User Instruction Issues for Databases in the Humanities

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ABSTRACT
In order to teach humanists how to search effectively the variety of information technologies available to them, librarians should reassess traditional instruction techniques. Teaching methods must be considered in view of the special characteristics inherent in humanities disciplines, humanities databases, and the humanist's own attitudes and learning styles. This article analyzes the attitudes that humanistic students and scholars typically display toward technology, and places those attitudes and behaviors in the context of the humanist's information needs and available information formats. A discussion of concepts, topics, and skills which should be taught to humanists for effective computerized literature searching is followed by a consideration of various instructional approaches.

INTRODUCTION
Until recently, bibliographic instruction for humanities scholars and students was fairly straightforward. Beginning students were shown how to use and interpret the library catalog and the major printed index in a particular humanities discipline, such as Historical Abstracts or The Modern Language Association (MLA) International Bibliography. Humanities scholars generally knew which sources served their specialty best, having set their own patterns of research in graduate school, and rarely asked for help or brought their advanced students to a librarian for library instruction. Researchers felt they were the best ones to teach the next generation of scholars about information sources and research methods in the humanities.
Since the growth of end-user computerized literature searching, scholars, students, and librarians alike have had to face the special challenges presented by electronic information sources. Issues of question analysis and selecting the appropriate databases for particular research questions, understanding command and search language protocols, interpreting search results, and finding cited materials are increasingly difficult to address as the number, scope, and types of databases grow and as the user population becomes larger and more dispersed.

New publishing and information technologies offer greater research possibilities across a spectrum of disciplines, with much of the greatest recent growth being in the humanities. Local, national, and international networked databases, databases created and shared by individual scholars, machine-readable texts, graphics and audio databases, and bibliographic databases—all in a variety of technological formats—converge to give the scholar and student a remarkable array of information on which to base study and research. The scholar's workstation, providing information beyond the library's walls, is now a reality for some. But, in order for researchers and students in the humanities to be able to use this confluence of technologies successfully, librarians need to design effective, creative, and attractive instructional programs—and overcome some of the instructional challenges inherent in dealing with humanists.

Librarians giving instruction must understand the unique characteristics of both humanistic research and of the humanist in order for instructional programs to be most effective. One would expect researchers and research methods in discrete disciplines to differ, just as the structure and information patterns of the disciplines differ. Assessing both individual and discipline-specific user characteristics is essential for designing effective instructional approaches. Linda Brew MacDonald (1991) outlines six questions that the instruction librarian should ask in order to determine learner characteristics for teaching electronic information sources: What is the educational level? What common background do learners have? Is there a preferred learning style? What are learners' attitudes toward automated sources? Are learners motivated? and, Can the instructor adopt the learner's perspective (pp. 32-34)? While an advanced educational level and background in humanities scholarship may be easily assessed and can provide a common base of understanding on which to build user instruction, humanists' cautious attitudes toward automation and their lack of substantive motivation for using technologically based sources directly affect which teaching methods will be successful.
The Difference in the Humanities

The central difference between research in the humanities and research in other disciplines is the importance of the text and of the analysis of language in all aspects of humanistic scholarly and creative pursuits. Although individual humanities disciplines may be viewed as content areas not unlike scientific disciplines—such as art history or archaeology—the underlying unifying theme for humanists is that "the humanities have something to do with texts and their longevity" (Baron, 1985, p. 251). It is this reliance on the text that dictates many of the attitudes that humanists have about computers and alternate nonprint versions of texts and thus about the language used to search computerized databases.

In addition to serving disciplines in which the study of texts is preeminent, humanistic research may be defined as "a method of analysis, as a way of looking at a subject matter" (Baron, 1985, p. 251). This method generally involves a great deal of judgment and attention to nuance which excludes quantification and "logical clarity," approaches not generally found in scientific research: "Humanistic knowledge is more open-ended, requiring complex philosophical and aesthetic judgments, and their disciplines are not normally organized in the hierarchical fashion of the sciences" (Atkinson & Walker, 1989, p. 24). The lack of hierarchical structure in the humanities appears to be directly opposed to the binary structure of computers and databases.

Humanities research also has interdisciplinary implications, even though many humanities scholars do not reach beyond sources in their own discipline. Margaret Stieg (1981) discovered that historians tend to follow established research patterns and that their knowledge of a wide range of sources is limited (p. 551). Nonetheless, a research question in literary history of ten may include concerns closely related to political history, economics, philosophy, and potentially the entire range of humanities disciplines from musicology to archaeology.

How the humanities differ from the sciences and social sciences may affect how humanities scholars view technology. The centrality of the text, the analytical approach, and the interrelationships among the content areas all work against the humanist accepting technology into the research process.

Attitudes Toward Technology

Humanists, as scholars and teachers, are often characterized as unwilling to embrace new information sources and technologies. Many have theorized about the reasons that some humanists are skeptical regarding the computerization of information and texts. Scott D. Stebelman (1981) conjectures that the reason humanities users
view the computer as just “another inscrutable and potentially demeaning machine” is rooted in childhood and adolescent negative experiences with a variety of machines (p. 444). He also points out philosophical reservations that some humanists have about computer use: “Because the computer can do so many things that we cannot, such as process large amounts of data quickly and dispassionately, humanists fear that computers will become the psychological prototype for the new man or woman” (p. 445). Although Stebelman’s observations may be overly psychoanalytical, many humanists do, indeed, view computers and computer-aided research differently than their counterparts in the sciences or social sciences.

In fact, B. J. Rahn (1987) explains that it takes humanists longer to learn computing skills “because they don’t make certain kinds of automatic assumptions that pure scientists and social scientists do” (p. 59). Rahn also points out that humanists “lack the conceptual framework and language common to professionals in these other fields” (p. 59). Language and its clear use, which is so important to scholars in the humanities, is often “abused” by computer professionals in jargon-laden documentation and discussion:

a humanist who interfaces with cybernetic processing is accessing a miniworld containing parameters of linguistic inelegance that possess the undeniable potential of arousing various negative responses ranging from a certain degree of suspicion to outright anger. (Crawford, 1986, p. 570)

Given the inscrutable terminology and diction of many computer manuals, it is no wonder that humanists are put off by the language used by members of the computer and information technology industry—including librarians.

Naomi S. Baron (1985) focuses on some of the specific concerns that humanists have about computers and technology. She outlines three essential fears that humanists display regarding computerized information sources. First, humanists are concerned about the elimination of nuance and judgment inherent in humanistic research that may come with over-reliance on electronic, mechanized analysis: “[W]ith the increased presence of computers in higher education, students may come to believe that there are no shades of grey worth worrying about in human affairs” (p. 259). Baron even implies that, because of the judgment and interpretation required in humanities disciplines, students may gravitate instead to courses and disciplines (such as chemistry) in which the logical approach to the discipline—“yes/no” binary logic—approximates the computer’s own processing systems (p. 259).

Several theorists agree with Baron’s (1985) second observation concerning the reasons that humanists are skeptical about
automation: that computers signal the potential end of the book, "that computers will violate our notion of the centrality of the text" (p. 260). This fear relates to the importance attributed to handwritten or printed texts in humanities disciplines. The manner in which humanists do their research often depends on the fortuitous discovery of connections between ideas and words found through browsing and "stumbling across" information (p. 259), whether it is by examining the card catalog, scanning titles of books in the stacks, or leafing through a book.

Marilyn Schmitt (1990) echoes this concern in addressing the negative ramifications of using intermediaries to search bibliographic and textual databases: "What will happen in this environment to the essential role of browsing, of wandering until you find what you are looking for, and, more important, what you did not expect to find" (p. A44)? Some humanities scholars feel that one cannot browse through a computer file with the same results as browsing through tangible cards or pages. Thus, they may think that computers will be counterproductive to successful research in the humanities. The "hit-or-miss techniques" used by humanists may be inefficient by librarians' standards of information retrieval but are nonetheless ingrained in established research patterns (Stern, 1985, p. 163).

Finally, Baron cites perhaps the greatest fear humanists have about the computer: the fear that it will render the humanities themselves irrelevant, and that we will all come to ask, Who needs the humanities (p. 259)? The corollary question, of course, is Who needs humanists? particularly humanists who do not use or exalt the computer? It is the humanist's own feeling of inadequacy in dealing with new technologies and new information publication and storage formats that is reflected in this deep concern. Baron implies that this concern is fed also by the prestige that science and the scientific method have been given by the public and by the larger scholarly community (Baron, 1985, p. 252). The perceived threat to the future of humanistic research and the rise in prestige of science can be traced to the modern valuing of technology over the humanities as an essential part of economic progress.

Other philosophical and practical issues also affect humanists' attitudes toward using computerized databases. One of the most often cited concerns is that of cost. Stebelman (1981), Mackesy (1982), Stern (1988), and Lehmann and Renfro (1991) all point out that humanists are put off by the idea of paying for information. Humanists often feel that association memberships should include access to databases, such as the *MLA International Bibliography* (Mackesy, 1982, p. 150).
Furthermore, humanists have lesser research money available to them through university or grant funding than their counterparts in other disciplines.

Humanists also resist being restricted to the location of a machine in order to do their research. Lehmann and Renfro (1991) found that connectivity, "getting the scholar to the resource with a minimum of effort on his or her part" (p. 411), was a key in overcoming humanists' negative attitudes toward technology. In addition to the need for technical assistance in using computers and networks, many humanists do not have the time or patience to invest in learning computerized literature searching.

Another interesting impediment to searching is discussed by Sandi Kirkham (1988). She observes that the lack of librarian-searchers in the humanities may exacerbate the humanist's reluctance to use computers (p. 98). Compared to the number of business, trade, and science librarians, there are fewer humanities librarians skilled in providing access to the range of information technologies now available in humanities disciplines. Furthermore, Kirkham indicates that some who go into humanities librarianship do so in order to get away from information technology (p. 98). Humanities librarians, then, and the researchers whom they serve, may work together to keep technology at a distance from humanities research. It is the responsibility of humanities librarians to learn about appropriate databases and technologies and, by overcoming their own fears, help their humanist patrons as well.

Although the attitudes, fears, and concerns that Baron and others ascribe to humanists may apply to many in humanities disciplines, these attitudes are becoming less pervasive as increasing numbers of scholars use word-processing programs to write their own books and articles, and as many humanists are using computer programs to analyze quantitative information (Stern, 1988, p. 162).

Concerns about the future of the text persist, however, and many humanists who are computer users still rely on manual methods for research and analysis. Stern (1988) observes that humanists even feel some sense of "satisfaction with comfortable and familiar, if haphazard and inadequate, research methods" (p. 163).

**Needs Versus Technology**

In many respects, humanists' information needs are not best fulfilled by information technology or even by librarians. Like the structure of humanities disciplines and humanistic research itself, the content, language, and methods of access used to search computerized databases differ significantly from those in the sciences.
Content

The basic differences between what computerized databases contain and what humanists need contribute to the humanist's skepticism about the effectiveness of computers for humanistic research. Stephen Lehmann and Patricia Renfro (1991) point out that "the most fundamental distinction between researchers and librarians is perhaps the emphasis on content by the one and on access by the other" (p. 410). Librarians are most interested in how information is organized and retrieved and thus see the inherent value of online systems; the humanist, on the other hand, "after checking for his or her own publications, looks for that seminal work published in Belgium in 1937 and wonders what the use is of a system that does not include it" (Lehmann & Renfro, 1991, p. 410). Database content concerns center on the number of suitable subject files, the general lack of primary sources either cited or provided online, and the reliance of bibliographic databases on current journal literature rather than retrospective journals and monographic coverage. Stebelman (1981), Mackesy (1982), Stern (1988), Atkinson and Walker (1989), and Lehmann and Renfro (1991) all have pointed out the discrepancies between what is available online and what is needed by humanists for their research.

Although the number of humanities databases is growing—in full-text, bibliographic, and data formats—many scholars are unfamiliar with the range available and are unaccustomed to using any sources other than the standard index in a field. For example, while literature scholars have available to them databases other than the MLA International Bibliography online, they have relied on the printed MLA International Bibliography nearly exclusively for their own research and, thus, often do not expand their online or printed sources to include Arts and Humanities Citation Index or Humanities Index.

Humanities scholars also need to find primary and book materials from which to work. Online sources rarely include citations to any primary sources, much less the often obscure and unstudied sources that a humanist might need. Related to the general lack of primary materials is the lack of references to monographic material, particularly retrospective material. Atkinson and Walker (1989) indicate that "humanistic scholarship has strong historical dimensions, such that books are at least as important as journal material, and retrospective coverage even more vital than currency" (p. 35). Lehmann and Renfro (1991), in studying the use of the RLIN database at the University of Pennsylvania, found that the availability of references to older monographic literature in the RLIN database greatly enhanced its usefulness to humanities researchers (p. 411).
In fact, both the RLIN and OCLC databases have special appeal for humanities researchers because they include citations to older materials, monographic items such as books and pamphlets, and primary sources that current bibliographic databases do not include.

One of the most basic characteristics of humanistic research is the need to use secondary and primary sources that reach back in time beyond what is commonly available on computerized systems. Humanists are much less concerned with currency than they are with retrospective research. While earlier scientific results may be superseded by current research, humanities research can stay vital for decades (Mackesy, 1982, p. 149). The lack of retrospective online information has changed little since 1982 when Eileen Mackesy observed that, "of the databases currently available, only Philosopher's Index has available online all the material that has also been published in printed form" (p. 149). Even though critical databases, such as the MLA International Bibliography, now have expanded their backfiles considerably, some humanists dismissed their usefulness early on at a time when those databases only covered a few recent years and are still skeptical about searching those databases again.

The lack of historical coverage in online databases will be eased over time as more retrospective literature is included in database files. Regardless of how far back databases eventually reach, however, the issues of full-text primary source availability might only be addressed by the increased building of personal textual databases by individuals and individual institutions. As Lehmann and Renfro discovered, database content is the single most significant determinant of database use—surpassing connectivity, user-friendliness, and cost.

Language and Access

The differences between how humanists use language and how computers retrieve words and citations create significant conflicts for humanities scholars. Mackesy (1982) observes that "computer searching...forces scholars who work with ideas and concepts to define their language carefully in a way in which they are not accustomed" (p. 150). The ambiguous language used in article titles, language which is sometimes "cute and meaningless" (Mackesy, 1982, p. 150), causes particular problems for searching bibliographic online files in which little information beyond the title is provided.

Furthermore, humanities articles can be difficult to abstract since they often discuss a range of time periods, historical and literary figures, named persons, trends, and topics—all of which can be referred to by a variety of acceptable terminology that may or may not appear in the title or abstract (Stern, 1988, p. 162). Stebelmann
(1981) gives the example of the literature scholar trying to research character development in the Victorian novel: the searcher may need to enter into the computer the names of all major characters in all Victorian novels and indicate the Victorian period using both the term "Victorian" as well as a range of years. Stern (1988) points out that germane dates are not always discussed in articles and that imprecise terminology is often used (e.g., "medieval," "19th-century," "early modern") (p. 162).

It is not surprising that many humanists feel that scanning the printed MLA International Bibliography may, in fact, be easier than trying to outsmart the computer's terminology. While the use of controlled vocabulary can alleviate some of these confusions, inexact humanistic language and discipline structures prevent controlled vocabulary searching from being entirely accurate.

Stebelmann (1981) neatly summarizes the three major issues surrounding the vocabulary used in humanistic research: "[T]he vocabulary is softer and less easy to control or predict than in other disciplines; relevant research is often subsumed under broader or narrower concepts than the user anticipated; language limiting is nonexistent in a key data base, as is effective period limiting in others..." (p. 449). In other words, the language of humanities scholarship comes in direct conflict with the language and search structure of computerized databases.

**WHAT TO TEACH HUMANISTS**

Given the nature and structure of humanities scholarship, attitudes of humanists toward technology, and the information needs of humanists, what should librarians attempt to teach humanists about computerized literature searching in order to make their research more efficient?

**Establishing Need**

Before librarians can teach anyone anything, they must establish a need for instruction in the potential searcher, particularly in humanities scholars who may not see the value of changing their teaching or research patterns to include computerized databases. This is, of course, part of the essential marketing mission of instruction librarians. The common use of demonstrations, newsletters, library signage, and word of mouth can all work to attract humanities scholars and students to computerized literature searching. Educating humanists about which databases are available in their field, including special attention to type of material contained in the databases and range of years covered, can help to overcome some of the concerns about database content that humanists express. Special attention
should be given to databases which both undergraduate and graduate students might use effectively for their own papers. In this way, the researcher too can learn how database searching improves the quality and quantity of research.

Concepts and Skills

Once humanists have found a research need for using information technology, librarians must decide what to teach humanities scholars and students. On the one hand, the humanist could be taught only searching skills that are based on an analysis of a system's particular functions. The searcher can be taught which keys to press in a specific system to achieve a desired result. Or, librarians could teach concepts—the general principles of database construction, selection, searching, and evaluation of results. Giving scholars this conceptual framework provides the basis for understanding any database or any computerized information retrieval system. Teaching concepts such as information structure and research strategy will help humanities users to overcome fears about technology use and to approach new retrieval systems with confidence and curiosity.

Librarians, and computer system educators in general, are recognizing the importance of teaching concepts over skills. Nancy Ide (1987) refers to teaching concepts as the “Holistic View” of computer instruction, which she defines as:

the Holistic View is most concerned that the knowledge, concepts, and skills taught in computers and the humanities courses provide adequate understanding of the formal methods underlying computer implementation, as well as substantial foundation for the acquisition of new knowledge and skills that may be relevant to the field in the years to come. (p. 211)

The “Expert Users View,” on the other hand, seeks “to familiarize students with existing tools and provide sufficient skills to enable them to automate phases of fundamentally traditional humanities research” (p. 211). Ide feels that too many humanities computing courses focus on the Expert Users View rather than the Holistic View (p. 211). Both approaches are important, and users should have the option of getting the broad view of computing in the humanities in addition to practical search training.

Key Concepts

In order to understand how automated information retrieval systems work, humanists need to understand several key concepts in database structure and search software design. To address the humanist's unique concerns for history and context, the librarian should share an overview of the history of computing with searchers.
Tannenbaum and Rahn (1984) explain why this understanding of history is so important:

[Humanists] should... know something of the history of the computer—which is really intellectual history—so that they can appreciate the significance of its invention in the development of Western civilization and be able to assess, in part at least, the enormous cultural impact of the computer on society as well as gain some vision of the computer's implications for the future. (p. 19)

Thus, the humanist can place computing in a historical context and set the philosophical basis for learning more about computer use.

The practical concepts that humanist searchers, like other searchers, need to understand begin with what is meant by the term database, particularly as it applies to their disciplines. Elements that should be specially addressed include the range and variety of databases available to them, the subject areas and types of materials covered, ranges of dates covered, relationship of the computerized database to any print counterparts, and research situations in which the databases are appropriate (Lippincott, 1987, pp. 186-87).

A searcher also needs to understand how a database is constructed and how it might parallel a familiar printed source. The basic unit of a database—whether it is the bibliographic record or the text of a poem—should be explained carefully. Record structure, including the concept of fields, should be the focus of general database orientation. It is particularly important to explain to humanists the differences in searching full-text, data, and bibliographic databases.

**Search Strategy**

Humanist researchers should be encouraged to construct a careful search strategy. Since some searchers may be skeptical of the computer's ability to help in their scholarly work, attention to a search plan that is likely to get satisfactory results is critical in the early learning stages.

At the heart of a good search plan is thorough analysis of the research question. No matter how antithetical to the novice humanist searcher the idea of "thinking" like a computer might be, the librarian should lead the scholar in identifying key terms and relationships in the research question, and in listing synonyms or related words for these key terms. Attention to different ways of expressing historical or literary time periods, movements, and concepts will help the search be more relevant. The concept of controlled vocabulary and the use of database thesauri may be introduced to facilitate searching.

In addition to analyzing the research question, the searcher must group common elements of the research question into sets and be able to manipulate those sets effectively using Boolean operators. Although set theory and Boolean logic is not necessarily easy to
understand, humanists will expect computer logic to be straightforward. Crawford (1986) observes that “a humanist, no matter how uninitiated, is likely to believe that the logical operations involved in reading a bibliographic database should appear simple, resembling those required for reading a card catalog” (p. 571). The current proliferation of machine-readable texts, such as the ARTFL (American and French Research on the Treasury of the French Language) and Thesaurus Linguae Graeceae, places special demands on the ability to navigate through large amounts of text using Boolean and free-text searching.

The final element of search strategy construction is database selection. The librarian should spend ample time teaching the humanist how to match the research need with the appropriate databases. Databases, such as RLIN and OCLC, provide the retrospective coverage of monographic and other publication formats that humanists need. Public access to these systems should be made available to researchers; special instructional materials should address the unique characteristics of these search systems. Since humanities disciplines—and thus many humanities research questions—are interconnected, multifile searching should be explained. In fact, Atkinson and Walker (1989) discovered that, for humanities searchers, one system and one database does not lead to the most effective search results (p. 29). Unfortunately, humanists often are unwilling to search databases with which they are unfamiliar.

Middlebury College librarians recently experimented with the WILSONDISC demonstration CD-ROM disk to teach cross-database searching and thus teach a broader view of the research process. The WILSONDISC demonstration disk contains six months of sixteen different databases. Working with librarians, tutors in the college writing center searched one subject through several of the databases on the demo disk to show students writing research papers the interconnectedness of databases and to give them an understanding of the interdisciplinary nature of some areas of study (MacDonald, 1991, p. 15). This same multifile, cross-database searching approach can be used with more advanced humanities students and with humanities scholars using advanced research databases such as Arts and Humanities Citation Index, MLA International Bibliography, PsycLIT, and Historical Abstracts.

Searching Skills

Of course, a successful search is based not just on the searcher's conceptual understanding of information retrieval systems. Once the humanist has a solid foundation in database concepts and strategy, he or she needs to be shown the technical skills of searching. The
commands to begin searching, to execute a search, to combine and truncate terms, to view and print results, and to get help differ with each system and thus must be addressed on a system by system basis. Lippincott (1987) lists the specific features that a searcher should be shown for each system: logging on and off the system, including system security; keyboard mechanics; and input and output procedures (p. 189).

Teaching the technical aspects of searching necessarily must include telecommunications issues. In addition to remote access to local catalogs and databases, a variety of bibliographic and full-text databases for humanists are now available through Internet and other national and international networks. Lehmann and Renfro (1991) discovered that issues of connectivity, including the understanding of network connections and the use of hardware and software, were second only to database content concerns as impediments to effective searching (p. 411). Librarians can help the technologically hesitant humanist to learn how to make connections from his or her office, classroom, or from wherever the information need is felt.

In addition to system-specific and technical searching skills, humanists also have expressed a desire to learn other types of computing skills, such as the use of computer graphics and statistical packages (Estabrook & Hunter, 1987, p. 69). There has been much discussion outside of the library literature about the specific computing skills and knowledge of applications software that humanists might need. Denley (1990) outlines four kinds of teaching that fall within the purview of those involved in humanities computing: word-processing skills; basic computing skills; discipline-specific computing skills; and discipline-specific computing skills with the help of a computer (use of computer-aided instruction, expert systems) (p. 19). Further specific skills that the humanist researcher should learn include relational database analysis, modeling and simulation, data acquisition, process control, and computer-aided instruction (Tannenbaum, 1987, p. 221).

As humanists become involved in creating and managing their own databases of citations or text, many may want to learn the principles of programming and the applications of computers to disciplines outside the humanities. Tannenbaum (1987) cites four fundamental reasons for teaching humanists how to program:

a) to understand the potentials and limitations of software; b) to make simple modifications to programs to meet their special needs; c) to communicate effectively with a professional programmer working with them on a project in their discipline; and d) to evaluate software for possible use in their discipline. (p. 218)
While most librarians are not qualified to teach specific programming skills or applications software, they should be aware of the humanities-specific resources available to scholars if they should choose to learn more about computer programming and applications software.

HOW TO TEACH HUMANISTS

Ideally, a librarian faced with instructing humanist researchers or students in computerized literature searching, would have the inspiration, time, and resources to teach motivated learners concepts as well as skills, technical access to systems as well as some programming and applications software. Learners would be exposed to the range of information technologies available in the humanities disciplines and would emerge from the course familiar with bibliographic as well as data files and full-text databases. Unfortunately, humanists generally are not willing to invest such time and effort into learning computer searching skills, nor does the library generally have the time or resources to provide in-depth instruction.

Anita Kay Lowry (1990), however, has designed and taught what may be the ideal course for humanities students at Columbia University's Graduate School of Arts and Sciences: "Research in the Humanities: A Practicum on Resources and Methods." The course is comprised of eight two-hour sessions and taught in a small group seminar. The eight sessions cover: (1) introduction to library and archival research; (2) reference tools and services; (3) introduction to computerized databases for bibliographic research; (4) searching computerized bibliographic databases; (5) organizing scholarly information; (6) scholarly communication and publishing; (7) machine-readable texts, part 1; and (8) machine-readable texts, part 2 (p. 27). This dynamic course for graduate students allows Lowry to teach both skills and concepts in addition to discipline-specific databases and computing applications.

Most libraries, however, cannot offer such extensive instruction. Instead, the same one-hour bibliographic instruction session available to scholars and students in all disciplines often must suffice for humanists as well. While standard library instruction techniques can be used with humanists successfully, there are, however, several teaching approaches that work particularly well with humanist learners and address specifically the attitudes and behaviors that humanists often display.
Several librarians have pointed out that the most immediate obstacle to the use of computerized databases by humanists is that of cost. Both Stebelman (1981, p. 448) and Krausse and Etchingham (1986, p. 92) found that subsidizing literature searching for the humanist greatly facilitated database use. Overcoming the humanist's opposition to service and searching charges opens the way both philosophically and practically for the humanist to be able to search without financial burdens.

The Personal Approach

Once concerns about cost are addressed, the skepticism that humanists display about technology assisted research can be eased most effectively by using personal one-on-one approaches to showing technology to researchers. Librarians at the University of Rhode Island's Computer Access Service (URICA) found that humanists used their librarian-mediated search service much less than scientists. In order to attract more humanists to URICA, librarians made telephone calls to faculty who were visible library users, interlibrary loan service users, and bibliographic instruction users. The calling campaign was "instantly successful" and humanists increased significantly their use of the URICA system (Krausse & Etchingham, 1986, p. 92).

Demonstrations

Stebelman (1981) also highlights the need for personal and persistent marketing techniques to attract humanists to computerized database searching and to instructional sessions. Providing demonstrations of database contents and capabilities at the humanist's own department or office is the most effective means to educate humanists on the potential use of computerized databases to their teaching and research:

I cannot overstate the importance of actual on-line demonstration to humanities users: they are more resistant than most groups...; they often know very little about computers; and because they know so little about computers, they will not benefit much from posters or brochures that talk abstractly about an activity that they cannot even begin to visualize. Seeing is believing, and unless they see for themselves, few will believe. (p. 449)

Demonstrations given in department lounges and other familiar and comfortable settings allow the humanist to see and learn database searching without being threatened by a strange environment.

Demonstrations and instruction can also happen effectively and in a nonthreatening manner at the point of need, most specifically at the reference desk. Librarians staffing the general or departmental reference desk should be sensitized to the special concerns of humanist
library users and searchers. The special relationships that individual librarians have established with individual humanities faculty can be used to enhance receptivity to computerized database searching.

**Formal Sessions**

In addition to informal demonstrations, the librarian may have the opportunity to provide formal laboratory instruction to humanists. Tannenbaum and Rahn (1984) found that team-teaching works well with humanist learners, particularly when "a computer scientist who has extensive experience in humanities and social science applications [is] paired with a humanist who has considerable professional experience using computers" (p. 22). Furthermore, they discovered that women instructors help to break down traditional stereotypes of women and humanists as being nontechnical and offer excellent role models for hesitant students (p. 23).

Any formal class in database searching should provide ample opportunity for "carefully planned, thoroughly tested, and fully documented laboratory exercises" (Tannenbaum & Rahn, 1984, p. 19). It is important, then, for the librarian to design exercises that will address the specific research interests of the humanist and, if possible, the individual researchers in the class (Stebelman, 1981, p. 449). The librarian should do all that he or she can to ensure that the laboratory experience will be successful by planning out sample searches and exercises beforehand. If the humanist's initial searching experience is unsuccessful or frustrating, he or she will likely not return to the computer soon.

**Language**

Because humanists are put off by the jargon used in computer manuals and by computer professionals, it is important to stay away from unnecessary technical terminology. Rahn (1987) explains that "one must devise pedagogical strategies and employ language appropriate to humanists in order to enable them to build on already acquired intellectual frameworks and learning techniques that are familiar to people who work in the humanities" (p. 59). Librarians themselves, therefore, must become familiar with the structure and language of humanistic study, in addition to being familiar with humanities databases and searching techniques.

The techniques used to teach humanists do not vary much from those used to teach scholars and students in other disciplines. It is the approach to the humanist, however, that needs to be judged carefully. In all cases, a personal, tailor-made approach will pave the way for successful interactions with the computer and the librarian.
CONCLUSION

In many respects, the odds are against librarians trying to teach humanistic scholars and students how to use computerized databases. Historically, humanists have been skeptical about the value of computers in their research and have been hesitant to try new research techniques. The very structure of humanities disciplines is not conducive to computerization. But humanists can and do learn computing skills. In fact, humanities disciplines, like most areas of study, are becoming increasingly computer dependent. Machine-readable primary texts, locally constructed databases, and national networks are changing the way scholars do research and communicate with each other.

Librarians play a key role in helping humanities scholars to overcome their preconceptions about computers and to navigate through the wide array of new information technologies available to them. Librarians also have a central role in system development, particularly in designing the user interface and participating in system standardization. Librarians and scholars alike, however, are "shooting at the proverbial moving target":

electronic systems will engage scholars and librarians in a dynamic of change, where both sides interact in a back and forth of stimulation and adaptation. New technologies will spur on new research methodologies, and these, in turn, will guide new technological developments. It is important that technology in the scholarly environment be understood as a part of this dynamic process and not as a Darwinian, adapt-or-die imperative. (Lehmann & Renfro, 1991, p. 413)

Librarians, therefore, must be flexible and open-minded so that they can instill those same characteristics in humanities users.

With careful planning, the librarian can assess which instructional approaches to use in view of humanists' special attitudes and concerns. The value of planning and setting educational objectives early on will help ensure successful instructional sessions (Carlson, 1988, p. 53). It is the users' needs that must always drive librarians' educational efforts. In the case of humanities users, the imperative to understand individual and discipline specific attitudes and behaviors is clear. By recognizing and addressing creatively the unique needs of humanists, librarians can help humanities scholarship progress.

REFERENCES


