruction differs from that offered by vendors, I can speculate on how it differs in library school curricula at least. Unlike vendor instruction, library schools offer experience in many different systems and databases. Part of the instruction in fact is in the differences and similarities among systems, databases, hardware, and software. Students are learning evaluation skills in addition to searching skills. Instruction is incorporated into a variety of classes, which offers the ability to learn about database searching in a wider context, for example in the context of reference sources, subject sources, or database design issues. This should make today's students more able to treat databases as merely one type of reference tool to be used appropriately as the work setting demands.

Does formal education make students better searchers? That is difficult to guess. Some people can perform well in an academic setting, but be poor searchers on the job. Success will also vary with the amount of hands-on practice and with the knowledge and ability of the instructor. One school told me that its database curriculum changes with each new database instructor. Vendor training is always accurate and up-to-date on the commands of a particular system, and most provide practice passwords for use after the one-day class.

A variety of instructional methods will continue to be needed, with some searchers using more than one in their professional careers. Chances are new librarians, lawyers, doctors, and business professionals will be more knowledgeable about database searching each year. As experienced searchers have learned, that knowledge may increase, rather than decrease, the desire for additional vendor training classes. With a fundamental education about databases and some skills in searching, continuing instruction will be used to keep up-to-date, to learn how to search additional systems, or as a refresher if they do not search on the job immediately after graduation.

## Reference

1. Harter, Stephen P. & Carol H. Fenichel, "Online Searching in Library Education," *Journal of Education for Librarianship*, Summer 1982, p. 3-22.

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