The Impact of CD-ROM Technology on a Bibliographic Instruction Program

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As CD-ROM technology continues to grow in popularity among libraries, its effect will be felt in many different ways. This article examines the effect of such technology on the bibliographic instruction program at Georgia State University's Pullen Library. The preliminary steps to incorporating CD-ROM technology are discussed, followed by an explanation of the changes in the way bibliographic instruction is conducted. The authors also plan for the future with a look at forthcoming developments and their impact on the bibliographic instruction program.

At the heart of a rapidly expanding university in fast-growing Atlanta, Georgia State University's William Russell Pullen Library's faculty and staff have consistently tried to meet the challenges and opportunities of high technology. By the early 1980s, the focus of this effort was a high volume of librarian-mediated online searches on *Dialog* and *BRS*. The demand for this service continued to grow as awareness of the service spread throughout the university community and to the surrounding downtown business and government centers. The demand reached more than 800 searches during the 1986–87 school year.

Early in 1987, the Pullen Library faculty decided to respond to the new CD-ROM technology coming into the marketplace. The first step was to subscribe to *Infotrac* and set up an installation of four workstations, followed by *Datext* and SilverPlatter's *ERIC*. In the following years, thirteen databases and ten workstations were added to the CD-ROM service, including such diverse products as *Medline*, *ABI/Inform*, and *MLA*. Also, as a selective depository, the library started receiving a number of federal government documents on CD-ROM, including vitally important Bureau of the Census products and the *National Trade Data Bank*, in 1989. These conditions forced us to reconsider our teaching role.

USER RESPONSE

Response to this new, almost magical (at least for the students) technology was overwhelmingly enthusiastic. With *Datext* and *ERIC*, the large student population in business and education realized they had found a tool that could revolutionize their research. Many students and faculty who were accustomed to fee-based, librarian-mediated online searches perceived a threefold advantage to the new technology: they could perform searches for themselves, there was no direct cost to

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them, and they could receive immediate results. Also, researchers who had formerly used the print indexes found the CD-ROMs efficient and fascinating.

Of course, there was and continues to be a downside to this new wave of technology and its high use by library patrons. Both have created what David Taylor refers to as a "new bottleneck in the library." He states that "CD-ROMs seem to be a service that people like so much that we will never be able to provide enough of them."[1] Also, at Pullen Library, patron response has caused greatly increased activity at the reference desk as librarians have been called upon to teach people how to use the new systems, as well as to tend to technical problems and printer upkeep. Steven Zink states that CD-ROM's uniqueness and warm user reception have overshadowed an underestimation of the human resources required for its use.[2] The authors have also found this to be true at Pullen Library. There, library staff now have to use time previously spent on other duties on the CD-ROM service. Additional professional and nonprofessional staff have been scheduled during peak times to assist patrons. Another effect of CD-ROM–based research has been a dramatic increase in interlibrary loans and requests for interlibrary use cards. Interlibrary use cards are issued as a result of a cooperative agreement among Atlanta-area academic libraries to allow the faculty, staff, and students of one institution to use the library of another institution for a specific purpose for a limited time.

CD-ROM BEGINNINGS IN BIBLIOGRAPHIC INSTRUCTION

Participation in the library bibliographic instruction (BI) program has traditionally been a primary activity of the Pullen Library reference department faculty. For many years prior to library automation, library instruction classes had focused on using print indexes, abstracts, and the card catalog. However, in line with Loretta Caren's thesis that "the new technologies must be incorporated into any state-of-the-art instruction program,"[3] use of Pullen Library's new online catalog *OLLI* was included in BI classes as soon as the system became operational. The library staff equipped the BI classroom with an *OLLI* terminal linked to an Electrohome projector. The freestanding Electrohome transmits images from the OLLI terminal to a large curved screen visible to the entire class.

When Georgia State University installed its first CD-ROM, all reference librarians went through an intensive period of orientation. Because some of the librarians had not chosen to do online searching, their realization that CD-ROM use would be required at the reference desk as well as in the BI classes caused some apprehension. Each librarian scheduled time at the CD-ROM unit to learn the conventions of the software, database content, and the most effective searching strategies and applications.

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The next step was to develop simple and effective handouts on Boolean searching techniques. Also, because many of the school's CD-ROM databases are produced by different publishers and require unique search protocols, specialized instructions were written for each software product and modified for each particular database.

Soon, the CD-ROM technology was incorporated into the BI program. There was a great demand for instruction in the use of CD-ROMs. As Al Kagan stated of his experience at the University of Connecticut's Babbidge Library, "the CD-ROM service acted as a 'hook' to get undergraduates involved in the research process and helped to overcome their library phobias."[4] As CD-ROM usage continued to increase, the reference staff confirmed Craig Gibson's statement that, because students often consider CD-ROM indexes and online catalogs as

magical devices, the need for teaching research concepts is now greater than ever before. Reference faculty found it imperative that these technologies be taught, as he suggested, "within a larger information-gathering or search strategy process."[5]

In order to teach CD-ROM concepts, a CD-ROM player with the software of many CD-ROM databases was added to the BI classroom. Most of Pullen Library's CD-ROM vendors granted permission to use superseded discs in class instruction. Like the *OLLI* terminal, the CD-ROM workstation can be linked to the Electrohome so that both systems can be demonstrated during a BI session. Such demonstrations sparked lively student response and interaction.

TEACHING CD-ROM AT GEORGIA STATE UNIVERSITY

The new technology was first introduced to faculty because of their strong liaison to students. Two demonstration sessions for faculty were scheduled during the fall quarter of 1989. The sessions began with a comparison of database contents and print counterparts. The emphasis was on how computerized searching offers a new dimension in combining concepts that print resources lack. Following the introduction and demonstration time, faculty went to the reference department and used the CD-ROM of their choice. They were offered guidance and help from the reference librarians.

This approach was successful on many levels. For instance, the new technology was introduced in a nonthreatening, interesting, and involving manner. Also, for many of the faculty, new vistas opened up regarding ease of research, thoroughness of searching, and creative interrelating of subject areas through using Boolean operators. Finally, many professors who had assigned large groups of students to do a search on *ERIC* within a limited amount of time modified their assignments to allow for a realistic deadline. These professors had learned that there are limits to the number of students who can use the new technology simultaneously.

CD-ROM DEMONSTRATIONS

After the faculty orientation to the new technology was initiated, demonstrations were started for students. Demonstrations were scheduled on a walk-in basis at varying times of the day and week in order to accommodate as many students as possible. To publicize these demonstrations, advertisements were placed in the school newspaper and reminders to faculty, as well as on campus bulletin boards, library signs, and flyers. Schedules of drop-in sessions were placed at the reference desk. Attendance was low at first because the demonstrations were of specific subject areas. Generic sessions were set up to increase attendance. Students were requested to sign up at the reference desk and indicate their area of interest. This format proved to be successful and, therefore, is still used.

Students are alerted to the demonstrations, as well as to the handouts, if they are novices or need more intensive coverage of strategies and conventions to use on the CD-ROM databases. This eases the pressure on reference desk librarians, who are already pressed for time.

While these CD-ROM demonstrations have increased the BI workload, they are important and will be continued. Even though the number of students reached is modest, it is still significant enough to reduce the traffic at the reference desk.

BIBLIOGRAPHIC INSTRUCTION CLASSES

Cooperative efforts with faculty are a strong factor in reaching students. As a result, perhaps the heaviest impact that CD-ROM service has had on Georgia State University's BI program is on the course-related classes taught each quarter. The courses range from freshman English to graduate-level courses.

Before the advent of CD-ROM, the primary focus of the BI classes was a review of the traditional printed indexes and other reference tools, as well as a demonstration of *OLLI*. Now, however, most of the classes also include a block of time for

demonstrating and discussing compact disc technology. The amount of time spent depends on the class being taught. Graduate students in education usually want (and need) the greatest portion of a BI session to learn how to use *ERIC* on CD-ROM, while freshman and sophomore classes need a more balanced presentation that includes the CD-ROM discussion but doesn't focus on it entirely.

A variety of opinion exists among Pullen Library's reference librarians as to how much should be said about compact disc databases in beginning-level classes. Some think that the students in these classes should be given the traditional basic instruction with only a mention of the CD-ROMs. Others think that a demonstration, at the very least, is needed because students often ask for a certain CD-ROM database or which computer to use to find certain material. The authors agree that students should be informed about the availability of the CD-ROM resources and encouraged to attend the CD-ROM drop-in sessions.

On numerous occasions, when instructors call to set up a BI session for their class, they have requested that the session include a demonstration of one or several CD-ROMs. There have also been many instances when an instructor will call not to set up a BI appointment, but to set up a CD-ROM demonstration only. For instance, when an accounting professor at Georgia State University learned that the school had *Compact Disclosure,* he wanted his graduate students to see it. A BI session was arranged for the professor and seven of his graduate students. The session proved to be very productive, as evidenced by the students who have started using *Compact Disclosure* quite often. It is anticipated that, as time goes on, more upper division and graduate-level classes will request BI for certain databases; education classes will want to learn about *ERIC;* classes in marketing, management, and other business disciplines will ask for *ABI/INFORM;* health sciences classes will need *MEDLINE,* and so on. The classes are likely to include more than just the demonstration and discussion of compact discs. For fullest use of a database, users need to understand Boolean logic, appropriate use of connectors, the importance of thesauri for accessing information, the value of truncation symbols, and crystallizing a topic into the most concise statement possible for identifying the main concepts to search. With this knowledge, users can search in depth rather than superficially. Also, students who recognize the importance of learning skills to access both traditional and new sources become very serious about learning and desirous of help.

THE FUTURE

Critical Selection of Databases

Judging from the changes experienced in the BI program, more modifications are expected in the future. For instance, there needs to be more discussion of the interrelationship of subject matter among databases and/or print resources. This is a hard concept for students to grasp. They tend to think one-dimensionally and focus on one database or index as the answer to all their questions and research needs. As databases grow and expand their scope, it becomes increasingly clear that several databases will provide relevant information to a topic. For example, a student searching for critiques and analyses of Ronald Reagan's speaking style might think of speech communications journals and would be interested in *Communication Abstracts.* But the *ERIC* database also covers many of the same speech communications journals, and a search of the database retrieves several excellent references. This topic proved to be much harder to research in the printed *Communication Abstracts* than in the CD-ROM version of *ERIC.* In fact, because of the lack of appropriate descriptors, an initial scan of the printed version of *ERIC* also seemed to indicate that little information was there, but the flexibility of the CD-ROM allowed the searcher to pull up some good references. This creative type of thinking is what needs to be stimulated in the BI classes of the future.

Students also need to be made aware of and encouraged to use more than just

the databases they are accustomed to using. Many medical and nursing students, for instance, know about the *Index Medicus* and/or *MEDLINE* on CD-ROM, but they often are unaware that relevant citations can be found in *PsycLIT* that would be missed in *MEDLINE*. Librarians at Pullen Library have been teaching about the existence of printed indexes for years and have recently begun teaching about CD-ROM versions of those indexes and new CD-ROM products without print equivalents. This keeps students up with what is available. In the future, the students will need to be taught about the viability and desirability of pulling information from multiple databases. With so much to learn, one question immediately comes to mind—how can a one-hour BI session cover all of this information? There is barely enough time as is. That is a question for another time.

Locally Mounted Databases

In the future, the BI program will probably face the issue of databases loaded on the campus mainframe. Instruction for databases on the mainframe could be incorporated into *OLLI* classes because they would be accessed from the same terminals and would likely employ the same search software. Another option is for the CD-ROM classes to include instruction on the locally loaded databases because these classes already provide instruction on basic searching concepts and techniques. However, both classes already take up a full hour and often run overtime. Classes could be offered specifically for the databases on the mainframe, although this would increase the already heavy workload of BI classes each quarter. Whatever the solution is, it will have an impact on the CD-ROM service and, therefore, on the BI program.

Librarian/Faculty Communication

As the nature of the BI program changes, there will be a need for more and better interaction between librarians and teaching faculty. BI for particular databases is fine, but it is a mistake to change the entire focus of library instruction from the basic tools and processes of research to a discussion of one or two resources. When requests for BI classes are received, it will be important to determine if the class is one that needs only very specific instruction or if the BI session needs to include the basics that are traditionally covered. One-to-one discussions between the librarian and the instructor who makes the request will be very useful. However, it will be important to continue to offer orientation for CD-ROMs to faculty to alert them to software innovations and new databases.

Technostress

A challenge that already occurs when doing instruction for CD-ROMs, and that will only get worse as more databases are added, is the differing software syndrome. When teaching a class in which several databases are used, it is difficult to demonstrate one database using one software, then switch to another database and another software, perhaps even making a third or fourth switch, all the while explaining the intricacies of each database and its search commands. To counteract this syndrome, librarians will have to practice more on the various databases, and perhaps do more preclass preparation, while lobbying for greater standardization.

CONCLUSION

Georgia State University's BI program has changed and expanded with technological innovations. In short, the program has helped educate the entire university community, from students to faculty. Also, the computerized technology requires critical thinking applications in order to selectively process the overwhelming deluge of information that comes forth. As software changes, and hopefully continues to improve, even more selective applications will be necessary to sift and choose appropriate information.

Georgia State's library is probably typical of most of the United States' academic libraries that are becoming increasingly automated. Beginning perhaps with

online searching, moving to an online catalog, and then to CD-ROM databases, the library is a hub of various high technologies added to a predominantly print collection. While librarians, staff, teaching faculty, and students used to deal primarily with the print format, the situation has changed dramatically with the advent of high technology. Peter Lyman recently wrote that "the teaching role of the librarian will predominate in a digital library to create and support a new culture of information literacy."[6] Whether in a formal BI class, at a CD-ROM workstation, or in a reference interview, new BI considerations will be imperative. The professional librarian must offer to the student both print and high technology sources. This professional should transmit awareness of the importance of the interrelatedness of topics and how the databases can provide access to a variety of materials. Until formats of high technologies have been standardized, librarians will have to familiarize users with unique features which may affect access.

The impact of new technology makes more intense faculty/librarian communication and interaction mandatory in order to inform students fully of new resources and technologies. Together, their efforts better enable students to become what the ALA termed "lifelong learners" who can always find the information needed for any task or decision at hand.[7] After all, this is our ultimate goal.

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