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Humble Enough/Wise Enough

At an Association of Research Libraries (ARL) Conference last spring, William G. Grundstrom defined benchmarking as "the practice of being humble enough to admit that someone else is better at something, and being wise enough to learn how to match and even surpass them at it." More traditional definitions characterize benchmarking as the search for best practices. Both benchmarking and the related practice of comparative analysis of outcomes exist under the broader concept of assessment, a buzzword on many campuses. Assessment determines the effectiveness of programs and the degree to which they meet their goals. In this editorial I recount some C&RL initiatives in comparative analysis, a C&RL benchmarking effort, and some Penn State efforts in those two areas. Through an improvement of practices, librarians can begin the larger task of assessing how programs meet users' needs.

C&RL's Comparative Analysis. At each American Library Association (ALA) conference, the editors of the different journals published by ALA gather to hear an update from ALA Publishing and to share common concerns. Recently I used that opportunity to gather comparative information about acceptance rates and turnaround times. Member editors for Information Technology and Libraries, Library Administration & Management, Library Resources & Technical Services, and RQ were willing to share figures on an informal basis. The results were humbling, as College & Research Libraries has the longest time from acceptance to publication and the lowest acceptance rate among the divisional journals. In many disciplines low acceptance rates and length of time to publication correlate with excellence of reputation. Nevertheless, members of the Editorial Board, member referees, and the editorial group are all working to improve turnaround times.

Articles in C&RL provide a good point of departure for beginning a comparison of library practices. The genres of case studies and "how I did it well" articles often portray the successes of a single library. ACRL members use such articles as a measure for the efficiency and effectiveness of local programs. C&RL referees and editors encourage authors to present results in a manner that will be relevant to the varied types of libraries staffed by ACRL members. This body of information about practices is the first place a librarian should turn in seeking to improve a process.

Another resource for preliminary information about library practices will be the developing Association for Research Libraries' benchmarking program. This program began with a grant from the Council on Library Resources to do a pilot using the interlibrary loan process to examine the applicability of benchmarking as a technique for libraries. A report will soon be available as will courses on training and facilitation for benchmarking. In response to higher education's emphasis on assessment, ARL's Statistics and Measurement Committee continues to develop access and performance measures as an adjunct or alternative to input measures.

C&RL's Benchmarking. As a people, Americans are often accused of being insular, a charge to which American academic librarians are also vulnerable. The
Dutch publisher Martinus Nijhoff International annually awards a $5,000 grant to an American librarian to support a project relating to the study of European librarianship. This year’s winner, Stephen Lehmann, coeditor of C&RL’s Book Review Section and a humanities bibliographer at the University of Pennsylvania, will be speaking to editors of German academic library journals to explore with them areas of common concern and interest. Lehmann will bring back to the United States not just a new perspective of a distinguished and very different tradition of library journal publishing but also insights into the processes that create those results.

Penn State’s Benchmarking Efforts.

Last year Penn State’s Provost John Brighton required all academic units to engage in benchmarking as a part of their strategic planning initiatives. The University Libraries sought areas that were related to its strategic directions and that would allow librarians to improve the organization through comparison with others. The Libraries’ Administration chose provision of electronic resources to scholars, human resource development, and interlibrary loan borrowing as being areas in which our strategic direction required excellence. Each of these areas could be clearly related to the libraries’ mission and vision.

A team composed of Ron Dow, Sally Kalin, Diane Smith, and I selected the areas and determined who were the best comparators. We used comparative analysis to find libraries that were like ours in key areas, such as number of electronic databases, number of interlibrary loan borrows, and number of graduate students and faculty. We then relied on our network of professional association colleagues to provide assessments about whose programs had outstanding reputations. The institutions we approached were exceedingly gracious in spending time answering our prepared lists of questions and in showing us their operations. Working in one or more of the areas outlined above, we visited University of California-Los Angeles, University of Michigan, University of Pennsylvania, and University of Texas. In the area of human resource development, we engaged in generic benchmarking, working not with institutions like ours but with other organizations engaged in a similar task—educating staff and professionals. Two local companies, muRata Electronics North America and Corning Asahi, shared information about their programs with us.

In order to prepare for the actual visits, we studied our own operations extensively so that we would have data to share with our comparators. We made and tested lists of questions, created flowcharts of processes, and constructed control charts showing existing performance. We prepared ourselves to answer questions about the nature of our benchmarking expedition. We were aware of the imposition on host institutions and practiced our best guest behavior.

We were humbled. Although we consider ourselves to be one of the most exciting libraries in the country, in the areas benchmarked we can make major improvements.

Benchmarking is a difficult and relatively expensive method for improving processes and results. Careful internal planning and study are required before a successful trip can occur. However, the results of a well-planned and -executed benchmarking effort can provide dramatic improvement. Through seeking out the best practices both in libraries and outside them, librarians can improve practices and become wise enough to embrace a paradigm of continuing assessment and coordinated change.

GLORIANA ST. CLAIR

A Longitudinal Survey of the Information Seeking and Use Habits of Some Engineers

Maurita Peterson Holland and Christina Kelleher Powell

From 1978 to 1990 the College of Engineering at the University of Michigan offered "Technical Communications 490: Information Resources for Engineers" to seniors working on research projects. A follow-up study was conducted in 1993 to assess the impact of this course. Questionnaires were sent to 60 students who had taken the class and 60 students with similar characteristics who had not; the return rate for both groups was 50 percent. Although both groups of former students were very similar in their use of information resources on the job, those who had taken the Technical Communications course identified more specific resources available to them. They also rated formal sources of information, such as college and public libraries, more highly than did the respondents who had not taken the class, and spent an average of ten hours more per month searching for information and reading information. These data lead us to conclude that there is a relationship between the former students' use of information resources and their having taken Technical Communications 490. This study also revealed that many engineers have access to the tools needed for electronic information retrieval, and that while few receive formal instruction in their use, there is widespread interest in learning more.

The question of educating students in the use of information resources is no longer debated by most academic librarians. Well-established programs that run the gamut from orientation tours to discipline-integrated instruction, and from HyperCard help stacks to Mosaic homepages, are available on many college campuses. Literature abounds on every aspect of instruction within reference service. However, very little work has been done to investigate the impact of information instruction on the information-seeking habits of graduates after they have left the campus and have moved into the labor force. Such a longitudinal study is reported here.

BACKGROUND

During the period 1978–90 students in the College of Engineering at the University of Michigan were offered Technical Communication 490: Information Resources for Engineers. Approximately 250 students completed the 1 to 3 credit
course during the 12-year period. The senior-level course, available only to students who had a specific information research need such as a term paper or faculty-directed project, covered problem analysis, development of the information research plan, use of manual and online systems and services, evaluation of information, nature of the engineering literature, and organization of personal files and databases.

In order to learn what impact the course may have had on the students who took it, a survey was designed and tested on 30 graduates who were 8–12 years past graduation. After this pretest, the survey was administered to the remaining group of students who had taken the course during this period. We also sent the survey to a set of former students who had not taken the course, but who had similar characteristics. The matching points were gender, grade point average, departmental major, and national origin. Sixty surveys were sent out in each group; 31 course takers and 29 noncourse takers returned the survey.

SURVEY DATA

Career

The descriptions that the graduates gave of their current job titles could be divided into three broad categories: practicing engineers, managers of technical processes, and “other” (see table 1). For course takers, “other” included 2 CEOs/company presidents, 2 sales/marketing specialists, a research specialist, a commodities trader, and an attorney. Noncourse takers reported “other” to include 2 company presidents, a sales/marketing specialist, an investment banker, a Naval aviator, an assistant professor, and a financial analyst. A number of respondents in both categories also reported degrees beyond the bachelor of science in engineering degree (see table 2). Overall, the course takers and noncourse takers showed very similar characteristics in their career choices, progress, and attitudes.

The respondents were also asked to rank a number of factors that might contribute to building a successful career, with choices provided in three categories: people skills (knowing the right people, relating well to people, ability to work with all types and personalities), data knowledge (knowing the right technical information, keeping up-to-date about engineering, knowing how to use the newest equipment/hardware/resources), and work ethic (meeting deadlines or successfully completing assigned projects, doing more and better work than others, accomplishing job objectives). Table 3 shows which factors were given highest ranking. Lowest ranked by members of both groups was knowing how to use the newest equipment, hardware, and re-
sources. In both groups, the responses of those who described themselves as engineers mirrored the responses of the group as a whole.

Electronic Access

Since the engineering curriculum at Michigan is heavily workstation-based and since the Technical Communications course emphasized online information access, our survey focused on the graduates’ use of computers and information technology. The respondents provided data on their use of computer applications on the job (see table 4). Only one member of each group reported that he did not use a computer on the job, a person in sales/marketing and an engineer respectively.

Access to online information systems on the job was also examined. Respondents were asked whether their company provided access to such systems, which systems were available, and whether they used online information themselves (see table 5). Respondents who had taken the course showed awareness of a wide range of systems available to them at work. They cited company databases (maintenance system, job cost reporting, technical memory), CompuServe, NASA Recon, DTIC DROLS, NASA COSMIC, University of California library system (MELVYL), the Internet, CAS, PIRA and several other technical and business databases, Access EPA, Dialog, STN, TelTech, Lexis/Nexis, and Prodigy. Noncourse takers were less aware of systems availability at their companies and listed fewer files; their lists included bulletin boards, CompuServe, General Motors MATSPEC, Prodigy, Dialog, and the Internet.

The ability to access online information systems at work and the number of services available that were named by the members of each group were analyzed for statistical significance. Although there was no significant difference in company access to online services \( (p = .199) \), the difference in the number of systems that the former students identified as available at their workplace, as compared with those listed by the group who had not taken the class, was much more pronounced. While not significant at the .05 level \( (p = .063) \), the marked difference between two groups who have the same level of access suggests that the former students are better informed about the resources available to them. The usage of these systems, however, did not differ much from group to group.

In addition, respondents were asked about the formats in which they receive information at work (paper, electronic, or graphic/image) and the formats in which they would prefer to receive information. Two-thirds of the respondents in both categories now receive information in electronic form; two-thirds of the respondents also indicated that they would prefer to receive less paper in the future.

Information Sources

How the respondents access and receive information was also surveyed; their use of print and electronic resources, their interaction with human information providers, and the time spent on such activities are reported here. The engineering graduates were asked whether or not they maintained a personal library.

---

**TABLE 4**

<table>
<thead>
<tr>
<th>Computer Applications Used at Work</th>
<th>Course Takers</th>
<th>Noncourse Takers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( N = 30 )</td>
<td>( N = 28 )</td>
</tr>
<tr>
<td>Word processing</td>
<td>29</td>
<td>27</td>
</tr>
<tr>
<td>Data processing</td>
<td>26</td>
<td>24</td>
</tr>
<tr>
<td>E-mail</td>
<td>14</td>
<td>15</td>
</tr>
<tr>
<td>CAD/CAM</td>
<td>10</td>
<td>5</td>
</tr>
</tbody>
</table>

**TABLE 5**

<table>
<thead>
<tr>
<th>Access to Online Information Systems at Work</th>
<th>Course Takers</th>
<th>Noncourse Takers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( N = 30 )</td>
<td>( N = 29 )</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Company access</td>
<td>17</td>
<td>13</td>
</tr>
<tr>
<td>Use personally</td>
<td>9</td>
<td>22</td>
</tr>
</tbody>
</table>

(*Two made no reply and one was unsure.*)
TABLE 6
INFORMATION SOURCES USED AT WORK

<table>
<thead>
<tr>
<th>Personal professional library or file on the job</th>
<th>Course Takers N = 31</th>
<th>Noncourse Takers N = 29</th>
</tr>
</thead>
<tbody>
<tr>
<td>Own library</td>
<td>High 16, Med. 10, Low -</td>
<td>High 14, Med. 7, Low 2</td>
</tr>
<tr>
<td>Word of mouth</td>
<td>21 5, 14 4</td>
<td>14 5, 2 6</td>
</tr>
<tr>
<td>Bulletin boards</td>
<td>4 1, 8 17</td>
<td>2 6, 11 10</td>
</tr>
<tr>
<td>Info utilities</td>
<td>2 1, 10 17</td>
<td>4 2, 11 12</td>
</tr>
<tr>
<td>E-mail</td>
<td>6 2, 8 14</td>
<td>8 7, 9 9</td>
</tr>
<tr>
<td>Fax</td>
<td>6 12, 5 6</td>
<td>8 7, 5 9</td>
</tr>
<tr>
<td>Nearby college library</td>
<td>9 9, 4 8</td>
<td>4 6, 10 9</td>
</tr>
<tr>
<td>Public library</td>
<td>8 9, 4 9</td>
<td>1 8, 12 8</td>
</tr>
</tbody>
</table>

TABLE 7
PUBLICATIONS READ TO GAIN INFORMATION RELATED TO CAREER

<table>
<thead>
<tr>
<th>Course Takers N = 25</th>
<th>Noncourse Takers N = 29</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional society publications</td>
<td>16 12</td>
</tr>
<tr>
<td>Business publications</td>
<td>4 8</td>
</tr>
<tr>
<td>Computing magazines</td>
<td>3 4</td>
</tr>
<tr>
<td>Engineering/automotive/defense/federal publications</td>
<td>18 13</td>
</tr>
</tbody>
</table>

at work and to rank various information sources they used on the job. While both groups demonstrated the preference for their own personal libraries and word of mouth (which has been documented in other works on engineers and information transfer), those who had taken the Technical Communications course rated formal information sources such as college and public libraries much more highly than those who had not taken the class (see table 6). These differences were analyzed and found to be statistically significant; for the ranking of the usefulness of college libraries, $p = .029$, and for public libraries, $p = .009$.

The publications that the respondents reported they read to gain background information for their work were also examined. While no statistically significant difference was noted, the data did show that the majority of members of both groups read professional literature and technical material (see table 7). The course takers cited more specific titles and a somewhat wider range of sources.

The rankings given by the respondents to people in various groups, inside and outside their company, as sources they used to gain information that is directly related to the performance of their current jobs are shown in table 8. Once again, there was no statistical difference between those who had taken the course and those who had not. Personal knowledge and members of the immediate working group were most highly regarded as sources of information by all respondents. Those who had not taken the Technical Communications course rated company librarians, consultants, or sales representatives less highly than did those who had, but not at a significant level. Other outsiders, such as competitors and other informal contacts (from professional societies or old school friends), were ranked the same by both groups.
TABLE 8
RANKING OF PEOPLE AS INFORMATION SOURCES

<table>
<thead>
<tr>
<th></th>
<th>Course Takers</th>
<th>Noncourse Takers</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High</td>
<td>Med.</td>
<td>Low</td>
<td>No Response</td>
</tr>
<tr>
<td></td>
<td>N = 25</td>
<td></td>
<td></td>
<td>N = 25</td>
</tr>
<tr>
<td>Personal knowledge</td>
<td>30</td>
<td>1</td>
<td>-</td>
<td>28</td>
</tr>
<tr>
<td>Immediate working</td>
<td>23</td>
<td>7</td>
<td>-</td>
<td>23</td>
</tr>
<tr>
<td>Personal experience</td>
<td>8</td>
<td>14</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Others in department</td>
<td>10</td>
<td>17</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>Others in company</td>
<td>13</td>
<td>7</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Competitors</td>
<td>7</td>
<td>12</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Informal professional</td>
<td>10</td>
<td>15</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Paid consultants</td>
<td>11</td>
<td>6</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>Vendors and sales</td>
<td>13</td>
<td>9</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Company librarian</td>
<td>8</td>
<td>7</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TABLE 9
ACQUAINTANCE WITH SPECIFIC KNOWLEDGEABLE PEOPLE

<table>
<thead>
<tr>
<th></th>
<th>Course Takers</th>
<th>Noncourse Takers</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Inside firm</td>
<td>20</td>
<td>11</td>
<td>22</td>
</tr>
<tr>
<td>Outside firm</td>
<td>15</td>
<td>16</td>
<td>10</td>
</tr>
</tbody>
</table>

Respondents were asked whether they know specific individuals, inside and outside their firms, who are knowledgeable about information resources (see table 9). The frequency of their communications with others in their field, but outside their firm, is shown in table 10. Although more course takers reported that they know individuals outside their firms whom they regard as knowledgeable sources of information, the difference between the groups was negligible. The frequency of contact with outsiders, however, was far greater for those in the group of former Technical Communications students. While the difference was not statistically significant at .05 ($p = .069$), it does seem to be worthy of note, especially as most other differences between the groups were far less significant ($p > .15$).

The average number of hours per month the graduates reported they spent looking for information, reading information, and giving information to others is shown in table 11. Among those
who had taken the Technical Communications course, estimates for hours spent seeking information ranged between 5 hours and 80 hours per month, with a mean of 22.1 hours. Among those who had not, estimates ranged between 0 and 40 hours per month, with a mean of 12 hours per month spent seeking information. The difference between the two groups’ time spent searching for information was significant, with \( p = .014 \).

There was also a marked difference in the hours spent reading information. For the course takers, estimates again ranged between 5 hours and 80 hours per month, with a mean of 32.7 hours per month spent reading information, while the noncourse takers’ estimates ranged between 1 hour and 96 hours per month, with a mean of 22.9 hours. This difference was also significant, with \( p = .026 \).

The members of the two groups varied little, however, in the amount of time they spent giving information to others. Course takers’ estimates ranged between 0 hours and 80 hours per month, with a mean of 21.9 hours per month spent giving information to others. For noncourse takers, estimates ranged between 1 hour and 100 hours per month, with a mean of 18.1 hours per month. The difference between the groups was not statistically significant in this instance.

Respondents were asked about the number and type of information resources (databases, books, inhouse technical reports, etc.) that they had created during the past three years. Although inhouse tech reports and other inhouse reports, economic and business data files, computer programs and standards were mentioned as types of material created, in fact only about 50 percent of the respondents in either group reported creating products of any type.

**Additional Data Supporting Future Information Access**

Respondents were asked about their use of computers beyond the workplace and also about their interest in learning more about information access. Their responses would indicate that they have both an interest in knowing more about a wide range of sources and that they have technology in place at home for such access. They also gave considerable support to any plan which would provide formal instruction in information resource use for engineering students and practitioners.

Two-thirds of both groups used personal computers at home. Table 12 shows the number of those who also used communications software from home and the type of services with which they connected. While there was no statistical significance in their use of communications software for information access, the course takers used a more diverse group of information resources than the noncourse takers.

Respondents were asked what information they most wanted to learn about: access to information via personal computers or workstations, specific engineering information that would help on the job, or business or other nonengi-
TABLE 13
INFORMATION TOPICS
OF INTEREST

<table>
<thead>
<tr>
<th></th>
<th>Course Takers</th>
<th>Noncourse Takers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to information via computer</td>
<td>19 yes</td>
<td>16 yes</td>
</tr>
<tr>
<td>Engineering information</td>
<td>21 yes</td>
<td>20 yes</td>
</tr>
<tr>
<td>Business information</td>
<td>18 yes</td>
<td>12 yes</td>
</tr>
</tbody>
</table>

neering information (see table 13). While the difference in responses is not statistically significant, the responses from both groups show considerable interest in learning new skills which would expand their information access capacity.

Finally, the engineering graduates were asked whether they had received any formal training in information retrieval, and to describe it if they had. In addition to the formal instruction received as undergraduates, 2 course takers noted other training, 1 from vendors (Dialog, TelTech, Chemical Abstracts) and 1 from a public library. Only 2 noncourse takers had received any formal instruction, 1 at General Motors and the other from Dialog.

Approximately 75 percent of the respondents in both categories were supportive of information access being integrated into engineering classes, or taught either as a part of continuing education or of orientation/on-the-job training. About half of the respondents also supported a separate undergraduate class in information access.

KEY RESULTS

More than ten years after graduation, half of all the engineers in our survey find themselves working in positions no longer classified as "engineer"; they have become managers or moved into other careers in business, law, or academia. They are, however, unified in their belief that hard work in completing projects on time is of primary importance in moving their career forward. Almost all of them use computers, most of them for word and data processing, and two-thirds of them have computers at home where about half of them use communications software to access bulletin board and electronic information services.

The engineers who took the information resources course show similar information gathering preferences to those who did not—and to engineers generally. That is, they prefer word of mouth and their own library of information when they seek information. However, course takers showed more interest in using nearby college and public libraries. They also demonstrated a knowledge of a broader range of electronically available sources and services, and they read a wider range of both professional society-produced and engineering-related technical literature.

While we find little evidence to support course takers being more likely to approach a company librarian or information manager than others, we do see that they are more likely to rely on sources of information outside their companies such as paid consultants, vendors, and colleagues. Furthermore, course takers spent 50 percent more time than their noncourse-taking colleagues finding and using information.

Finally, both groups were almost unanimous in wanting to learn about accessing information both related and unrelated to their jobs. In fact, since only 2 in each respondent group had received any information access-related training during their professional careers, it is obvious that if there is no formal training in college, it is unlikely to occur later. And, they were united in thinking that such instruction should be incorporated into courses taught in college and should also be part of continuing education or on-the-job training.

COMMENTS FROM THE RESPONDENTS

Some of the students who had taken the class appended comments to the survey. One noted that “online research is the [way the] real world does things. It’s the only way to [do] research” and an-
other noted, "[I] believe you cannot emphasize the importance of acquiring information access skills enough all throughout school, even after school and into every workday situations. It really does give you an edge in personal and professional lives."

One of the noncourse takers stated: "While I earned two degrees at U-M, I did not use the facilities and resources available to me. My twelve years of work have shown me that I made a mistake and should have." Two others offered suggestions to make information more accessible and useful to engineers:

I believe that 95 percent of all engineers do not use technical information because it is not easily available. It would do no good if it sat in a library in Ann Arbor. It needs to be easily accessible through a PC at one's desk. In today's competitive market, one does not have time to visit a library.

The type of information I need varies considerably from one assignment to the next. I do not know ahead of time what information I require. Therefore, access to a general information source is critical. Ease and timeliness of retrieval are also important.

**CONCLUSION**

This work provides perspective on what impact instruction in information access and use had on a group of engineers. It also gives insight in how various individuals and organizations might most effectively reach and educate engineers both while they are in college and throughout their careers. It may well also provide both the framework for longitudinal study of information use in other disciplines and the indication of widespread need for training in information use throughout professional careers. We believe that there may be applications of the information presented in this work for information professionals in a variety of settings.

Academic information professionals must also build unified interfaces which promote ease of access so that all students will be able to use a diverse set of data and information resources in a simple and straightforward way. Information management faculty should note that engineers use computers for electronic access both at home and at work. The engineers want proactive instruction in the use of information access across a broad range of resources.

Engineering colleges can play an important role in promoting the use of technical information. Engineers are generally able to receive information resource access training only while they are in school. Those surveyed have given a strong mandate for information access and resource use being integrated into existing engineering courses. Corporate librarians and information managers should realize that engineers may be very interested in learning about electronic access to information and expect that some instruction should be available. While they show little enthusiasm for approaching a librarian for information, their strong desire to solve problems for themselves carries over to their interest in learning electronic information access. Engineers tend to gravitate toward careers in business and management as they mature, and they read business newspapers and magazines. Interestingly, while they say they would like to learn more about computers, few reported reading computer-related magazines.

Professional societies are positioned to play a major role in the delivery of technical and career development training. Engineers read and trust these publications most to solve their technical information needs and to keep them up-to-date.

Finally, academic librarians and corporate counterparts should consider collaborating to develop a continuum of service for newly graduated professionals in all fields. By providing electronic systems and training which encourages and extends the information seeking and use patterns established in college, this powerful collaboration should result in creating active, lifelong information seekers and users.
REFERENCES AND NOTES

1. The only example found is Naomi R. Ikeda and Diane G. Schwartz, “Impact of End-User Search Training on Pharmacy Students: A Four-Year Follow-Up Study,” *Bulletin of the Medical Library Association* 80 (Apr. 1992): 124–30 which reports data collected from practicing pharmacists up to four years after graduation. We would note that searching for longitudinal information is frustrated by very general indexing terms. For example, the terms assigned to this article are so broad (*bibliographic instruction, end-user searching*) as to be useless in locating similar articles.

2. Statistical analysis was performed with SYSTAT software for the Macintosh, using Mann-Whitney and chi-square statistical tests.


4. Strong work-orientation, self-sufficiency, and dedication to task are some of the primary attributes mentioned in an overview of the engineers’ personal and professional characteristics as reported by Richard Schott, “The Professions and Government: Engineering as a Case in Point,” *Public Administration Review* (Mar./Apr. 1978): 126–32. The “cluster of values” Schott describes were confirmed in the homogenous pattern of responses in this survey.
The State-Supported University Libraries of Alabama: Serving the Needs of Patrons with Disabilities

Barbara A. Bishop

The Americans with Disabilities Act is a highly enforceable piece of national legislation that greatly affects public institutions of higher learning. Information gathered in a fall 1993 survey of the libraries at Alabama public universities acknowledged that while disabled populations on campuses needed to be served, they were not being served. Among the reasons given were lack of preparation on the library's part, lack of knowledge of the potentially disabled student populations on campuses, and lack of funding for needed accommodations.

The Americans with Disabilities Act (ADA) was signed by former President George Bush in 1990. Some sections had implementation dates beginning in 1992. Title II of the ADA, which affects four-year state institutions, became effective on January 26, 1992. By this date Title II entities should have been aware of their responsibilities regarding accessibility. Self-evaluations and transition plans were to be undertaken and completed by January 1, 1993. These evaluations and transition plans, even if done by the college or university administration, were to have helped focus attention on library services to patrons with disabilities. These deadlines raise a major question: Are Alabama's public university libraries responsive to this national legislation, or do they lag behind?

Little has been written on the extent to which academic libraries have accommodated the needs of persons with disabilities. A search of the datafile Library Literature found eight articles published after 1984 that have the keywords college, survey(s), and handicapped in them. Of these eight, two were published in journals outside the United States and another article discussed the attitudes of academic librarians toward persons with disabilities. The remaining five articles surveyed patrons with disabilities and gathered information about their perceptions of library use.

While preparing the 1981 Oryx Press directory, Academic Library Facilities and Services for the Handicapped, James L. and Carol H. Thomas surveyed academic institutions in order to list "accessibility, equipment, and services of academic libraries throughout the United States and the outlying areas." However, this directory has never been revised and the survey was geared rather toward discovering physical access—accessible routes from parking lot to library, level thresholds, height of tables, and width of aisles—than toward overall service. There were questions regarding special equipment and services, but for the most part the questions had an architectural focus.

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The first Association of Research Libraries (ARL) Spec Kit 81 discussing disabilities needs was published in February 1982. Although the kit did not contain a copy of the survey, the responses indicate that the survey must have gathered information about both services and facilities. The documents included were divided into the following categories: policy and procedure statements, personnel and staffing, facilities and services planning, building access, descriptions of services, and publicity or user guides.

In 1991 Kate Ragsdale of the University of Alabama undertook a survey of ARL libraries regarding their services to patrons with disabilities. The survey was completed before the Title II 1992 implementation date; however, it generated much information that revealed the level of library awareness regarding responsibilities in terms of the ADA. This survey asked questions concerning a library’s responsibility to patrons with disabilities and the need for some type of self-study. The survey instrument was published along with the survey results; again documents were included that covered everything from policies and procedures to equipment provided. Unfortunately, any conclusions drawn from the results of this survey become problematic because the sampling error is much greater than 5 percent ($\chi^2 = 17$).

There has been little coordination between libraries within the state of Alabama regarding ADA compliance. Only one workshop, cosponsored by the Public Library Division and the Services to the Handicapped Round Table of the Alabama Library Association (AlaLA) in November 1991, and one session at the 1992 and 1993 AlaLA annual conventions have been conducted. The Network of Alabama Academic Libraries is cosponsoring a workshop with the Auburn University Libraries; however, this is still in the initial planning stages.

METHODOLOGY

I became curious about what Alabama’s public university libraries were doing in order to meet the needs of their patrons with disabilities and decided that a survey might provide some information. The most recent ARL Spec Kit 176 on disabilities covers a library’s accessibility in terms of programs, equipment, and facilities. The survey form and results were included in the kit. However, only generalizations can be made because of the sampling error in this survey. No valid comparisons may be drawn between these data and the data generated by the survey of Alabama’s university libraries.

The Association of Research Libraries Office of Management Services in Washington, D.C., was contacted for permission to use the 1992 survey in order to study public academic institutions in Alabama. After permission was received, the Alabama section of the 1993 College Blue Book was used to identify participants. The author chose any publicly funded institution offering a four-year program of study culminating in at least a bachelor’s degree. This resulted in a pool of fifteen libraries.

In September 1993 the survey was mailed to the library directors at the fifteen institutions. By the deadline, November 1, 1993, only eight of the fifteen surveys had been returned. Because of the small size of the survey pool, this response rate was deemed unacceptable. After a round of telephone calls and telefacsimile correspondence, fourteen of the fifteen surveys were returned. However, using the chi-square test of sampling validity, this response rate was still unacceptable as $\chi^2 = .067$. After one more round of telephone calls, the final survey was received which made for a highly satisfactory 100 percent return.

SURVEY INSTRUMENT

The ARL survey used for this project consisted of twenty-seven questions divided into four major categories. These sections dealt with general information, management and training, space for specialized library services, and general services. A final section allowed for general comments. The questions were primarily yes/no questions with explanations requested. Several times docu-
mentation was requested for particular questions (see appendix A).

**General Information**

Questions 1 and 2 of the general information section asked whether the library provided services to its disabled student population, and whether there was an increased use of the library by students with disabilities within the past five years. Questions 3 and 4 specifically asked about building accessibility checklists and improvement in accessibility during the past five years. Question 5 asked which disabilities were addressed through library services.

Although the survey population was not large, certain trends became evident. With the exception of one library, all provide services and/or equipment designed for persons with disabilities. Approximately one-third of the respondents thought that people with disabilities had not increased their library use in the past five years. Of the two-thirds that believed usage had increased, the major reasons given were increased enrollment of disabled students followed by universitywide promotion and awareness of services. Other reasons for the greater use of libraries included the provision or promotion of better services, the improvement of services campuswide, and increased awareness of disability rights.

The literature supports the choice of increased enrollment of students with disabilities as the number one answer given for greater library use. In his book *No Pity*, Joseph Shapiro says, “a 1991 report by the Department of Education notes that the number of students identified with disabilities has increased every year since 1976 and is expected to continue that trend through at least the end of the century.” Shapiro comments that those students at present graduating from college started kindergarten or first grade protected by the Education for All Handicapped Children Act. These students have never known a time when they did not have a legal right to quality public education.

In the *Profile of Handicapped Students in Postsecondary Education*, published by the National Center for Education Statistics, students reporting at least one disability comprised approximately 10.5 percent of all college students. In the fall of 1986 the number of undergraduate students enrolled in four-year public institutions of higher learning numbered 4,296,159. Of these four million plus students, 86,161 attended school in Alabama. Using the percentage of students reporting at least one disability in 1986, the potential number of disabled students in Alabama was just over nine thousand. In 1990, the number of students grew to 4,677,769 nationwide and to 102,301 statewide. This was a growth rate of almost 7.5 percent nationally and approximately 16 percent in Alabama. If the percentages continued at this rate, the Alabama enrollment could have reached 118,669 undergraduates in the fall of 1994 (projected figures at the time of this study). If the 10.5 percent of students with disabilities also holds steady, then there is the potential that Alabama’s public academic libraries are serving almost 12,500 students this year. Using the undergraduate enrollment figures from the 1993 College Blue Book, the fifteen Alabama institutions total enrollment comes to 102,764, which would equate to approximately 10,790 potential students with disabilities (see table 1).

In a 1991 article for the *Chronicle of Higher Education*, Laura Rothstein, a professor of law at the University of Houston Law Center, states that in the last ten years the number of persons with disabilities attending college has tripled. Rothstein writes about the responsibilities of university administrators regarding accessibility and accommodation resulting from recent court cases concerning Section 504 and the ADA. “Failure to make mandated changes could result in significant financial liability, costly litigation and loss of public image, and most important, loss of the valuable contributions that disabled individuals can make to any academic community.” Survey respondents reported an increase in universitywide promotion and awareness of services; in part this action may be a response to the potential
for litigation by an ever-growing and better informed disabled population attending colleges and universities.

Although Alabama libraries, for the most part, do not have a checklist for building accessibility, several of the directors noted that their library is either being surveyed as part of a campuswide study or the checklist is in process. Almost all acknowledge improvements in the elimination of barriers and the addition of specialized equipment in order to meet the needs of their disabled populations. During the past five years, libraries have focused on the elimination of physical barriers and the addition of specialized equipment or adaptive technologies for the disabled. Only one-third of the respondents have added specialized library services.

To the question "Which disabilities are specifically addressed through specialized library services?" only about 27 percent responded that programs were in place to meet the needs of students with learning disabilities. However, according to national studies done on enrolling freshmen, this is the fastest growing disabled population of students on college campuses. From 1983 to 1990 the total number of students reporting a learning disability has risen from .7 percent to 1.2 percent.\textsuperscript{11} Public university students reporting learning disabilities rose from .9 percent in the fall of 1991 to 1.3 percent in the fall of 1992.\textsuperscript{12,13}

With the exception of one library, all provide services and/or equipment designed for persons with disabilities.

This inattention to serving persons with learning disabilities is not surprising. In a nationwide survey of academic library services provided for learning-disabled patrons, only 22 percent of the respondents knew the size of their learning-disabled student population, and over 90 percent indicated they had only minimal to moderate knowledge of

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**TABLE 1**

<table>
<thead>
<tr>
<th>Institution</th>
<th>Undergraduate Enrollment*</th>
<th>Students with Disabilities (10.5 percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama A&amp;M</td>
<td>3,533</td>
<td>370.97</td>
</tr>
<tr>
<td>Alabama State</td>
<td>4,697</td>
<td>493.19</td>
</tr>
<tr>
<td>Auburn</td>
<td>21,551</td>
<td>2,262.86</td>
</tr>
<tr>
<td>Auburn Montgomery</td>
<td>6,500</td>
<td>682.50</td>
</tr>
<tr>
<td>Jacksonville State</td>
<td>5,797</td>
<td>608.69</td>
</tr>
<tr>
<td>Livingston</td>
<td>1,646</td>
<td>172.83</td>
</tr>
<tr>
<td>Troy State</td>
<td>4,007</td>
<td>420.74</td>
</tr>
<tr>
<td>Troy State Dothan</td>
<td>2,139</td>
<td>224.60</td>
</tr>
<tr>
<td>Troy State Montgomery</td>
<td>2,736</td>
<td>287.28</td>
</tr>
<tr>
<td>University of Alabama</td>
<td>16,782</td>
<td>1,762.11</td>
</tr>
<tr>
<td>University of Alabama Birmingham</td>
<td>9,509</td>
<td>998.45</td>
</tr>
<tr>
<td>University of Alabama Huntsville</td>
<td>8,156</td>
<td>856.38</td>
</tr>
<tr>
<td>Montevallo</td>
<td>3,250</td>
<td>341.25</td>
</tr>
<tr>
<td>North Alabama</td>
<td>3,904</td>
<td>409.92</td>
</tr>
<tr>
<td>South Alabama</td>
<td>8,557</td>
<td>898.49</td>
</tr>
<tr>
<td>Total</td>
<td>102,764</td>
<td>10,790.26</td>
</tr>
</tbody>
</table>

* Enrollment statistics are taken from the 1993 College Blue Book.

† This percentage is from the 1987 National Postsecondary Student Aid Study.
TABLE 2
ALABAMA STUDENTS WITH LEARNING DISABILITIES*

<table>
<thead>
<tr>
<th>Institution</th>
<th>All Students with Disabilities†</th>
<th>Specific Learning Disability</th>
<th>% of Total‡</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auburn</td>
<td>325</td>
<td>163</td>
<td>50</td>
</tr>
<tr>
<td>Auburn Montgomery</td>
<td>275</td>
<td>68</td>
<td>25</td>
</tr>
<tr>
<td>Jacksonville State</td>
<td>135</td>
<td>61</td>
<td>45</td>
</tr>
<tr>
<td>Troy State Dothan</td>
<td>26</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>University of Alabama</td>
<td>318</td>
<td>138</td>
<td>43</td>
</tr>
<tr>
<td>University of Alabama</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Birmingham</td>
<td>346</td>
<td>90</td>
<td>26</td>
</tr>
<tr>
<td>South Alabama</td>
<td>234</td>
<td>60</td>
<td>27</td>
</tr>
</tbody>
</table>

* Figures are provided by campus offices serving students with disabilities and are valid for Fall Quarter 1994.
† These are actual figures, potential could be greater according to national percentages.
‡ National figure is 12.2 percent based on the 1987 National Postsecondary Student Aid Study.

learning disabilities. Telephone calls to several Alabama campus offices serving students with disabilities show that many of the students registered with these offices have a specific learning disability (see table 2).

A person with a disability is not required to take advantage of a service offered or even disclose the disability. Individuals may not know that they have disabilities, or that they have legal rights because of a disability. As a result, many of the offices that provide services to these students may be working with only a fraction of the disabled populations on their campuses. Alabama librarians need to begin identifying the disabled student populations and then to consider how existing services best can be utilized in serving them.

Management and Training

The management and training section contained questions 6 through 15. These questions examined the units on campus with which the library cooperates (question 6); as well as funding, cost analyses, planning, and awareness (questions 7 to 11). Questions 12 through 16 concern staffing and training issues.

In terms of management and training all the respondents indicated that they cooperate with a variety of other campus entities ranging from the student government (low response) to student services (high response). Eighty percent provide funding for special library services out of their library budget, yet none have completed cost analyses for providing these services, and only 20 percent have prepared planning documents or recommendations regarding these services. This appears to validate the ARL study in which 75 percent of the respondents indicated funding came from the library budget, about 95 percent had not done a cost analysis, and only about 27 percent had prepared planning documents.

Training within Alabama’s libraries does happen. Many of the libraries provide some type of training in disability sensitivity for most of the staff who work with the public, including circulation, all public service areas, and library administration. However, only six libraries have assigned a staff member to coordinate library services; this person usually spends less than half time on this responsibility.

Alabama’s university libraries need to do a better job in preparing to serve their disabled student populations. First, they should identify the campus officer most responsible for advocating the rights of students with disabilities. All fifteen public universities within Alabama have either a specific office or officer who does this, yet only six of the respondents indicated they utilized this person.

Second, the librarians need to do evaluations on existing services and cost
analyses for potential services. Then they must identify alternate sources of additional funding beyond their own budget. In some cases, cost sharing across offices and departments can work. Sometimes service organizations are looking for ways to invest in their communities by donating funds for specific projects.

Finally, the libraries need to create a job description that includes the responsibility for library service for persons with disabilities. This staff member would communicate with the various campus departments and make recommendations to the library administration for planning and training.

**Space for Specialized Library Services**

Questions 16 through 19 examine the physical space provided for patrons with disabilities, its location and hours it is available, and the assistance provided within it. Alabama academic libraries are in the process of providing special space for their students with disabilities. Several libraries are under construction or renovation, and their plans include dedicated space for handicapped use. Many have scattered workstations, and one library explicitly stated that integration is its goal. The spaces are available whenever the libraries are open, and assistance usually is provided by the reference staff.

**Services**

The final section of questions concerned services. Policies and procedures were addressed by questions 20 through 23. Adaptive equipment needs were addressed by questions 24 through 27.

Written policies for providing library services for the disabled seldom exist. Two institutions have written policies; two others have policies in development. Auburn University has two separate statements in its *Guide to the Auburn University Libraries* and in *A Guide to the Ralph Brown Draughon Library*. These statements say that "services for users with disabilities are available on an as-needed basis" followed by a contact number. 

Troy State University’s un-published policy statement “Personal Help for Disabled Patrons” touches briefly on the library staff’s responsibilities in regards to their students with disabilities.

Alabama’s university libraries need to do a better job in preparing to serve their disabled student populations.

Services provided for Alabama students with disabilities range from the paging of materials from the stacks (about 93 percent) to the recording of textbooks or other reading materials (about 7 percent). Only three libraries give extended loan periods and four give specialized bibliographic instruction. One library responded that it gives spousal checkout privileges, and Alabama A & M provides limited signing for the deaf. The University of Alabama has speech-synthesis capabilities available on their OPAC, and Auburn University plans to have this capability available soon.

There are a variety of ways in which the libraries communicate with their students. Almost half (seven) have a suggestion box, and only six consult directly with individuals with disabilities. A couple of libraries surveyed their students; many others consulted with other campus offices or professional consultants.

The question “Do the blind library patrons at your institution use Braille?” elicited some interesting answers. Of the ten written responses, seven either did not know or answered no to the question. One director replied that “we have had no calls for the Braille dictionary.” The dictionary referred to is the *Webster’s Student Dictionary* published in 1968 by the American Printing House for the Blind. It has never been updated, and although it has been superseded by newer mainframe or CD-ROM dictionaries that can be accessed through voice synthesis, there is a growing debate on the need for Braille as a mandatory subject in schools for the visually impaired.
In 1989 the number of Braille readers in school was about 12 percent. However, because Braille is becoming as easy to produce through the advancement of microcomputer technology as a taped copy of a book, it is entirely possible that the population of Braille readers will increase in colleges and universities across the United States.

Library staff members need to identify and communicate with their disabled population in order to provide necessary services and equipment.

Equipment and adaptive technologies, in those libraries reporting, range from the reliable hand magnifier to the technologically advanced computer-based scanner/reader. Several of the libraries that have adaptive equipment report that it is seldom used. Among the reasons for this are a lack of publicity regarding services offered and a lack of knowledge concerning the disabled student population. Many of the libraries do not provide much in terms of adaptive technology. The low number of libraries providing equipment directly relates to the 80 percent which provide funding of services through their own budgets. The state of Alabama has pro-rated its education budget three times in the last ten years. Library budgets have decreased. These budgets in turn continually are being eaten away by rising serial and monographic costs.

CONCLUSION

It is difficult to draw conclusions from this study. The survey population is extremely small, and is not easily compared with existing data from other sources. Alabama librarians are aware of the ADA, but are not sure how to comply. More needs to be done within the state in terms of education and training. Library staff members need to identify and communicate with their disabled population in order to provide necessary services and equipment.

This survey of Alabama state-supported university libraries poses more questions than it answers. The lack of information on persons with disabilities and academic libraries shows that more studies need to be done. Questions that need to be answered include: Does the institution's age, size, location, and budget affect its accessibility? Are libraries in a particular geographic region more accessible than those in another? How does the library director's attitude toward persons with disabilities affect the library's accessibility both physically and attitudinally? Are older libraries less likely to be accessible than newer ones?

This was one view of one state's response to persons with disabilities. How does Alabama compare with other states? The ARL survey is a good starting place, but it only looks at the larger institutions. Are the other libraries comparable to the small, medium, and large libraries surveyed here? After all, there are only two ARL libraries in the state (Auburn University and the University of Alabama), and when the ARL survey was done, Auburn was not an ARL member.

These questions and others are yet to be answered. A survey of this nature should be done every few years, especially if the ADA is strictly enforced. This initial survey may indicate where Alabama's libraries are now, where they are going, and what they have accomplished. The ADA will not go away; therefore, librarians need to begin the process of complying; if they do not do so voluntarily, it is entirely conceivable that they will be forced to comply legally.

REFERENCES AND NOTES

4. The institutions surveyed are Alabama Agricultural & Mechanical University, Alabama State University, Auburn University, Auburn University at Montgomery, Jacksonville State University, Livingston University, Troy State University, Troy State University at Dothan, Troy State University in Montgomery, The University of Alabama, University of Alabama at Birmingham, University of Alabama in Huntsville, University of Montevallo, University of North Alabama, University of South Alabama.
10. Ibid., B10.

APPENDIX A
SURVEY


GENERAL INFORMATION

1. Does the library have/provide services and/or equipment designed for persons with disabilities?
   ___ Yes ___ No

2. In your opinion, has the use of the library by patrons with disabilities increased in the past five years?
   ___ Yes ___ No
Serving the Needs of Patrons with Disabilities

If YES, why do you think that this has happened? (Use back of sheet, if necessary.)

- Increased enrollment of students with disabilities
- Library providing more services; also better promotion of services
- Improved services on campus encourages more students to attend and to identify themselves
- University actively recruiting; outreach service
- Universitywide promotion and awareness of services
- Changing attitudes of persons with disabilities; more independent; greater awareness of legal rights
- Mainstreaming resulting in more students academically prepared to attend university
- Increased publicity and use of library in general
- More (and better) adaptive equipment available

3. Does the library have a checklist for building accessibility? Please provide a copy of the checklist.
   - Yes __ No __

4. Indicate areas in which the library has made improvements in library accessibility for patrons with disabilities during the past five years. (Check all that apply.)
   - Elimination of physical barriers
   - Addition of specialized equipment/adaptive technologies
   - Adding specialized library services
   - Staff devoted to providing library service for patrons with disabilities
   - Other (please explain)

5. Which disabilities are specifically addressed through specialized library services? (Check all that apply.)
   - Blind and visually impaired
   - Deaf and hearing impaired
   - Learning disabled
   - Physically impaired
   - Other (please specify)

MANAGEMENT AND TRAINING

6. With which other units on campus does the library cooperate or coordinate in providing specialized services? (Check all that apply.)
   - Office for Disabled Students
   - Student Services
   - Computer Center
   - Counseling Center
   - Learning Center
   - Not applicable
   - Student Government
   - Other (please specify)

7. What is/are the source(s) of funding for providing special library services for patrons with disabilities? (Check all that apply.)
   - Library budget
   - Other campus office
   - Office for Disabled Students
   - Office of Student Affairs
   - Physical Plant
   - Office of Equal Opportunity
   - Gifts/endowments
   - Grant(s)
   - Agency
   - Other (please specify)
8. Has the library completed cost analyses for providing specialized services? If budgetary documents are available, please provide copies.
   ___ Yes ___ No

9. Has the library prepared planning documents, project reports, or lists of recommendations concerning library services for patrons with disabilities? (Please provide a copy of these documents.)
   ___ Yes ___ No

10. Is the library (or any other unit on campus) taking steps to heighten awareness among library faculty and staff of the special needs of library patrons with disabilities? (Include sample materials and/or other information.)
    ___ Yes ___ No

11. Does the library (or any other unit on campus) provide the staff with specific instructions for assisting patrons with disabilities in the event of an emergency? (Please provide copy of instructions.)
    ___ Yes ___ No

12. Who conducts training for library staff in providing specialized services and in the use of equipment designed for use by persons with disabilities? (Check all that apply.)
    ___ Librarians
    ___ Disabled Students Office
    ___ Vendors
    ___ Persons with disabilities
    ___ Vocational rehabilitation
    ___ No training provided at this time
    ___ Other

13. Who attends these training sessions? (Check all that apply.)
    ___ Circulation Department
    ___ Reference Department
    ___ Librarians in all public service areas
    ___ Support staff in all public service areas
    ___ Patrons with disabilities
    ___ Student assistants
    ___ Other

14. Does the library have a librarian or staff member who coordinates library services for patrons with disabilities? Please provide a position description.
    ___ Yes ___ No

15. If yes, indicate the amount of time this employee devotes to this responsibility:
    ___ Full-time
    ___ Half-time
    ___ Other

SPACE FOR SPECIALIZED LIBRARY SERVICES

16. What space does the library set aside specifically for library services for those with disabilities? Please provide floor diagrams showing square footage and placement of furnishing and equipment.
    ___ Separate room(s)
    ___ Scattered individual workstations
    ___ Dedicated space within a larger room
    ___ None (please skip to question 20)
17. What is the location of the room/space for specialized library services?
   ___ Main library
   ___ Branch library
   ___ All libraries

18. What are the hours of operation for this area? (Check all that apply.)
   ___ Same hours of operation as the library
   ___ Monday-Friday, business hours
   ___ Monday-Friday, evenings
   ___ Evenings
   ___ Other

19. Who provides assistance for patrons using space set aside for patrons with disabilities?

SERVICES

20. Does the library have written policies for providing library services for the disabled? Please provide a copy of these policies.
   ___ Yes ___ No ___ Other

21. Have the policies for providing services for library patrons with disabilities been revised in the past five years?
   ___ Yes ___ No

   If yes, in what way have the policies been changed?

22. Does the library provide for patrons a statement on and/or a description of specialized library services available in the library? Please provide a copy of such documents.
   ___ Yes ___ No

23. Which of the following library services for persons with disabilities are provided by the library? (Check all that apply.)
   ___ Paging of materials from the stacks
   ___ Looking up material in library catalog
   ___ Photocopy service
   ___ Accessible public telephones
   ___ Telephone renewals
   ___ Accessible photocopiers
   ___ Telephone requests
   ___ Specialized bibliographic instruction
   ___ Referral services
   ___ Delivery service
   ___ Extended loan periods
   ___ Reading to the blind
   ___ Recording of textbooks or other reading materials
   ___ Giving examinations
   ___ Signing with the deaf/hearing impaired
   ___ Other

24. Is the library’s online catalog equipped with:
   Print enlargement? ___ Yes ___ No
   In all libraries?
   Speech synthesis? ___ Yes ___ No
   In all libraries?
   Other
25. Do the blind library patrons at your institution use Braille?

26. In what ways does the library communicate with patrons with disabilities concerning ways the library might be more effective in serving their informational needs? (Check all that apply.)
   - Consultations with individuals with disabilities
   - Suggestion box
   - Advisory committee (staff and disabled)
   - Survey
   - Workshops
   - Consultation with Office for Disabled Students
   - Consultation with other campus offices
   - Written correspondence with those who self-identify
   - Consultations with vendors
   - Consultations with professional ADA consultants

27. What specialized equipment or adaptive technologies are available in the library for use by patrons with disabilities? How often is this equipment used? (Check all that apply.) Please include a list of specialized equipment/adaptive technologies (including manufacturer) available in the library.

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<th>Equipment/Technology</th>
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GENERAL COMMENTS

Please include any additional comments about library service for persons with disabilities on the back of this sheet.
Collection Development Policies in the Information Age
Dan C. Hazen

Collection development policies as traditionally conceived are static, reactive, and of little practical utility. They have outlived their purpose. Research librarians will better serve both themselves and their users by devising flexible guides to all the information associated with particular fields of study. Local collections will comprise a part of these "information maps," but only within the context of a richer and less bounded universe of scholarly resources.

Library orthodoxy has congealed around a number of purportedly self-evident truths, among them a universal need for collection development policies. These documents, according to the literature, are indispensable antecedents to competent selection. They both explain the library to and defend it from its patrons. They provide a conceptual framework for budget requests. And they are essential for cooperative collection development and resource sharing.

As scholarship, information resources, and libraries continue to change, these assertions may no longer hold. A critical reexamination of the role of collection development policy is very much in order. The purpose of this essay is to stimulate discussion on whether and how we should codify our endeavor.

MONUMENTS OF DEFENSIVENESS

Collection development policies keep us out of trouble with our users. Public libraries use them in order to reject inflammatory or sectarian materials on the one hand, and to retain potentially offensive items on the other. Academic libraries most frequently invoke these policies when the real issue is money. Research libraries frame their mission in terms of service to the campus community of students and scholars. Yet we respond to new demands, most commonly from new academic programs or faculty members, by citing our collections policy to ratify the status quo. The economic dilemmas may be real, but our mandate is clear. Policy-based decisions to exclude ephemera, nonprint formats, or any other category of research resources similarly establish arbitrary boundaries that in fact reflect fiscal or (even less defensibly) procedural necessities. We use collection development policies to defend our frontiers.

ENSHRINEMENTS OF OBSOLESCENCE

Formulating a collection development policy requires librarians first to categorize the world. Collections policies thus divide information resources by subject, format, user level, language, size, durability, and so on. Having established pigeonholes for the entire universe of recorded knowledge, librarians can—in theory—decide what to do with specific items by matching each to its slot and then checking whether the category is

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marked for inclusion or exclusion. A rigid and comprehensive structure of categories ensures that the policy will work.

The ambition is of course illusory. Our best efforts to produce meaningful sets of pigeonholes have fallen well short of representing all recorded knowledge. As the Research Libraries Group Conspectus demonstrates, even these partial syntheses have collapsed of their own weight. And any such system is of little utility for the selectors who must negotiate an endless stream of new materials, often described only minimally and increasingly crossing traditional boundaries of format and discipline.

Collection development policies reify scholarly distinctions that no longer carry meaning.

The search for airtight taxonomies is flawed because neither library resources nor scholarship pay them heed. The conceptual structure of nineteenth-century scholarship might have conformed to clear subject fields and canonical sources. Interdisciplinary, multimedia research is the byword of our postmodern academy, and both scholars and the materials they produce routinely cross traditional boundaries. Collection development policies reify scholarly distinctions that no longer carry meaning. They are exercises in obsolescence that cater to nostalgic longings for order, precision, and prescription.

CODIFICATIONS OF DECLINE

Libraries typically hang their arguments for materials budgets on the need to sustain acquisitions at the levels delineated in collection development policies. Yet most libraries’ collection budgets are either lagging inflation or in actual decline. Wish as we may, librarians cannot make documents descriptive of internal practice into binding guides for the institution at large: our paper pronouncements are irrelevant. And so we ceaselessly debate about whether and how to adjust our collection development policies. When we recast them to reflect (ever-diminishing) reality, are we simply acting responsibly by providing the information that our users and potential cooperative partners require? Or are we capitulating before a philistine academic bureaucracy? Whichever the conclusion, our policies codify decline.

SELECTION IN THE POSTMODERN ACADEMY, CODIFICATION IN THE VIRTUAL WORLD

Traditional collection development policies will not meet our needs. More flexible documents, on the other hand, could be useful to users, librarians, and even administrators.

Libraries and their collections address the increasingly complicated needs of users both current and future. The essential resources are less and less limited to local holdings and represent increasingly varied formats. Today’s students and scholars routinely consult traditional books and journals. They rely on such nonprint media as sound and video recordings. Collections of ephemera and archival sources are likewise important, along with museum holdings and materials in foreign repositories. And electronic information is ever more prevalent, both in portable formats and as online products.

Researchers must master card catalogs, online catalogs, bibliographic databases, printed indexes and bibliographies, electronic indexes and bibliographies, guides to foreign repositories, descriptions of nonprint and media collections whether held within or outside libraries, and the full range of Internet resources and protocols. Scholars also rely on direct contact with their peers. The panorama is confusing and seems destined to become even more complex. Nonetheless, and as in the past, part of the library’s job is to make sense of this abundance.

Discipline-specific resource maps, encompassing the full range of information resources appropriate to each field and using electronic technology to ensure flexible responses, could provide a solu-
tion. Hypertext information maps, for example, might offer multiple pathways through all of a field’s information resources while accommodating different kinds of inquiries and different sorts of users. Those using these hypertext systems would create their own tunnels and paths. Researchers could, for instance, search for recent, locally held books and articles on street children in Recife, Brazil; broaden their inquiry to cover the full range of print and nonprint materials on family life in Brazil; move on to English-language bibliographies and Internet discussion groups concerned with social conditions in Latin America as a whole; and finally consider videos and films on children in Mexico City.

This condensed example illustrates some of the dimensions of inquiry that the proposed “hypertext information maps” might accommodate. One starting point would be “subject access.” Researchers often approach bibliographic tools with a topic in mind; so might they approach these hypertext maps to information of all types and at all locations. Users could also focus on the different formats of information, limiting their inquiries to any desired combination of books, journal articles, sound recordings, electronic files, archival collections, museum holdings, specialized research centers, personal contacts, and so on. The location of resources would provide another organizing principle. A fourth approach could address different levels of comprehensiveness or user sophistication. A novice in some field might limit his or her investigation to recent reference books in English; a specialist might seek all available materials regardless of language, type, location, date, or format. The dimensions of these information maps would in some ways resemble, on a scale encompassing all sources and formats, the “faceted” classification systems that have attempted to capture the multiple dimensions of single publications within a manual environment.

Flexible descriptions that encompass all formats of information and resources both local and remote will require continuous adjustment as each field’s methods and materials evolve. Libraries will therefore have to focus continuously on users’ priorities and needs. Strategies for hard copy acquisitions will follow and derive from these general analyses.

Flexible descriptions that encompass all formats of information, and resources both local and remote will require continuous adjustment as each field’s methods and materials evolve.

The library can solidify its own sense of purpose, and also point the campus toward the future, by recasting its documentation in terms of all the research resources associated with its users and the fields they represent. Insisting on inflexible, site-specific codifications for our hard copy acquisitions will only mire us in the past.

REFERENCES AND NOTES

1. The literature on collection development policies is massive. See the Collection Development Policies Committee of the Collection Development and Evaluation Section, RASD, “The Relevance of Collection Development Policies: Definition, Necessity, and Applications,” RQ 33 (Fall, 1993), 65–74, for a good recent summary that includes analysis, policymaking advice, and a basic bibliography.

2. The task is extremely complex. Making sense of apparent chaos almost inevitably involves categorization—the utilization of pigeonholes. A great deal thus depends on delineating imaginative categories and flexible uses. Hypertext pathways, moreover, may reflect only their creators’ notion of plausible connections: their open-endedness can be more apparent than real. Flexibility is difficult to attain.
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Customer Expectations: Concepts and Reality for Academic Library Services

Christopher Millson-Martula and Vanaja Menon

As academic libraries continue to evolve as service organizations, they should focus on their users as customers and develop programs of service that meet or exceed user expectations. The overriding goal will become customer satisfaction. This article deals with the elements that determine expectations as well as the existing gaps that relate to customer expectations and service performance. Possible strategies for narrowing these gaps include enhanced communication between the library and its customers and improved management.

Over the past two decades technological innovations have provided libraries with the means to not only meet but also surpass customer needs and expectations. Initially, technology involved the automation of library staff functions, and customers experienced few benefits directly. With the development of the online catalog, customers experienced a faster, easier, and more efficient method of searching. As online systems became commonplace, librarians began to realize the new and exciting possibilities to which increased automation can lead. The flexibility of electronic data led to shared catalogs, dial access, and remote charging, thereby allowing customers to search multiple catalogs remotely, even from the comfort of their own homes or offices. In addition, the use of telefax machines has dramatically reduced the turnaround time for the remote processing of photocopy requests. Innovations such as full-text databases and document delivery systems are increasing. Consequently, students and faculty have experienced directly the benefits of technology through enhanced student performance and increased faculty productivity.

However, while these and other advances successfully have increased customer satisfaction, they have likewise raised customer expectations. As a result, academic libraries should be searching constantly for new ways to keep up with those expectations. Multimedia products and an explosion of networked information add a whole new level of complexity for information seekers and providers alike. Unfortunately, this complexity, coupled with today's financial constraints, often makes it difficult to decide which products and services are best for the library. Blindly embracing sophisticated technology does not necessarily translate into optimal or even enhanced service. Rather, academic librarians should implement technology within the context of a grand service vision that library staff and customers
have jointly established on the basis of customer input and feedback. It is crucial for academic librarians not to forget the customers for whom these services exist.

CUSTOMERS AND LIBRARY SERVICES

Charles Osburn describes the situation quite succinctly when he says that library researchers (and libraries) have “not focused so much on the consumer’s goals, methods, habits, and motivations as we have on the efficiency of techniques to control and retrieve to our own professional satisfaction.”¹ Likewise, Douglas Zweizig states explicitly that the majority of library research essentially has ignored the user.² This article will attempt to assist library staff as they transform libraries into service organizations. To do this successfully, it is necessary to not only focus on library users as mere customers but also to provide a program of services that will either meet or exceed user expectations.

In almost all instances, libraries have possessed a long and commendable record as service organizations. Libraries continuously implement new programs and services with the hope that these may succeed in satisfying expressed or unexpressed needs of some group or groups of users. Many libraries, particularly academic libraries, have established liaison outreach programs in an attempt to get to know users better while also providing them with a greater amount of information about library programs and services on a more consistent basis. In all of these cases, the goal has been to provide relevant and high-quality services to library users. However, an element of quality service is still absent. That element is the incorporation of users’ personal needs and expectations into the development of the service. This requires librarians to establish an ongoing relationship with their customers in order to learn what their needs and expectations are. Staff become active listeners who then are able to process customer input on a continuous basis.

CUSTOMER NEEDS AND BEHAVIORS

Over the years, library staffs have identified user needs and their corresponding information-seeking behavior. Public librarians and information scientists or librarians working with scientists or other scholars, especially those librarians in the United Kingdom in the 1960s and 1970s, have played a leading role in this area. In addition, the Association of Research Libraries’ Office of Management Studies has fostered an interest in this area by exhorting academic librarians to make use of surveys and other methods that effectively can gauge user needs. While one goal of a user study is to identify user needs, an equally significant one is to eliminate or, at the very least, lessen any obstacles that may hinder users from satisfying their information needs. Russell Shank has advocated using scholars’ information needs and information-gathering behavior as the principal guide for determining the needs of the general populace of academic library users.³ However, since an academic library’s various constituencies possess differing needs and expectations, this could be quite inappropriate for graduate students in a research university or for undergraduates in a four-year or community college.

The continued success of a service organization such as an academic library depends upon the organization’s ability to adjust its products and services to correspond to user needs. Academic librarians need to realize that student and faculty needs do change. The change may not be radical or monumental. However, even in the case of subtle or evolutionary change, it remains incumbent for librarians to: (1) be aware that needs are changing; (2) understand the nature of the changes; and (3) realign or reconfigure services to ensure that they remain relevant to the recently developed needs. One such change in needs has involved a shift in user orientation from physical formats containing information to the information itself combined with access to it. Academic
libraries have responded favorably to this change by creating the collection development continuum of *just in time* and *just in case* as well as the broader concept of the virtual library in which users obtain information via electronic access and retrieval with little regard for the concept of ownership.

Let the authors now examine the concept of needs. Andrew Green, who provides an overview of user needs, maintains that a needs assessment should produce a less partial account of what a situation requires. This is so because needs generally should be more objective than wants or demands. Needs are elements that are instrumental. If their needs are not met, people may fail to attain a goal or an end state. Needs are likely to be at least partially based on reason or logic. Consequently, needs are usually contestable and can be debated or disputed. Lastly, needs are not always expressed because a person can legitimately need something without being aware of the need or desiring the needed item. When allocating library resources, Green thinks that the determining factor should be needs rather than wants or demands, if they can be ascertained.

In contrast, wants tend more to be superficial and instinctive. Accordingly, they cannot be disputed; only the individual in question can state what she or he wants. Likewise, a want can exist in an individual’s mind without being translated into a demand for a particular library service.

In conclusion, both Green and others such as Donald King and Vernon Palmour believe that librarians should think less of the need for discrete bits of information and more of information-seeking behavior that is intended to fulfill more fundamental needs. These needs in turn could be considered as user specifications: needs such as accessibility, turnaround time for information retrieval timeliness, relevance, accuracy, and precision. As Green suggests, another reason why it is prudent for academic libraries to focus on users is that doing so will enable libraries to direct attention to the prior needs that underlie the information needs themselves.

**THE CUSTOMER AS AN INDIVIDUAL**

As funding agencies require a greater degree of accountability by academic libraries and as users become more sophisticated and more demanding customers, academic libraries face the need to evaluate services in terms of their effectiveness in supporting the institutional mission. In virtually all cases, this mission cannot be supported without meeting the needs of library customers. Consequently, a direct causal relationship exists between an effective program of services and meeting customers’ information and other needs. Green adds that “a correct identification of needs is an essential preliminary to the devising of appropriate means to judge the effectiveness of a library or information service.” Others have supported this view as well. Philip Rzasa and Norman Baker believe that the primary goals of an academic library are to maximize user need satisfaction while simultaneously minimizing the amount of time and other costs that users must expend to have their needs met. Likewise, Robert Burns, in advocating library use as a performance measure, believes that while the key to high-quality service is users and their response, the library must view the user as an individual rather than a mere statistic. Lastly, Jeffrey Disend takes the broader view that evaluation should be linked to customers’ expectations in addition to their needs.

Clearly, academic libraries would do well to study in great detail the relationship that they have with their customers. In truly enhancing the efficiency of library services, total quality management takes into consideration customer needs and expectations. Total quality management has advanced many organizations, including libraries, light years forward in terms of enhancing the relationships they have with their customers as well as the services they provide. Academic librarians need to ensure that operations-focused activities do not
divert the emphasis away from library users as customers or consumers. One unintended effect that sometimes occurs has been to limit efforts to understand user needs and expectations. Thus, librarians must be careful to view and appreciate total quality management projects in a balanced perspective. The library will realize the full benefits of total quality management only if it employs the concept in concert with ongoing efforts to understand library users.

Total quality management has advanced many organizations, including libraries, light years forward in terms of enhancing the relationships they have with their customers as well as the services they provide.

Academic libraries, along with other libraries that have a relatively high degree of captive customers (that is, individuals who may possess few options for meeting their information-related needs), should make a special effort to understand their users. Whether using survey instruments, interviews, focus groups, or other assessment methods, academic librarians can gain insight into their customers' needs by understanding:

1. their overall attitudes;
2. the context or environment in which customers use library services; and
3. their perception of how library services are linked to other services. Thus, when a library is willing to learn extensively about its customers' needs and expectations, it can play an active role in shaping user behavior and expectations. As Adamson has pointed out, exceeding customer expectations can have a snowball effect leading to better impressions, higher expectations, and higher perceived value. This constitutes an especially significant payoff for academic libraries whose budgets have not fared well over the past few years or that have been forced to assess some type of student use fees to maintain a respectable level of services. Highly satisfied students and faculty may rally to support the library when academic administrators are forced to make significant budget cuts.

CUSTOMER EXPECTATIONS

To benefit from this payoff, academic libraries must be able to describe their operations with the following equation: service performance > expectations. The key term in this equation is expectations. According to a trio of researchers, Valarie Zeithaml, A. Parasuraman, and Leonard Berry, who are prominent in the field of customer expectations, expectations are the standards against which a firm's performance should be judged. Is there any reason why the same should not be true for academic libraries as not-for-profit service organizations?

Before embarking on a more extensive discussion of expectations, the authors would like to offer a definition so that there is a common understanding of what is involved. Expectations are assumptions about the likelihood of something occurring; coupled with these assumptions is the acknowledgment that the outcome may not be as expected. More concisely, expectations reflect anticipated performance.

Researchers in the field of customer expectations agree that, in most cases, customers hold expectations that can be considered quite basic. In general, customers expect a basic, solid performance and promises that are kept. Stated differently, customers desire a quality or accurate product or service provided in a friendly and courteous way.

A. Parasuraman et al. place customer service expectations into two categories. The first deals with service as an end result, outcome, or product. This dimension involves reliability, or the ability to perform a promised service both dependably and accurately. The researchers believe that customer expectations cannot be met if this all-important dimension is lacking. Four other dimensions comprise the second category, that of service process, and these dimensions are important in exceeding customer expectations. First among these is assur-
ance—the ability of employees to convey a high degree of trust and confidence based on the employees' knowledge and courtesy. Next is responsiveness. Expectations are likely to be exceeded if employees consistently demonstrate a willingness to help customers and provide prompt service. Related to responsiveness is empathy. Employees will exceed their customers' expectations when they demonstrate empathy by providing caring individualized attention to customers. Last is a group of tangibles consisting of elements such as the appearance of physical facilities, the amount of equipment and personnel, and the degree of communication that exists between the organization and its customers.

For each dimension of expectations, a customer is likely to establish two service levels. The first is the desired service level, which is defined as what the customer hopes to receive, a blend of what the customer believes can and should be. The other level is the adequate service level, which consists of the service that a customer will find acceptable. A customer's zone of tolerance falls between these two levels. Quite logically, service expectations are likely to increase with a corresponding increase in a customer's experience. When a customer either lacks many options or does not possess a clear understanding of what options exist, expectations are likely to be appreciably lower.

If academic libraries are to meet and exceed customer expectations more successfully, they need to know what elements determine expectations. Zeithaml et al. offer four key factors: (1) what customers hear from other customers; (2) individual characteristics and circumstances relating to personal needs; (3) experience with using a service; and (4) communications from service providers to customers. The third factor is multifaceted in that customers will not base their expectations solely on experience with one academic library, but will also consider experiences with other libraries as well as providers of other types of services.

A commonly held belief is that the customer is always right. However, the opposite is more likely the case; customers often hold unrealistic expectations. Cross-service comparison, that is, comparing one service provider with providers of other types of services, can often account for customers' unrealistic expectations. If we apply Kathleen Sanford's concepts to libraries, customers may not always understand the policies and procedures under which a library operates. Likewise, customers may not realize that such policies and procedures may be essential to the library's survival. Finally, certain policies and procedures may be required for reasons beyond the library's control. In any case, these situations can lead library customers to have unrealistic expectations, which, if not adjusted, will result in customer dissatisfaction. Therefore, it is incumbent upon academic libraries to do all within their power to minimize the occurrence of customer dissatisfaction based on unrealistic expectations.

Clearly, the library environment involves three interrelated elements: customer expectations, library performance, and customer satisfaction. What is central to all three is the customer, whether an individual consumer or a corporate customer. When undertaking research concerning customer expectations or satisfaction, evaluating the quality of services rendered, or implementing actions aimed at enhancing the level of customer satisfaction, academic librarians need to keep in mind that the key is focus. Academic librarians first must identify who their primary customers are. Then they can learn the needs and expectations of their customers as well as evaluate the level of customer satisfaction with library services.

CUSTOMER EXPECTATIONS, LIBRARY PERFORMANCE, AND CUSTOMER SATISFACTION

Virtually all academic librarians strive to provide their customers with a superior level of service. However, many fail to realize that it is impossible to do so without first comprehending what their customers' expectations truly are. This is because of the interrelatedness of the three elements mentioned above:
expectations, performance, and satisfaction. Customers' evaluations of library performance and their level of satisfaction with that performance will be based largely on a comparison of expectations with perceptions of the service provided. Many academic libraries have both individual consumers (students, faculty, administrators, and staff) as well as corporate bodies as customers. Research has indicated that minimal differences exist between expectations and perceptions held by individual and corporate customers. Parasuraman et al. conducted sixteen focus group interviews in five cities. They interviewed both individual and corporate customers of service providers in such diverse areas as insurance, business equipment repair, truck/tractor rental and leasing, auto repairs, and hotels. Their results indicated no significant differences based on the type of customer.

While it is essential for academic libraries to meet customer expectations, this usually involves no more than the mere provision of the right product or service, whether reference and information services, bibliographic instruction, interlibrary loan/document delivery, or a relevant collection of materials. Instead, academic libraries should attempt to exceed the expectations of their customers. This often involves surprising or delighting their customers, doing the unexpected, or providing in a unique way something that their customers consider significant.

Let us now focus on customer satisfaction. Simply put, customer satisfaction represents the difference between what customers expect and what they get. While the level of satisfaction logically should be based on an objective evaluation of the service provided, that is not the case. Rather, satisfaction tends to be based on perceptions, which may not always be logical. It is these perceptions that also define exceptional service, and it should be remembered that the customer, not the library, is the arbiter of exceptional service.

Before examining in detail the gaps associated with customer satisfaction, academic librarians first need to understand the factors or antecedents responsible for customer expectations as manifested in desired and adequate service. Zeithaml et al. identify six antecedents of desired service and five for adequate service. When a customer either lacks many options or does not possess a clear understanding of what options exist, expectations are likely to be appreciably lower.

The principal factor responsible for defining desired service is what are known as enduring service intensifiers. Consisting of elements such as a personal service philosophy and service expectations that are either derived from or driven by another party, these intensifiers lead the customer to a heightened sensitivity to service. Their ultimate effect is to elevate the level of desired service. Joining these intensifiers are a customer's personal needs and explicit service promises or service-related statements that the library may have made to its customers. Not to be overlooked are implicit service promises that the library may have made—elements such as service price or tangibles associated with the service. The two remaining antecedents are: (1) word-of-mouth communication, or information about service performance that individuals have personally related to their friends, associates, or acquaintances; and (2) a customer's past experience with library performance.

One of the antecedents of adequate service is predicted service, that is, that level of service which customers believe they are likely to get. Other antecedents of adequate service include transitory service intensifiers, those temporary, short-term factors relating to a customer's situation, needs, or problems that influence a customer's expectations for adequate service. The presence of perceived service alternatives will likewise influence the level of adequate service. When a customer thinks that
service alternatives to one provider exist, the level of adequate service is likely to be higher than when the range of options is limited. Likewise, situational factors consisting of factors or circumstances beyond the control of the service provider will tend to depress the level of adequate service. The final antecedent involves customers' perception of the degree to which they directly influence the level of service provided. When customers believe that they exert some influence, the level of adequate service should rise.

A customer's degree of satisfaction with a service will evolve as the customer develops a relationship with the service provider. When a customer first establishes such a relationship or is dealing with a new product or service from a provider with whom a relationship already exists, actual performance, rather than expectations, should act as the primary determinant of satisfaction. At this point, the situation is somewhat tenuous because these early expectations are usually not held with a great deal of confidence. As a customer's experience with a service provider continues to grow and results in a substantial accumulation of past performance information, there should be a corresponding increase in both the accuracy and confidence of expectations. At some point, a rough equilibrium between expectations and performance perception should result as the two become virtually indistinguishable. With a continued increase in service experience and with the ongoing maturation of a service, customer expectations should become even stronger as does their effect on the level of customer satisfaction. Thus, as students and faculty develop greater experience with library services, it is more likely that not only will they become quite satisfied with those services but also that their level of satisfaction will increase progressively.

The relationship between customer expectations and perception of performance or level of satisfaction is multifaceted and complex. When performance falls within an acceptable range of expectation, expectations are likely to dominate the perceptions of satisfaction. Likewise, when the gap between expectations and performance is relatively small, a customer's perception of performance is likely to migrate toward the customer's expectations. On the other hand, when performance falls outside an acceptable range, a contrast occurs and perceived performance assumes primacy over expectations.

GAPS INVOLVING EXPECTATIONS, PERFORMANCE, AND SATISFACTION

Academic librarians should study the concept of disconfirmation, which represents the gap between customer expectations and service performance. Researchers have demonstrated that this gap is more responsible for the customer's level of satisfaction than the actual service performance itself. Thus, while academic librarians should continue to strive to provide the highest quality service possible, they should also be grounded in reality by acknowledging that the perception of the relationship between expectations and performance is most responsible for a customer's assessment of overall service quality.

Zeithaml et al. have conducted extensive research in this area, and they have identified four gaps:

- Between actual customer expectations and management's perception of customer expectations
- Between service quality specifications and management's perception of customer expectations
- Between service delivery and service quality specifications
- Between service delivery and external communications relating to it.

Let us now look at each gap in some detail, giving special attention to the factors responsible for each gap. A later sec-
tion will present some remedies for closing the gaps.

**GAP 1**

The first gap, between customer expectations and management's perception of those expectations, can be considered the most basic. If librarians inaccurately gauge the expectations of students or faculty, it becomes virtually impossible for performance to exceed true customer expectations, and it will be quite likely that the overall customer satisfaction level will be lowered. This gap can be described as stemming from a lack of appropriate interaction between librarians and students and faculty. While librarians generally may believe they know of their customers' expectations and opinions, they often lack specific data to support this belief.

This gap can be attributed to three principal factors: (1) lack of extensive marketing research addressing customer needs and expectations; (2) inadequate (whether lacking in quantity or frequency) upward communication from the front-line service providers at the circulation, information, reference, and other service desks to library administrators; and (3) too many levels of administrators separating the staff providing service from top administrators. For many academic libraries, especially college libraries, the organizational hierarchy is not so extensive as to be unduly weighty. However, there may be widespread reluctance to undertake, with some degree of frequency, major efforts at obtaining input from and information about student and faculty customers. Academic librarians frequently make the argument that customers will simply not tolerate surveys, interviews, focus groups, or other like demands upon their time. They also maintain that they already know what their customers need. Nevertheless, in an imperfect world, other service providers or producers of goods have benefitted considerably from major marketing research efforts, and there is no reason why the same should not be true for academic libraries. Concerning the second factor of upward communication, our experience has been that while service providers are often eager to forward customer input or customer-related information to top management, they too frequently have been given the message that such information is neither valued nor welcome.

**GAP 2**

The second gap technically is described as existing between service quality standards and management's perception of customer expectations. In layperson's terms, however, it is simply defined as the gap that results when an organization establishes the wrong service standards, that is, service standards that do not accurately or consistently reflect customer expectations. Zeithaml et al. cite four reasons for the second gap: (1) inadequate commitment to service quality; (2) a lack of perception of feasibility; (3) the infrequent or too limited use of technology to standardize various service tasks so that library staff can guarantee to students and faculty that they will provide consistent quality service; and (4) the absence of goals that are directly related to or based on customer standards and expectations.

Academic librarians have long expressed at least a verbal commitment to service quality. However, each librarian needs to reflect upon the degree to which this verbal commitment is actually translated into actions or behaviors. Likewise, academic libraries, especially research libraries, have played a leadership role in using technology to standardize service tasks. Nevertheless, librarians need to remember the customer and service elements when implementing technology initiatives. Significant service enhancements that result from the total quality management initiatives currently so prevalent among academic libraries definitely should improve this situation. These projects should also improve academic librarians' records of setting goals that are customer-oriented.

**GAP 3**

Total quality management also should be beneficial for narrowing the gap be-
tween actual service delivery and service specifications or standards. This gap relates most directly to library staff as service providers—their training, motivation, abilities, and attitudes. A number of factors could be responsible for this gap. Key among them are: (1) employee role ambiguity which includes uncertainty about what library supervisors or managers expect from staff in direct service positions as well as a lack of information needed to perform the job adequately; (2) a poor employee job fit because of a lack of training or skills needed to perform the job combined with the use of inappropriate tools or technology; (3) a major role conflict for staff who perceive that they are unable to satisfy all of the demands of their internal and external customers; and (4) a supervisory or management system that focuses solely on output, that allows staff few options or too little flexibility in resolving service problems, and that does not convey the sense that management truly cares about staff.

There is generally ample room for academic library management to improve upon situations characterized by views of staff as tools or agents of production who cannot be entrusted with a reasonable degree of decision-making responsibility and authority. Likewise, library managers need to ensure that they provide staff with the full range of resources, including the necessary training, that staff need to carry out their responsibilities and provide the level of service that students and faculty have a right to expect.

GAP 4

The last gap, officially described as the gap between service delivery and external communications relating to it, can be rephrased as the situation that exists when promises don't match delivery. Factors contributing to this gap include a propensity to overpromise in terms of service delivery and inadequate horizontal communication. A prime example of the former factor involves automated, integrated systems featuring online public access catalogs. Academic librarians quite understandably promote the numerous benefits of such systems to students, faculty, and other library customers. Yet, especially when these systems are first brought up, their operational failure because of circumstances generally beyond the control of library staff prevents libraries from delivering what has been promised, whether explicitly or implicitly. Likewise, horizontal communication between library staff and customers can also impede service delivery at a level equal to that which had been promised. This situation is often manifested when staff provide customers with misinformation about the standards relating to the delivery of a particular service. One such instance exists when staff knowingly provide customers with a too idealistic or optimistic estimate of the time required for completion of a document delivery or interlibrary loan transaction. Such information tends to raise expectations on the part of students or faculty, which often are not met when the delay exceeds the time initially projected.

STRATEGIES FOR ENHANCING CUSTOMER SATISFACTION

Having learned the nature of these four gaps and the principal factors responsible for them, academic library staff can then explore what strategies can be implemented to narrow these gaps. While the idealistic goal would be to eliminate them, a more realistic and feasible one would be to reduce the size of the gaps.

While there are definitely specific actions that academic librarians should take to narrow the gaps between expectations and service quality, it will be necessary to adopt a major ideological or attitudinal change. Academic librarians need not be hesitant to admit that it is essential to implement a proactive stance employing many of the marketing and research techniques of for-profit firms.

Before implementing such techniques, however, academic librarians need to ensure that they have established a vision of service with which all staff can identify and which serves as the driving force
behind all library programs and services. Employees in the public sector or not-for-profit settings need to believe that what they do and how they perform matter considerably. Instead of merely representing the organization, they are the organization. Not-for-profit employees, such as academic librarians, must believe that they can make a difference.

Although students and faculty are not required to pay directly for most of the library services that they use, library staff must realize that staff are responsible for the service quality and response time that the library provides. Thus, the element of accountability is introduced as it relates to the nonmone
tary prices that library customers must pay for services.

Over ten years ago Russell Shank advocated that academic librarians adopt a cardinal rule of marketing: don't simply ask customers to identify their needs or wants but also offer a full menu of products and services that provide customers with alternatives from which they can choose. Put another way, academic librarians may need to tell customers what they ought to expect from the library. This relates to the practice, which is widespread in consumer industries, of actually managing expectations to enhance perceptions of service. Zeithaml et al. state:

A major premise of our research has been that consumers' perceptions of service quality can be influenced either by raising consumers' perceptions or by lowering expectations. Managing customers' expectations, especially those created by the company itself through external communications and price, is an essential part of a strategy to attain perceived quality service.

While the entire issue of meeting customer expectations clearly involves aggressively offering programs and services, there also exists a reactive element of identifying those expectations. To identify expectations successfully, academic librarians must demonstrate the innovation needed to identify or create new products or services that address students' and faculty members' previously unmet or even sometimes unrecognized needs.

This leads us to the two major areas in which academic librarians need to act: customer relations and management. No academic library will enhance its success in meeting student and faculty expectations without first establishing an ongoing and major relationship with those customers.

Joan Uhlenberg states that the only way to advance in either meeting or exceeding customer expectations is to gain an in-depth understanding of customers and their behavioral needs. Before getting closer to customers, however, librarians first need to identify their customers (which should not be too difficult for most academic librarians) and learn how they use library services. In addition, librarians should encourage students and faculty to define clearly their service requirements. Certainly, the library's overall capabilities together with librarians' commitments to provide new and creative levels of products or services are key elements. Yet a superior understanding of customers is what Uhlenberg considers most critical.

When an academic library has developed a genuine customer relationship with students and faculty, a likely result is a greater level of tolerance on the part of library customers coupled with a narrowing of the gap between customer expectations and the level of library services provided. A requisite for such a relationship is for academic librarians to learn considerably more about the students and faculty who constitute their primary customers. It is not sufficient simply to research what customers need or want or how they behave when seeking information. Rather, academic li-
brarians also need to understand how to make the best use of research to improve the quality of their service. Thus, academic librarians need to implement a management information initiative consisting of the identification of the data they need to make effective and efficient program/services decisions as well as the methods to be used for gathering and analyzing the relevant data. Following that, they must make a commitment to actually use the data when making a decision rather than simply burying the data in files or reports.

Without effective communications, customers are free to form their own expectations, which may or may not be realistic. Unmet expectations not only cause dissatisfaction but also erode trust. A successful relationship between academic librarians and their customers that is based upon open, regular, two-way communication includes trust as a key element. This enables librarians to effectively address customer expectations, to the mutual benefit of both customers and the library.

A principal approach to both earning trust and dealing with expectations is to manage promises. Librarians consistently must present honest and reliable messages about what they can and cannot do. It is essential that librarians not give students and faculty unrealistic expectations and then fail to meet them. Academic librarians must first determine what is possible in the area of service delivery, communicate that service message to students and faculty, and lastly deliver the service as promised.

It is not sufficient to simply provide information about the library’s products and services. Rather, it is necessary to define the library’s products and services and to show students and faculty what benefits they get from using the library. Moreover, academic librarians should seriously consider offering a multitiered structure of products and services. At one end would be a quicker, more generic level of service provided at the information desk staffed by generalist librarians and library assistants. The other end of the spectrum would be characterized by highly specialized in-depth reference or research support services provided by subject specialists on an appointment basis.

If students and faculty hold unrealistic expectations of librarians and library services, it may be because of a comparison they have made with providers of other types of services. Therefore, a comprehensive information program relating to products and services should alleviate this problem considerably. While such a program should greatly enhance the knowledge base of students and faculty, librarians ought to consider a formal education program in addition to a program of bibliographic instruction. Thus, academic librarians should educate students and faculty about when they are likely to need the library’s products and services as well as how they can be used most effectively. Not to be excluded is a description of the service delivery process, providing an appropriate and not overwhelming amount of information that explains the reasons for policies or procedures that could frustrate students and faculty. Along with an explanation of the process, customers likewise need to know what is expected of them in service delivery transactions.

STRATEGIES FOR ENHANCED COMMUNICATION

Let us now turn to specific ways in which academic librarians can either initially establish or further enhance their communications with students and faculty. Library staff who occupy prime public contact positions are key players in establishing more effective communications between the library and its customers. These staff members can serve as essential conduits of information in either direction, and they would do well to record customer compliments, complaints, concerns, needs, and expectations, at least on a periodic basis. From their vantage point, these staff can act as both extensions of their customers and advocates for customers’ needs.

Academic librarians need to engage in a wide range of market research activities that will help identify customer
needs and expectations. Focus groups have been shown effectively to provide insights and perceptions of service quality. When working with focus groups, academic librarians should attempt to include not only experienced and inexperienced users but also nonusers as well because the latter may have turned to alternate service providers. Other means include one-on-one interviews with customers, questionnaires, and complaints or compliments logs. One area in which most academic librarians could register improvement involves the strategic use of complaints. While it is easy to acknowledge and respond to customer complaints, how often are the situations identified in complaints analyzed with the aim of instituting improvements? Complaints can serve as an inexpensive and continuous source of adjustment to the service delivery process, and they give top managers a chance to hear complaints directly from customers. British Airways not only established customer complaint booths at its Heathrow Airport hub but customers also have the opportunity to record their complaints on video. However, complaints should be placed in the proper perspective. Zeithaml et al. report that less than 5 percent of customers with service delivery problems formally register complaints with the service providers.26

Academic librarians have made frequent use of survey instruments to obtain customer input. However, the definition of customer should be expanded to include not only students and faculty but also the library staff, who, as internal customers, also receive service from their colleagues. Surveys obviously should attempt to measure customers' overall satisfaction. Loews Hotels currently uses a customer satisfaction survey that is centered exclusively on customer expectations. More specifically, surveys should focus on staff courtesy and competence. In addition, libraries should give more attention to tracking customer satisfaction with individual service transactions by surveying customers immediately after the completion of the transaction.

Finally, most academic librarians have considerable experience with library committees as conduits of information. To address customer needs, wants, and expectations more adequately, librarians should consider the creation of customer panels representing segments of customers. The key here is to view customers as forming segments based upon their differing needs and situations.

Perhaps most significant is the need not only to establish but also to maintain daily contact with a changing segment of a library's customer population. In smaller academic libraries, most staff are in direct contact with a significant percentage of their customers on a daily basis. Thus, staff should take advantage of this highly favorable situation by focusing on and improving their listening and general communication skills. A one-day staff development workshop dealing with this area could be extremely beneficial to customers, staff, and the library itself.

**STRATEGIES FOR ENHANCED MANAGEMENT**

In conjunction with the development of ongoing relationships with their students and faculty, academic librarians should also undertake several new initiatives in the area of management or administration. In this area, librarians have greater control over the key relevant factors; as a result, they are better able to produce significant results. Key areas on which librarians should focus include service quality, management systems, decision making and supervision, and staff interpersonal relations.

While technology will remain central to academic library operations, librarians must also direct considerable attention toward the concept of service quality. Basically, academic librarians will need to undertake a comprehensive self-examination to ensure that their service delivery systems coincide with and are appropriate to students' and faculty members' expectations and needs. The result likely will be a realignment of policies and management systems aimed to reinforce service quality. As a part of
this, librarians will clarify customer service priorities (based upon the results of customer research), establish more convincingly the idea of the library's accountability to students and faculty among other constituencies, promote calculated risk taking, and eliminate superfluous checks and balances.

Hearing complaints and other input directly from customers provides library managers with a more compelling reason to work with other staff for the modification of the service delivery process.

Consequently, librarians will be engaged in the rather uncommon task of setting service priorities and attainable service quality targets. Accompanying this will be a redeployment of resources after customers have identified the varying degrees of importance they attach to the services offered by the librarians. Thus, library staff not only will see their work responsibilities redesigned as tasks that add no value for the customer are eliminated but they also will participate in a performance evaluation process that is directly linked to service quality. Finally, the academic library that wishes to remain a viable provider of services to students and faculty will need to completely integrate its services. This can be accomplished by physically locating them together to enhance communication with and understanding for customers who then will experience reduced travel times and distances when using services that are related. Librarians could consider the creation of a single service point for reference and information services (without regard for material format) and interlibrary loan/document delivery. While staff who have specialized expertise in some of these areas would continue to work, the customer would perceive a seamless provision of service based on fewer divisions.

As librarians in large academic libraries conduct their self-study of management systems, many will find that organizational structures may be sufficiently complex and bureaucratic to impede the provision of quality services. One manifestation of this problem is an excessively high number of staff with no direct contact with students, faculty, and other customers. In addition, too many levels of management may inhibit both upward and downward communication between managers and service personnel. Particular attention should be given to either the reconfiguration or elimination of these nonservice positions. Likewise, top managers need to ensure that staff in public contact positions forward customer input to managers. In addition, those managers should adopt a practice common to executives in other service industries such as retailing and lodging—periodically spending time in positions that provide direct contact with the public. Hearing complaints and other input directly from customers provides library managers with a more compelling reason to work with other staff for the modification of the service delivery process.

Academic libraries are not appreciably different from the majority of service or manufacturing organizations often characterized by a rather rigid hierarchical structure for decision making. Typical environments involve one or more managers who make policy or procedure decisions, with or without input from staff in key public contact positions, and who then direct the staff having responsibility for implementing those policies or procedures.

Upper-level academic library managers need to confront the issue of control, and simultaneously realize that for today's leaders the element of control no longer occupies such a central position. Although it may be considered somewhat trite, the concept of staff empowerment definitely has merit and is worthy of consideration by most academic librarians. Perhaps the most extreme (in a positive sense) situation is one in which staff at the library's various service points possess the flexibility needed for resolving service problems that they encounter. Decision-making authority
should be pushed down to the lowest level possible so that staff involved in direct contact with customers possess the ability to make those decisions that directly affect their operations, their customers, and themselves. In many libraries, however, evolution rather than revolution may be more appropriate. In those instances, managers need to involve as many staff as possible, emphasize teamwork, and, in general, create a cooperative, nonconfrontational, participative work environment. Managers also need to provide proper training if this empowerment is to succeed.

Staff interpersonal relations is by no means the least significant area upon which academic librarians should focus in order to enhance customer satisfaction and meet customer expectations. In fact, this may be the most critical element if it is valid to assume that the overall work environment is largely responsible for the degree to which library staff attempt to promote customer satisfaction.

As mentioned earlier, no effort to enhance customer satisfaction will succeed unless students and faculty are convinced that library staff, as service providers, care about the quality of service they provide and the manner in which they do it. However, library staff will not demonstrate a high degree of commitment and caring unless they believe that library management cares about the staff as well. Simply put, customer satisfaction equals employee satisfaction. Library managers need to ensure that they provide staff with sufficient incentives to do things right and to promote customer satisfaction. In addition, managers must treat their colleagues with respect and trust, as human beings rather than mere agents employed in carrying out tasks. Lastly, each academic library that is successful in meeting customer expectations will recognize and reward people not only for their performance but also for identifying problems and developing solutions.

One other strategy that library managers should use involves human resources. Hiring officials should make a concerted effort to employ frontline staff who possess excellent interpersonal skills together with a strong service orientation. For continuing staff, managers have the obligation to provide the proper training that will result in enhanced service.

The shift from a perspective centered on either collections or systems to a focus on students and faculty as customers represents a formidable challenge for academic librarians and their colleagues. However, just as library staff have learned to cope with declining budgets and manipulate a dizzying amount of information resources and technology, so too can they successfully make the transition to establishing customer satisfaction as their overriding goal.

REFERENCES AND NOTES

6. Green, "What Do We Mean by User Needs?" 76.
7. Ibid.
20. Ibid., 275.

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Furthering Access to the World’s Information
CD-ROM Search Techniques of Novice End-Users: Is the English-as-a-Second-Language Student at a Disadvantage?

Diane DiMartino, William J. Ferns, and Sharon Swacker

This study compared the CD-ROM search techniques of 42 undergraduate native speakers (NS) of English with those of 34 undergraduate English-as-a-Second-Language (ESL) speakers in a controlled experiment. Native speakers were significantly more likely to use plural word forms when searching and to experiment with synonyms and alternative words to search for topics. Both groups of students underutilized basic search techniques, such as Boolean operations and indexing, and searched inefficiently. These findings suggest that bibliographic instruction targeted for ESL students can focus on techniques that circumvent difficulties with plurals and limited vocabulary. General bibliographic instruction in CD-ROM usage can address the other problems that ESL students share with novice users in general.

The introduction of computerized bibliographic retrieval systems into academic libraries has brought profound changes affecting library users, staff, service policies, and budgets. Newly empowered end-users can access databases from within traditional library settings or from remote sites. This emerging body of diverse users is now accessing a widening variety of electronic databases. With this empowerment come new constraints—each particular database's interface design and help screens are constant for everyone, regardless of the user's research needs and skills.

The explosion of access to computerized retrieval coincides with the continuing increase of international students (students in the United States on visas) attending American institutions of higher education. While bachelor's degrees earned by American students increased by only 10 percent between 1977 and 1989, students here on visas earned 72 percent more degrees during that same time period. In addition to students on visas, the 1990 Census statistics for New York City, where this study took place, indicate a continued increase in the city's foreign-born population. In 41 percent of homes in New York City a language other than English is spoken; this represents a 19 percent increase since 1980. Baruch College of the City...
University of New York reflects the increasingly diverse population of a multicultural urban public institution of higher education. Within its population of 16,000 students, international students (on visas) make up 12 percent of the student body, and more than half of the 1991 and 1992 freshman classes come from homes where a language other than English is spoken. Four-fifths of the incoming freshmen come from families in which neither parent is a college graduate. These statistics suggest that students are entering college from a multitude of economic, social, cultural, and educational backgrounds, and some may have limited English proficiency (LEP).

Some search mechanisms, such as Boolean operations, proximity relationships, and word indexing, are basic tools in successful retrieval. Other search techniques rely much more on the user’s language skills. These include synonym searching, pluralization, compound words, and variant spellings. The extent of one’s vocabulary is a prime component in the process of preparing search strategies in text-based databases. With the increasing reliance on self-service databases, ESL students may be at a disadvantage in using information resources. By identifying specific problems that ESL students encounter, librarians can focus bibliographic instruction for them in these areas.

With the increasing reliance on self-service databases, ESL students may be at a disadvantage in using information resources.

This study was a simulation experiment comparing the search strategies of 76 novice users divided into native English speaking (NS) (N = 42) and English-as-a-Second Language (ESL) (N = 34) groups with particular attention to vocabulary-based strategies. The search topic replicated a typical research assignment given in a required speech or English course. The search results were analyzed for significant differences based on whether the user was a native English speaker or an ESL student. These differences in formulating CD-ROM searches could affect bibliographic and technical instruction for these groups of students.

LITERATURE REVIEW

While the language-diversified student body at Baruch is not unique to an urban, public campus, few studies exist in the literature that focus on the relationship of ESL to search strategy vocabulary, with particular emphasis on novice users. The literature in this broad area of CD-ROMs, English-as-a-Second-Language, and international students generally contains self-reported user surveys, samples of user populations with very diverse levels of skill, and reports of international students’ use of the academic library primarily focusing on cultural aspects.

The research literature investigating CD-ROM users and interface design supports what we know from years of experience in academic libraries. College students generally prefer to use CD-ROMs for speed and ease of use. A large percentage of users in self-reporting studies are satisfied with their search results, regardless of precision. Self-reported satisfaction with results is not an objective measure; user satisfaction does not have a high correlation with commonly accepted recall and precision evaluation measures nor with the quality of citations.

Human-computer interactions, system inefficiencies, and syntactic and semantic problems continue to exist in information retrieval. Additionally, other tasks, such as formulating search strategies with correct vocabulary and Boolean connectors, transferring/learning commands from one system to another, and understanding keyword capabilities present serious obstacles to users.

These studies offer important insights into the overall user population in regard to CD-ROM database searching. Nonetheless, we must consider specific campus populations and survey techniques before generalizing from the con-
elusions of these studies. These studies may not be representative of an urban, multicultural student population, nor do they differentiate the goals of the novice undergraduate searcher from those of the graduate student and academic researcher. Additionally, the survey studies utilize self-reporting instruments that measure only post hoc user attitudes and opinions. These surveys exercise little control over the type of search the user required, and there is typically no control data against which we can compare the results.  

Other studies that focus on novice users typically recruit subjects who are already enrolled in Information Science courses. Because these courses feature instruction and practice with computerized databases, the external validity of these studies is weak. The information science student may not be representative of the novice undergraduate user with no previous instruction.  

Issues relating to CD-ROM training and the needs of both graduate and undergraduate students have been documented. In a study exploring CD-ROM training needs, 89 inexperienced undergraduates attending bibliographic instruction classes at the University of Illinois' Champaign-Urbana campus rated one-to-one training as the most valuable form of instruction, especially with regard to the development of search strategy and Boolean logic. This is an unsurprising finding, but few institutions can afford such an approach. Elsewhere, the development and use of computer programs that teach the use of CD-ROM tools have been proposed, specifically because individualized instruction is labor-intensive. Despite vendors' claims of user-friendly systems and the self-reported user satisfaction with CD-ROMs, there is a consensus among information science professionals that relevance of citations and search speed improve with training.  

International and ESL students in the academic library have been the focus of considerable attention, mostly centered on language and cultural differences apparent at the reference desk or in a bibliographic instruction setting. Suggestions for improving service include greater sensitivity, alertness, empathy, and understanding of these differences by all library staff and faculty, library orientation in native languages, staff development workshops, translations of library procedures, rules, and terminology into students' native languages, and bibliographic instruction and orientation specifically for international graduate students. Nevertheless, little mention is made of ESL students' use of CD-ROMs, especially with regard to language facility (i.e., pluralization, synonyms, alternative spellings or compound words), use of the Boolean operators and and or, and general searching strategies and techniques. These skills are critical in retrieving information successfully from CD-ROMs.

**EXPERIMENTAL DESIGN**

The basic experiment compared the search techniques of a group of English-as-a-Second-Language (ESL) undergraduate users (N = 34) to the techniques used by a group of native English-speaking (NS) undergraduate users (N = 42). Search strategies and retrieval results were printed out and analyzed by all three authors using standardized measurements devised through pretesting.

**The Subjects**

All participants were undergraduate novice users enrolled in four sections of an introductory course in Business Computer Information Systems taught by one of the authors. Each student had limited online search retrieval experience using the Boolean and with Baruch's online public access catalog, CUNY+.  

The average age of the subjects was twenty-two years; 45 (59 percent) were female and 31 (41 percent) male. The participants reported little experience with CD-ROMs, with more than 65 percent having no previous experience. The ESL group and NS group were fairly evenly matched in terms of ages, gender, and previous CD-ROM experience (table 1). Additionally, the final grades from...
TABLE 1
DEMOGRAPHIC CHARACTERISTICS OF THE SUBJECTS

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Native Speakers</th>
<th>ESL Speakers</th>
<th>Pooled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample size</td>
<td>42</td>
<td>34</td>
<td>76</td>
</tr>
<tr>
<td>CIS course mean grade</td>
<td>86.0</td>
<td>84.7</td>
<td>85.4</td>
</tr>
<tr>
<td>CD-ROM experience</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean response</td>
<td>0.55</td>
<td>0.56</td>
<td>0.55</td>
</tr>
<tr>
<td>0 = never</td>
<td>29</td>
<td>21</td>
<td>50</td>
</tr>
<tr>
<td>1 = 1 or 2 times</td>
<td>7</td>
<td>8</td>
<td>15</td>
</tr>
<tr>
<td>2 = 3 to 5 times</td>
<td>2</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>3 = 6 or more times</td>
<td>4</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>ESL student’s native language</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spanish</td>
<td>11</td>
<td>32.4</td>
<td></td>
</tr>
<tr>
<td>Chinese/Korean/Japanese</td>
<td>13</td>
<td>38.2</td>
<td></td>
</tr>
<tr>
<td>European</td>
<td>5</td>
<td>14.7</td>
<td></td>
</tr>
<tr>
<td>Other Asian</td>
<td>5</td>
<td>14.7</td>
<td></td>
</tr>
</tbody>
</table>

Note: All percentages are columnwise.

the CIS course were compared to ensure that academic ability was not a confounding factor. Sixty-three percent were first- and second-year undergraduates. Sixty-seven percent of the two samples received their high school diplomas in this country; of those 21 percent were ESL students. Of the 34 students who indicated that English was not their first language, 13 (38 percent) spoke Chinese, Korean, or Japanese, 11 (32 percent) were Spanish-speaking, 5 (15 percent) spoke other European languages, and 5 (15 percent) spoke other Asian (e.g., Urdu, Vietnamese) languages.

The Search
The study took place at Baruch Library’s Graduate Business Resource Center, a small electronically based center where conditions were easily controlled. The subjects were instructed to search the topic “Who takes care of the children when the parent is at work?” in the journal database of SilverPlatter’s PsycLit. Written information was presented so that students would consider searching for abstracts including concepts such as day care or child care, and working mothers or working fathers. The experiment’s instructions excluded any hints which might lead the student to use a specific search technique with specific topics, such as the use of Boolean operators.

Several criteria led to the development of this search problem. The experiment’s search topic was representative of a typical essay assignment given to undergraduates. Second, the topic afforded opportunities to use Boolean operations with the intersection of some concepts (employment, child care, parenting) and the union of others (day care or child care). PsycLit provided some implicit intersection and union operations, but the subject could improve search effectiveness by using the Boolean operators and and or.

In an attempt to replicate the autonomous searching experiences one may encounter in a busy library, individual assistance was not offered. The subjects received the American Psychological Association’s PsycLIT Quick Reference Guide of June 1992, which is available to all users. Upon completion of the search, participants filled out questionnaires soliciting basic demographic information as well as language background and previous CD-ROM usage experience. This questionnaire was filled out.
afterward so that if a student realized
that the experiment was examining
searches based on language back­
ground, it would be too late for this re­
alization to affect those searches.

After data collection, the authors
evaluated the search histories and cita­
tions, using a carefully designed set of
measurements. Some of the major factors
analyzed included: (1) language-based
techniques such as plurals, synonyms, al­
ternative concepts for caretaker such as babysitter or grandparent, keywords, vari­
ant spellings, descriptors; (2) procedural
techniques such as correct and incorrect
employment of Boolean connectors with
vocabulary or previous search sets or
indexing; and (3) effectiveness and effi­
ciency measures, such as the ratio of the
relevant citations compared to total
number selected and the use of previous
search set numbers. The subjects' use of
the concepts of employment, parenting,
or child care in their searches received
particular scrutiny.

Selection of the Database

The subjects searched SilverPlatter’s
PsycLIT CD-ROM because this database
permitted several observations. It al­
lowed the examination of vocabulary us­
age in the context of a text-based database.
Recorded search histories provided data
for examining techniques such as plurali­
ation of keywords, Boolean operators,
proximity connectors, field searching,
truncation, and use of the thesaurus and
word index. Since some Asian languages
do not offer different words for singular
and plural meanings, the database’s ab­
sence of automatic pluralization proved
useful to this study.

Statistical Methods

Because the sample sizes of both
groups were greater than 30, parametric
two-sample testing was used in compar­
ing quantitative variables; chi-square
evaluations were used for categorical
data. A significance level of .05 was se­
lected. STATGRAPHICS Version 5.0 was
the statistical package used for the data
analyses.

ANALYSIS AND DISCUSSION

An examination of the search steps
indicated that many students in both
groups encountered similar difficulties
in searching effectively and efficiently.
Many basic features available in the
PsycLIT database were not used by these
novice searchers. Whereas some features
(permutated thesaurus, field searching)
may be too advanced for casual users,
other features such as Boolean operators,
search modification, and pluralization
remain essential elements of computer­
ized searching.

Search Results

Table 2 illustrates measures for the
search results. The measures fall into
two areas: the number of subsearches
(the individually searched terms or
phrases) performed and utilized in the
overall search statement; and the ratios
of the targeted search topics to the num­
ber of citations finally utilized.

<table>
<thead>
<tr>
<th>TABLE 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MEASURES OF SEARCH RESULTS</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>English Group</th>
<th>ESL Group</th>
<th>Pooled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>sd</td>
<td>Mean</td>
</tr>
<tr>
<td>Number of subsearches</td>
<td>10.14</td>
<td>9.57</td>
<td>7.82</td>
</tr>
<tr>
<td>Number of used subsearches</td>
<td>2.45</td>
<td>1.94</td>
<td>1.50</td>
</tr>
<tr>
<td>Ratios of topics-to-citations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of employment citations/</td>
<td>.67</td>
<td>.38</td>
<td>.59</td>
</tr>
<tr>
<td>all citations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of parenting citations/</td>
<td>.75</td>
<td>.35</td>
<td>.70</td>
</tr>
<tr>
<td>all citations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of childcare citations/</td>
<td>.76</td>
<td>.34</td>
<td>.68</td>
</tr>
<tr>
<td>all citations</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
There was no difference between the NS and ESL subjects in the total number of subsearches they performed for their entire searches. Native English-speaking users, however, selected their citations from a greater number of their subsearches ($M = 2.45$ subsearches) than did ESL students ($M = 1.5$ subsearches), $t = 2.63$, $p < .02$. It is possible that ESL students selected a lower number of subsearches because of language difficulties in interpreting the instructions or capabilities of the CD-ROM system.

The ratios for the citations relevant to specific search topics to the total number of selected citations were calculated. These measured the precision of the subjects' selected citations. Although the ESL students had lower ratios, the differences between the groups were not significant.

**Vocabulary-based Measures**

There were significant differences in techniques that related most directly to vocabulary skills. The findings are grouped in three areas.

**Use of Singular versus Plural Word Forms.** Native English-speaking users were significantly more likely to use plural word forms, $X^2 (1, N = 76) = 10.09$, $p < .002$, when searching (table 3). This increased the number of hits these subjects found for the search topic. Another aspect of this issue that showed a significant difference was the dangling singular. This term refers to a subject's use of a singular term without using the corresponding plural form in another subsearch, thus limiting search results. On the "parenting" search term that the majority of subjects used—mother/mothers—the ESL group was more likely to use only the singular mother without the plural mothers when searching, $X^2 (1, N = 76) = 8.05$, $p < .005$. This limited the number of citations that PsycLIT found.

This phenomenon had a significant impact on the searches in several cases. PsycLIT recalls only those citations that use the same word form. Table 4 provides an illustration of this anomaly; if a user searches only for the singular term mother in a search, far fewer citations would be found, limiting the likelihood of finding relevant hits.

Even though truncation can easily circumvent the singular/plural anomaly, only one out of 76 students made use of truncation to retrieve word endings. The PsycLIT Quick Reference Guide mentioned truncation as a retrieval tool, but neglected to specifically suggest or il-

<table>
<thead>
<tr>
<th>TABLE 3</th>
<th>SEARCHING TECHNIQUES USED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>English Group</td>
</tr>
<tr>
<td>Characteristic</td>
<td>$N$</td>
</tr>
<tr>
<td><strong>Boolean techniques</strong></td>
<td></td>
</tr>
<tr>
<td>and used at all</td>
<td>23</td>
</tr>
<tr>
<td>and used correctly</td>
<td>23</td>
</tr>
<tr>
<td>and used incorrectly*</td>
<td>3</td>
</tr>
<tr>
<td>or used at all</td>
<td>8</td>
</tr>
<tr>
<td>or used correctly</td>
<td>8</td>
</tr>
<tr>
<td>or used incorrectly*</td>
<td>3</td>
</tr>
<tr>
<td><strong>Other techniques used</strong></td>
<td></td>
</tr>
<tr>
<td>Thesaurus</td>
<td>2</td>
</tr>
<tr>
<td>Index</td>
<td>7</td>
</tr>
<tr>
<td>Expanded terms</td>
<td>16</td>
</tr>
<tr>
<td>Root (truncation)</td>
<td>1</td>
</tr>
<tr>
<td>Plural forms</td>
<td>40</td>
</tr>
</tbody>
</table>

* Four subjects, three in the NS group and one in the ESL group, used the Boolean operator and both correctly and incorrectly. Three subjects in the NS group used the Boolean operator or correctly and incorrectly.
TABLE 4
DIFFERENCE IN NUMBER OF CITATIONS FOUND USING MOTHER (MOTHER [SINGULAR] VERSUS MOTHERS [PLURAL])

<table>
<thead>
<tr>
<th>No.</th>
<th>Search Terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>948</td>
<td>Child care</td>
</tr>
<tr>
<td>10</td>
<td>Working mother</td>
</tr>
<tr>
<td>70</td>
<td>Working mothers</td>
</tr>
<tr>
<td>0</td>
<td>(Working mother) and (child care)</td>
</tr>
<tr>
<td>15</td>
<td>(Working mother) and (child care)</td>
</tr>
</tbody>
</table>

Illustrate its use in searching for both singulars and plurals. Unfortunately, SilverPlatter as well as other major producers such as Dialog OnDisc do not provide for automatic pluralization.

**Synonyms and Expanded Terms.** An important aspect of vocabulary usage in electronic databases is synonym searching. The NS students were more likely to use expanded terms or synonyms such as parents or grandparents than were their ESL counterparts, \(X^2 (1, N = 76) = 6.72, p < .01\). Almost 40 percent of NS students searched on alternative words or concepts—for baby-sitters or nannies—where only 12 percent of ESL speakers did so. This provided NS students with more robust searches. This finding is not surprising, as knowledge of vocabulary is strongly bound to the user’s language; a native speaker’s vocabulary will typically be greater and deeper than that of a non-native speaker, no matter what the language.

**Underutilization of Other Search Techniques**

Other basic search techniques were so underutilized in the search strategies of both groups that no significant differences were found in these areas:
- Slightly more than half (55 percent) of the students used the Boolean and.
- Twenty-four percent used the Boolean or (more than one-third of those students used the or incorrectly).
- Sixteen percent used the index.
- Seven percent used the thesaurus.
- Only 1 student used truncation.

Students virtually ignored advanced techniques, such as field searching, that were exhaustively illustrated in the PsycLIT Quick Reference Guide. These findings are generally consistent with those reported previously with a smaller sample size.23

The lack of significant difference between the groups in terms of Boolean usage was not surprising. Many languages, particularly Indo-European languages, contain words that translate to and and or, and Boolean use is probably a simple translation problem for those students whose native languages contain these words. Some Asian languages, particularly Chinese, do not contain words for and and or. For this reason, the authors examined Boolean usage between the native English-speaking students and those whose first language was Chinese. There was no significant difference between the two groups, which weakens the translation explanation.

Boolean concepts are logical or algebraic concepts which cross linguistic lines. Evidence suggests that users separate the natural language usage of and and or from the Boolean use of these words for intersection and union, switching between their respective connotations depending upon the context. This is true for both Computer Information Systems majors and computer programmers; both groups of subjects used the words and and or quite differently in natural language contexts as opposed to computer programming contexts requiring Boolean operations.24,25 If natural language usage and Boolean operations are two different bodies of knowledge, the semantic concepts behind Boolean operations—union, intersection, and negation—can exist across languages.

**Word Index**

Searching from the word index for the terms child care or day care, both of which were retrievable as single and compound words, can be problematic. Since recall is limited to the exact way a term is entered, the system does not retrieve variant spellings or compound words. Unlike the thesaurus, there are no links or suggestions that additional hits may be found by entering the term differently.
Table 5  
RETRIEVAL USING ALTERNATE SPELLINGS

<table>
<thead>
<tr>
<th>No.</th>
<th>Spelling</th>
</tr>
</thead>
<tbody>
<tr>
<td>264</td>
<td>Childcare</td>
</tr>
<tr>
<td>948</td>
<td>Child care</td>
</tr>
<tr>
<td>1,057</td>
<td>Childcare or child care</td>
</tr>
</tbody>
</table>

Table 6  
INCONSISTENCIES IN LINKING ALTERNATIVE SPELLINGS IN THE THESAURUS AND INDEX

<table>
<thead>
<tr>
<th>No.</th>
<th>Spelling</th>
</tr>
</thead>
<tbody>
<tr>
<td>73</td>
<td>Child-care in de (thesaurus)</td>
</tr>
<tr>
<td>366</td>
<td>Child-day-care in de (thesaurus)</td>
</tr>
<tr>
<td>137</td>
<td>Child-care (index)</td>
</tr>
<tr>
<td>264</td>
<td>Childcare (index)</td>
</tr>
<tr>
<td>948</td>
<td>Child care (index)</td>
</tr>
</tbody>
</table>

As illustrated in table 5, approximately 800 abstracts could be missed by an inexperienced student searching only for childcare and not for child care. The problem is compounded by the screen display of the index; it is necessary to scroll through several screens to find the word in an alternative spelling form. Although a useful feature, index searching could benefit from an enhancement that provided automated links to alternative (and plural) spellings.

Thesaurus

Only 5 students (7 percent) used the sophisticated permuted thesaurus which automatically ors the selected descriptor terms, suggests related or narrower terms, and explodes terms. The PsycLIT Quick Reference Guide, however, does not directly relate the use of the broadening or to its thesaurus. By listing the term as childcare, the thesaurus inadvertently reinforces the use as such, although there are more instances of childcare or child care in the index (table 6).

Conclusions

This study provides a better understanding of the problems novice ESL and NS undergraduate end-users encounter when searching a CD-ROM database. Because many undergraduates at public urban universities speak English as a second language, the authors were interested in determining whether there were significant differences in searching strategies between ESL and native English-speaking undergraduates. The main difficulties of ESL students that differed significantly from those of native English speakers were concentrated in vocabulary issues—utilization of plural forms, and the use of synonyms and expanded concepts for more robust searching.

The findings of this experiment showed statistically significant differences between the two groups in two language-based areas. First, NS users were more likely to use plural word forms when searching ($p < .002$). The lack of automatic pluralization in some CD-ROM interfaces puts ESL students at a disadvantage. Secondly, NS users were more likely to experiment with synonyms and alternative words to search for some topics ($p < .01$).

The main difficulties of ESL students which differed significantly from those of native English speakers were concentrated in vocabulary issues—utilization of plural forms, and the use of synonyms and expanded concepts for more robust searching.

Other basic search techniques were so underutilized in the search strategies of both groups that no significant differences were found in these areas; 55 percent of the students used the Boolean and, less than a quarter used the Boolean or, 16 percent used the index, and 7 percent used the thesaurus. Only one student used truncation. These findings are generally consistent with findings reported previously with a smaller sample size.26

This suggests that CD-ROM bibliographic instruction for the general user should include Boolean logic, index and thesaurus usage, and truncation. Bibliographic instruction for ESL students should focus on techniques to circum-
vent difficulties with plurals and limited vocabulary. Such instruction could focus on the use of truncation and wild-card characters for plural searching, and thesaurus use for alternative vocabulary. Additionally, all database producers should use interface standards that include intelligent automatic pluralization—not merely appending “s” or “es” to singular word forms—and automatic alternative spellings to assist ESL and NS searchers.

**Areas of Future Study**

These conclusions come with the usual cautionary note that the size of the sample group (N = 76) should be considered before suggesting generalizations. Nonetheless, the relative homogeneity of the user level (undergraduate users who were not Information Science students) reflects typical problems novice undergraduate end-users may experience. The results may have more external validity when applied to this growing user population than other studies using more diverse levels of users, or those using students in Information Science courses as subjects. The results warrant future investigation using much larger sample groups.

Although the language backgrounds of the ESL students were representative of students at the City University of New York, the samples were too small to examine significant differences within the ESL group. Where the two groups differed significantly may be a factor based on a specific native language. An examination of users grouped by their native language backgrounds may produce findings that identify those ESL students more likely to encounter difficulties with CD-ROM searching. Expansion of our sample size should enable a more thorough investigation.

The underutilization of some techniques by all students suggests a need for more research on which specific tools are actually useful to novice users. It was particularly telling that techniques featured prominently in the Quick Reference Guide—the field search, the thesaurus, and the index—were underutilized by the users in this sample. While these are powerful techniques for the skilled researcher who needs to perform searches that are both precise and exhaustive, they may be conceptually too difficult for the autonomous novice user who does not need such high quality searches. For the novice user, bibliographic instruction that focuses on simpler techniques and addresses some of the anomalies presented here might prove more useful.

**Recommendations**

CD-ROM databases contain many features that make them attractive to autonomous end-users. Nonetheless, Information Science professionals must become aware of the implications of providing computerized information to an ever-increasing number and variety of users. One of these implications is the need for bibliographic instruction for all users in the problem areas discussed in this paper with specialized, if limited, additional assistance for ESL users.

**Automatic pluralization, alternative spellings, uniform truncation commands, and synonym searching options will improve the searching capabilities of all users.**

Additionally, when developing future interface designs and standards, producers and vendors of “user-friendly” CD-ROM databases should consider some of the problems searchers face. Automatic pluralization, alternative spellings, uniform truncation commands, and synonym searching options will improve the searching capabilities of all users. Although the adoption of the Z39.50 protocol or other standards will provide greater standardization across a variety of interfaces, a better goal would be to provide an interface that provides a high level of usability across a variety of users.
REFERENCES AND NOTES


4. For an analysis of the freshmen classes entering Baruch College in the fall semesters of 1991 and 1992, see the Annual Freshmen Survey(s) from the Office of the Vice President for Student Development, Baruch College, CUNY prepared by Shehbal Teilmann.

5. Ibid.


A Strategic Analysis of the Delivery of Service in Two Library Reference Departments

Elsa Sjolander and Richard Sjolander

Two state university library reference departments within the Florida state university system are analyzed, using the framework of a five-task model for strategic management in organizations. The libraries serve different kinds of user populations. One supports a full range of programs through the doctoral level. The other serves only bachelor's and master's level programs. They have similar missions, policies, and scopes of operation. Each department has a clear concept of the implementation of goal-oriented programs. Explicit measurement of service quantity is found in both cases. Service quality is more difficult to measure. No specific measures of service quality were found in either department.

Strategic management in libraries should meet each of the following five criteria for planning, implementing, and controlling its operations.

1. The organization has formulated a philosophy or mission statement for the reference department, which describes its long-range goals;
2. The mission is translated into specific, measurable objectives. The objectives or goals for the organization should be stated in terms of desired outcomes;
3. A strategy is designed for the achievement of the objectives. It should be the recipe or map that the organization uses to guide its efforts toward the achievement of its stated goals;
4. The strategy is implemented efficiently and effectively. To be successfully implemented, the strategy must be communicated to all parts of the

Elsa Sjolander was a librarian at Lund University Library, Lund, Sweden, at the time this paper was written. She is now a librarian in the Escambia County, Florida, School System. Richard Sjolander is Associate Professor in the Department of Marketing University of West Florida, Pensacola, Florida 32514-5752. The authors contributed equally to this paper, and would like to thank the Library and School of Economics and Management at Lund University, Sweden, where much of the work for this paper was conducted. Special thanks to the reference departments at the Pace and Strozier Libraries. The authors would also like to thank the editor and two reviewers for their helpful comments to an earlier version of this paper.
A Strategic Analysis of the Delivery of Service

organization. This will involve the development of tactical plans to guide each function;

The outcomes of the program are evaluated in terms of performance in achieving the specified goals of the organization. Based upon the outcomes, adjustments are made to all parts of the strategic plan, when necessary for future implementation.

The degree to which a strategic framework is used as a guide for library reference department operations is unknown. In this paper, the authors report the results of a strategic analysis of the operations of two academic reference departments.

The process of explicitly determining what the organization’s objectives are and then planning a strategy for achieving them appears very simple. Some managers more accustomed to a laissez-faire management style might characterize a strategic framework as rigid or constraining. Such an attitude would be a clear sign that prior planning was not communicated throughout the organization. Effective planning requires that all members of the organization be aware of what is to be accomplished and how it is to be done. Strategic planning has been applied successfully in a wide variety of operations in both for-profit and not-for-profit organizations.

Success is defined in terms of organizational effectiveness and efficiency. In order to be an effective organization, the organization must have goals. Without explicit goals, any level of any service provided to patrons may be judged as satisfactory. The importance of explicit goals was stated clearly by Theodore Levitt in his classic 1960 article, “Marketing Myopia.” Successful organizations define their businesses in terms of their target customers. Goals must be meaningful to the target customers or clients—in this case the potential patrons of the reference department. A library reference department is effective to the extent that the services it offers are achieving the department’s objectives.

By efficiency, we mean that an organization uses the minimum amount of resources possible to provide a given quantity and quality of services. Obviously, any organization, either for-profit or not-for-profit, should strive toward being both efficient and effective. In libraries, questions of efficiency examine whether the same level of library services could be offered using fewer resources.

A library reference department is effective to the extent that the services it offers are achieving the department’s objectives.

The reference departments of university libraries provide an interesting case for applying the framework of strategic management in the analysis of not-for-profit organizations. Libraries are highly visible service organizations that meet a wide range of publics and serve important functions to overall university operations. The environment of university libraries has changed enormously in recent years. Henry Mintzberg, in his organizational research studies, found that organizations adapt slowly in response to changes in their environments. At certain times there will be rapid change, followed by long periods of stagnation and even regression toward strategies which have been discarded as no longer effective. This paper examines the extent to which libraries have adopted new management practices to adapt to the change.

**METHOD**

In this study, the reference departments at two American university libraries are compared. These universities are Florida State University (FSU) in Tallahassee and the University of West Florida (UWF) in Pensacola. Several methods of data collection were used. Personal interviews were conducted with the reference department heads. The operations of the two reference departments were observed by the researchers, and the policy documents were analyzed. A questionnaire allowing for structured,
open-ended responses was constructed and used for the interviews. This facilitated comparison of the departments. A follow-up questionnaire was also sent to each department head for confirmation of certain information.

The comparison centers around the issues of how each library develops and delivers the desired services to its market. The market is defined as the set of actual and potential users of reference services at each library. This study compares the philosophy or mission of the reference department, the reference policy objectives, the types of clientele served, the reference services provided in meeting the objectives, measures of the service quality, the availability of professional librarians, quality and adequacy of the collection, and the evaluation and control of service quality.

DEMOGRAPHICS OF THE MARKETS SERVED

Libraries at Florida State University (FSU) and the University of West Florida (UWF) were chosen as the libraries for this study. These universities are two of the nine state universities in Florida. Each is located in the main city of a metropolitan area with a population of about 300,000 people and is the major university in its region.

Florida State University (FSU) has an enrollment of slightly more than 28,000 students. The university offers a full range of undergraduate and graduate programs through the doctoral level in the humanities, sciences, engineering, medicine, and law. Florida State began operations in 1857. FSU is located in Tallahassee, 200 km from the nearest larger city, Jacksonville, Florida. Tallahassee is the state capital of Florida. More than one hundred state and federal agencies have either head offices or major branches there. The Strozier Library is the main library at FSU and houses the main reference department. While there are separate libraries for the science and law collections, this study is limited to the reference department at Strozier Library.

The University of West Florida, by contrast, is only twenty-five years old, with an enrollment of almost 8,000 students at the undergraduate and master's levels. No doctoral programs are offered. The University of West Florida is located in Pensacola, 100 km from the nearest larger city, Mobile, Alabama. Although Pensacola has a slightly larger metropolitan area than Tallahassee, it has a smaller business center. Pensacola is influenced by the presence of the Navy, other military stations, and beach tourism. The John C. Pace Library houses all collections at the University of West Florida.

The two universities are quite different in terms of location, range and level of programs offered, age of the university, and the number of students enrolled. These differences should be considered when the reference services are compared. Each university supports one branch campus with about 1,500 students.

MISSION STATEMENT

The philosophies of information service at the two libraries are similar; they are stated in the reference policy statement for each department. The primary purpose of a reference department is to acquire, maintain, and interpret the general reference collection. The librarian on duty is responsible for inquiries—locating the information or instructing patrons in how to find it. The function of the reference librarian is to help the patrons find what they need, not to conduct the search for them. The authors agree with William Beck and Marsha Nolf that the mission of a reference department determines the choice of objectives, the services provided, and the organization of the services. The degree of similarity in the missions may be a result of the faculty clients. The faculties of both institutions are involved with research. However, the populations of students served by the two reference departments are quite different. There are no Ph.D. (research) degrees conferred at UWF and the student body comes from a much smaller region; many students combine work and study. The student body at FSU is typical of a large state university.
REFERENCE POLICY: OBJECTIVES

Both reference departments have written policy statements. These include general mission statements for the reference departments and their translations into specific objectives for the departments. Both policies follow the "Draft Outline of Reference Service Policy Manual," prepared by the Standards Committee, Reference and Adult Services Division, American Library Association. These policies state the nature of reference service, types of services offered, main categories of library users, desk service policies and instruction, interlibrary loan service, and bibliographic service. However, UWF's reference policy document is not current. Most of the reference policies at UWF are incorporated in other policy works such as the collection development and automation policies. The reference department service policy at FSU is current.

The purpose of the reference department in each case is to acquire, maintain, and interpret the general reference collections of the libraries to service the information needs of the patrons. The reference policies can be summarized in the following five points:

- To select, acquire, organize and maintain a reference collection that fulfills the patrons' (students, faculty, staff and community users) need for information;
- To provide information service of high quality to all patrons;
- To provide instruction in the use of the library;
- To cooperate with other library departments, the university community, other libraries, and agencies to provide optimal service;
- To collect statistics for use in evaluation of the reference services.

Both libraries have other policies covering specific areas of their missions. They include collection development, personnel policies describing preferred behavior and methods for achieving contact with patrons, and policies for the management of problem patrons.

These five objectives form the basis for the analysis of the reference department's strategic plan. The first objective addresses collection development, providing the raw materials necessary to support the reference department's information service function. The next three objectives deal with the provision of reference service to various groups of library users. The last objective, the collection of statistics for use in evaluation, addresses the final step in the strategic management process—the evaluation of outcomes in terms of performance in achieving the specific goals of the organization. Its inclusion as an objective sends up a red flag of caution to the analyst.

There seem to be two possible explanations for the inclusion of this last objective. The organization could consider the measurement and evaluation of its objectives so central to its mission that this is made an objective. The second possibility is that the organization perceives the gathering of statistics on its operations as an end in itself. Libraries have long been enamored with the number of volumes in their collections, for example. While such a statistic may be of importance in evaluating the collection of a national library, it is of dubious worth in the evaluation of a modern university library reference collection. Holdings are of value as they relate to meeting the objectives of the library, not in and of themselves.

Types of Clientele Served

The study uncovered major differences in the types of patrons served by UWF and FSU. The University of West Florida serves many more patrons who are not associated with the university. Sixty percent of the patrons served at the reference department at UWF are students, faculty, and staff. Forty percent of the patrons are community users. At FSU, 93 percent are students, faculty, and staff. Only 7 percent are community users. At FSU, 93 percent are students, faculty, and staff. Only 7 percent are community users. FSU is located in Tallahassee. This is the state capital with a large public library. Many other information sources and agencies are available to community users. UWF is located in Pensacola, a smaller city with few alternative information sources and agencies.
Differences in the types of patrons at the two libraries may also result from the strategy chosen by each university to meet its objectives. Here we are referring to how each university and its library perceive their mission. Information to test this hypothesis was not found in the policy statements of the reference departments.

Reference Collection

Collection development occurs on a continuous basis within the reference department at each library. Reference librarians are responsible for subject area collection development within their areas of expertise. They were found to have specialized knowledge and training in each area of the collection. Clear strategic planning is being followed in the development of the reference collection. Channels of communication with the various academic departments followed subject area responsibility in both departments.

A problem in evaluating the adequacy of the reference collections is that the strategic objective dealing with collection development is not stated in terms of measurable, quantifiable outcomes. Are the collections current? Do they contain the materials requested/required by the various client groups of faculty, students, and community users? Either regular collection of information from patrons on these issues or periodic patron surveys could be used to gather information on these issues. If the objectives are stated in quantifiable terms, goal achievement can be measured.

REFERENCE SERVICES PROVIDED

The second objective of the departments is to provide high-quality information services to all patrons. The services described in this section relate to the strategies designed and implemented to achieve this objective.

Desk Service

Both Florida State University and the University of West Florida libraries provide reference desk services as the nucleus of the information services provided. Inquiries are answered at the reference desk, and some bibliographic instruction is given to patrons who come to the reference department to seek information. Telephone inquiries are also answered at the reference desk.

The location of the reference desk and its design are important factors in the provision of reference services. The reference desk at FSU is highly visible and located on the first floor of the library. The desk is constructed in a semicircle. Located here are two online catalog terminals, an OCLC (Online Computer Library Center) terminal and approximately 10 meters of highly used reference books. The reference desk at UWF is centrally located, but on the second floor of the library. It is not immediately visible to patrons entering the department. The desk equipment consists of two normal height office desks with chairs for the personnel. Chairs are not provided at the desk for patrons, which discourages long conversations at the desk. There are side tables on each side for the online catalog terminals, an
OCLC terminal, a CD-ROM reader, and approximately 12 meters of shelving for commonly consulted reference sources. It would appear that the location of the reference department at FSU is much better. The contact point for a reference department, usually the reference desk, needs to be highly visible and easy to find.

Beyond the physical location of the reference desks, specific measurement instruments and standards defining levels of acceptable and desired service are necessary to evaluate the quality of the reference desk service in the two departments. Such measures could include friendliness of staff, percent of correct answers given, percent of satisfied users, average time required to answer questions, or waiting time for service. Measures of quality need to be specified in conjunction with the development of the specific objectives of the organization.

**Interlibrary Loan**

Both libraries provide the same type of interlibrary loan service. They are part of FLIN (Florida Library Information Network). Most of the interlibrary loans are processed through OCLC. Both libraries have upgraded these services to provide much faster delivery of articles since the survey for this paper was conducted. However, it is not clear how either organization measures its effectiveness in this area.

**Bibliographic Service**

All nine universities in the Florida State University system use the LUIS (Library Users Information System) online catalog. Library users can search the entire system's catalog or any individual library collection. The database for educational resources (ERIC), periodical indexes, and other databases can be accessed on the LUIS terminals.

Both university libraries provide information through a variety of online databases. The online services at both libraries are fee-based. The libraries also provide bibliographic services to patrons through the use of CD-ROM–based databases free of charge. The larger Florida state library had a much wider range of databases on CD-ROM than UWF in 1992. The number of CD-ROM–based information retrieval systems has increased tremendously at both libraries since then. Rapid technological advances have reduced the gap between the services available at the two libraries.

**Other Reference Services**

Printed guides such as pathfinders, study guides, and subject bibliographies are examples of other services offered at both reference departments. These are seen as aids to the patrons in using the libraries' collections. Subject bibliographies provide an efficient form of information transfer on commonly asked questions. They can also be used as part of a program to standardize the level of service offered to reference desk patrons. Explicit criteria were not found to direct the development of these guides. The effectiveness of the guides was not being measured.

**Bibliographic Instruction**

Extensive bibliographic instruction is offered at both reference departments. The programs at the two libraries are similar. They begin with a general introduction and add detail as the user progresses. It should be possible to define the specific goals of these programs and then measure their performance. Surveys could be used to sample both student users and the faculty who grade student assignments based on library research.

**COOPERATION AND COMMUNICATION**

Cooperation with other departments of the library and university to provide optimal service was the fourth objective of the reference departments. Few formal strategies were in place to achieve this objective. Both reference departments cooperate with academic departments and research units of the universities concerning the selection of materials. Informal channels also exist for suggestions of acquisitions from patrons. No measures of these efforts are
being taken. There is no formal communications committee to encourage the improvement of library communication, as suggested by Beck and Nolf. 23

It is difficult enough to work toward achieving explicit goals; implicit goals often lead to organizational inefficiency and ineffectiveness.

Patrons are referred to academic departments, other libraries, agencies, and organizations for information that cannot be acquired or received at the reference departments. Counts of the numbers of patrons referred are kept. This measure could be related to the objective. The issue of internal communication addresses how well the objectives and strategies of the department are communicated to those working in the department. This was not directly measured in the present study. The policy statement in one of the departments had just been revised prior to this study. Communications here would be dependent on the extent to which the members of the department were empowered during the process. The policy statement in the other department was out-of-date. There is a great risk of miscommunication in this case. It is difficult enough to work toward achieving explicit goals; implicit goals often lead to organizational inefficiency and ineffectiveness.

MEASURES OF SERVICE QUALITY

The final objective of the departments is condensed into a statement about the collection of statistics for use in the evaluation of reference services. The measurement of service quality can be divided into several categories. One common measure of quality in the library literature is the accuracy of information given to specific questions from the patrons. 24 This has led to the so-called 55 percent rule, meaning that the information given to patrons is accurate 55 percent of the time. 25 Although the accuracy of the information given to patrons was discussed by both reference departments, neither had implemented a means of controlling this dimension of quality.

As both departments used versions of the same control measures, they will be discussed together. The most common measure of service in each library was actually a measure of service quantity rather than service quality. Both departments kept accurate counts of the numbers of patrons served. These measures were aggregated into two groups: personal walk-ups and telephone inquiries. This is an excellent measure of how many patrons have come in contact with reference librarians. It has no direct connection to either service quality or to the quantity of reference services provided. Customer service questions such as the level of patron satisfaction with the information given and the service provided were not measured.

Accurate counts are kept on the number of patrons receiving the various types of bibliographic instruction. This is seen as the link between the third objective: to provide instruction in the use of the library, and its measure. It is an excellent measure of the number of patrons receiving instruction, but it does not address the quality of the services provided. The UWF reference department staff thought that the broad range of subject bibliographies it developed increased the accuracy and completeness of answers to questions, but this was not measured.

Both libraries track their acquisitions and holdings of reference volumes as a measure of quality. This measure relates to the first objective: the selection, acquisition, organization, and maintenance of the reference collection. The measurement of how well the collection met the patrons' needs for information was informal and was assumed to affect acquisitions to meet future needs. However, this aspect of the objective was not explicitly measured.

The number of interlibrary loans processed was measured. This is another way in which the departments measured the quantity of service provided. Quality measures could be designed around
various aspects of the service, such as speed of delivery, accuracy of order completion, and degree to which the patron is satisfied with the delivered materials.

From the discussion above it should be clear that departmental objective five—to collect statistics for use in evaluation of the reference services—is being met in terms of service quantity.

Several areas of service quality are not being measured by either department. First, there are no explicit measures of whether patrons' needs for information are being met. Second, and related to this point, there is no explicit measure of the quality of information service offered to patrons. Each of these points figured prominently into the objectives of the reference departments in relation to satisfying their missions, and is central to an evaluation of service quality. One method to evaluate some of the areas of library service quality is to use focus groups.26 Cheryl Elzy and others suggest that a side benefit to measuring service quality may be improvements in the level of service provided.27

Personnel development and recruitment is one area of clear strategic planning in each reference department. Each reference librarian has specialized knowledge in one or more of the areas of the collection. Formal subject area knowledge is an important part of each department's recruitment strategy.

An informal measure of service quality in each department was the hours of desk coverage by a professional reference librarian. Both departments stressed that professional reference librarians were on the desk during all hours when there was heavy use of reference services—daytime, evening, and weekends. The delivery of services is highly labor-intensive, and this is surely the case for reference information services.

As has been noted in numerous for-profit service organizations, the quality control of employee attitude and performance is roughly equivalent to product quality control in manufacturing industries.28 In other words, it cannot be assumed that because a professional librarian is on duty at the reference desk the quality of reference service is high or even adequate. In retail sales, for example, the most common complaint voiced by customers is poor service. Customers do not care if service personnel are "having a bad day." Customers want sales personnel to facilitate their need to have a good day. This point is made quite succinctly by the mail-order firm L. L. Bean.

A Customer is not dependent on us . . . we are dependent on him. A Customer is not an interruption of our work . . . he is the purpose of it. We are not doing a favor by serving him . . . he is doing us a favor by giving us the opportunity to do so.29

Florida State University has about four times the number of students as UWF, but on a per student basis the reference department at UWF has more librarians than FSU. The higher concentration of personnel per potential patron may increase the quality of the service at the smaller school, unless there are significant economies to scale in the delivery of reference services. Both departments related adequacy of staff to the number of hours the library is open, the number of potential patrons it serves, and when those patrons seek help.

DISCUSSION

The two reference departments studied in this paper are quite different in terms of the size of the student bodies of the institutions and the programs of study offered at them. However, when analyzed from a strategic management frame of reference, they are found to be quite similar. The Strozier reference department has its own policy statement, which was written recently—fall 1991. UWF's library policy statement includes the reference department. This document needs to be updated if it is to serve as a guide for operations. Within the range represented by these two departments—one large research-oriented institution (28,000 students) and one medium-sized balanced research/teaching school (8,000 students)—size of the institution does not appear to be a critical factor determining the level of the
quality of service in many areas of the reference function.

Major differences of the two reference departments compared in this study include the physical location of the reference departments within the libraries and the types of patrons served by the departments. Easy access to the reference department is considered very important. Visibility of the desk is also important. The first-floor location in the Strozier Library is clearly superior to UWF's location on the second floor.

At UWF, 40 percent of the users are community people, and at FSU only 7 percent are. This is probably because of two factors. Access to library borrowing privileges for community members is much less restrictive at UWF. Patrons can acquire library cards at the circulation desk by presenting two pieces of identification. At FSU a letter of request, on business letterhead, is required for all community borrowers. The second factor is proximity to alternate information sources near FSU, which UWF does not have. The public library in Tallahassee is within walking distance of the FSU library.

Both departments are investing for major increases in the level of computer utilization in reference work. The major concern for funding is to expand the reference staff. Apparently, increasing levels of reference automation are not expected to reduce staff. One of the most important measures used by each of the departments to define the quality of a reference service is the number of professional librarians working in the department. Given current trends in reference information service, the number of volumes in a reference department may be less important when evaluating a collection's quality and adequacy in the future. The number of databases available as well as other information retrieval sources will be of increasing importance.

The most surprising finding in this study is the lack of measurement instruments and standards for the evaluation of service quality in library reference departments. The concept of strategic management by objectives has not been totally embraced by these institutions.

CONCLUSIONS

A strategic management perspective was applied to the operations of two university library reference departments. They were analyzed in terms of the five criteria for planning, implementing, and controlling organizations in this framework. The missions of the reference departments in the two university libraries were found to be quite similar. The objectives developed out of these mission statements were aggregated by the authors into five main areas of emphasis: materials selection, information service, bibliographic instruction, internal and external communication and cooperation, and the collection of statistics for departmental evaluation. These objectives were stated in general terms and not easily translated into measurable objectives.

Each reference department has programs designed to address the five major objectives identified in this study. These programs are being implemented on a continuous basis. Communication of the strategy throughout the organization appears to be implemented more effectively at the larger institution, where the policy statement is up-to-date. The degree to which the entire staff agree with, or even are aware of, the overall department policy was not measured. One way to increase the effectiveness of the communications process within the organization may be through better implementation of the final criterion, the development of a set of outcomes measures to evaluate performance on specific goals.

The outcomes measures used by both departments were found to address various aspects of service quantity. Service quality in most areas was not being measured. There appears to be a lack of congruence between performance measures and stated departmental objectives. The literature on control of library operations indicates that this is not an unusual finding. Service industries have lagged behind goods-producing industries in adopting explicit measures of their productivity. In not-for-profit service in-
dustries, such as libraries, the adoption has often been further hampered by the unclear statement of objectives. This often leads to a general lack of measurement and evaluation of quality in the delivery of services, a fact that is well-recognized in the growing literature on services.30 Both reference departments in this study have clear objectives. However, in many cases these objectives are not being stated in terms of measurable variables. It is possible to measure the quality of a service just as it is possible to measure the quantity of service provided. Hospitals, restaurants, and hotels provide numerous examples of the definition and measurement of service quality. The library science literature is beginning to recognize that strategic planning can also be implemented in libraries.31

Evaluation of the services provided by reference departments was found to be a weak link in the strategic implementation of the programs. While both departments clearly identified quality of service as an objective, neither institution had implemented procedures to measure this important aspect of its mission. This does not mean that libraries must implement procedures to gather large quantities of new data for statistical analysis. There appears to be a need for libraries to be more exact in defining what they propose to accomplish, how to know when they have succeeded, and then to implement control systems simultaneously with their programs. While statistics tell us how many patron questions we have answered, libraries need qualitative evaluation of how well they have met patrons' needs.

Both reference departments recognize that the revolutionary changes going on within library and information science affect the libraries and their users. Not only do these changes in the field of information science lead to changes in the methods and techniques of reference work. They may also alter the relationships of patrons to libraries. The knowledge that large quantities of information exist may make patrons less able to deal with their own ignorance. It has even been suggested that librarians at universities may be seen as symbols of knowledge by some of the faculty. Librarians could, in such instances, be perceived as threats, leading to the need for new service strategies to deal with these situations.32 An interesting research topic would be to follow the development of service strategies in reference departments of various types and sizes of universities through the next few years.

The framework of strategic management may be of considerable value in the area of delivering desired reference service at specified quality levels efficiently and effectively in a variety of service industries. The present study has illustrated two such cases.

REFERENCES AND NOTES

8. Moore, How to Do Research, 20–45.
An Examination of the Inclusion of a Sample of Selected Women Authors in Books for College Libraries

Lynn Silipigni Connaway

This exploratory study identifies some of the characteristics of the three editions of Books for College Libraries (BCL) in relation to literature by women. A sample of fifty authors selected from The Norton Anthology of Literature by Women: The Tradition in English, a canon in the field of women's studies, is compared to the holdings of BCL, a highly respected core bibliography for undergraduate libraries. Forty-two of the fifty authors in the sample are included in BCL. Three hundred eighteen unique titles appear in BCL for the sample of authors. Sixty-four percent of the publishers of the titles in this study that appear in BCL are published by trade publishing companies.

The American Library Association has published three editions of Books for College Libraries (BCL). The first edition of Books for College Libraries (BCL1) was intended to update Charles B. Shaw's 1931 List of Books for College Libraries. It is a list of approximately 53,400 titles based on the initial selection made for the University of California's New Campuses program and selected with the assistance of college teachers, librarians, and other advisers. "The size and subject balance of the list are similar to the already successful working collections of the Lamont Library at Harvard University and the Undergraduate Library at the University of Michigan." As the preface to BCL1 states, "This list does not claim to be a list of the best books or a basic list for any college library...[it] is a list of monographs designed to support a college teaching program that depends heavily upon the library, and to supply the necessary materials for term papers and suggested and independent outside reading."2

The following two editions of BCL state similar objectives. BCL2, which appeared in 1975, states in the "Introduction" that it is intended for use by the same audience of undergraduate libraries as BCL1 and that the number of titles included has been reduced to 38,651 to reflect a minimal "core collection."3 The "Introduction" further states, "Books recommended were to constitute the bare minimum of titles needed to support an average college instructional program of good quality."4 The "Introduction" to the third edition of BCL (BCL3), which appeared in 1988, again states that the list "presents a third recommended core collection for undergraduate libraries."5 BCL3 includes 50,000 titles.

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The three editions of BCL have been subject to similar criticisms. The major criticism is the inclusion of a substantial number of out-of-print publications. Lee Ash and Robert W. Wadsworth criticize the fact that at least 40 percent of those titles included in BCL1 were out of print at the time the edition was published. R. E. Moore and Lee Ash criticize the inclusion of out-of-print titles when available reprints of the titles are not listed in BCL2. John Budd selected a stratified sample of 381 titles listed in BCL3 and checked for in-print status. Of these 381 titles, 163 (about 43 percent) were out of print approximately one year after the publication of BCL3. Although each edition of BCL specifically states the titles were selected without regard to their availability from publishers and in-print availability was not considered a major factor, this does pose limitations on the lists as guides for selection.

The reviewers also question the qualifications of those responsible for selection in each specialized area of BCL2. BCL3 attempted to correct this doubt of authority by involving more than four hundred faculty members and about fifty academic reference librarians on "the first-round team" and sixty-four academic librarians on the reviewing group for the second round. The librarians reviewed broader subject areas than the faculty reviewers. The first-round team members were given pages from BCL2 and Choice review cards within their subject areas. They were asked to rank the titles on a scale of one through four and to recommend other titles they believed necessary for undergraduate study within their subject areas. The second-round group served as referees and rated the quality and appropriateness of the first-round contributors' selections.

The producers of BCL2 are also criticized for their unbalanced and uneven selections, as well as the omission of important works. Thomas Gaughan charges BCL2 with emphasizing secondary authors and slignting major authors. Wadsworth berates BCL2's "striking reduction in number of titles" for specific authors in comparison to BCL1.

Regardless of the criticisms, the literature suggests that BCL is used for evaluating and assessing collections as well as for building and maintaining them. With the increasing number of revisions and additions to the academic curriculum, the need for and use of a core collection guide may be essential in developing collections to support the undergraduate curriculum. It is fairly common for small and medium-sized academic libraries to evaluate the quality of their collections by using basic lists. Stanley Shabowich describes the process used to judge the quality of a library collection by checking the library's holdings against BCL. Since BCL proposes to represent a core collection that is designed to support the curriculum of four-year institutions, to be used as a measure to evaluate academic library collections, and to be considered an important canon of the library field, it is also likely to be consulted when building collections to support new courses, programs, and departments.

Because the last twenty years have seen the steady growth of women's studies courses, programs, and academic departments, BCL is one of the guides likely to be consulted for building core collections in support of this field. Women's studies has gained scholarly recognition and legitimacy as an area of study within academia during this time period. Although feminist scholarship was first integrated into the fields of history and literature, it has expanded into the fields of the social sciences and professions and is currently spreading to technology and the biological sciences. Colleges and universities have integrated and are continually integrating scholarship on women and nonwhite cultural groups into the liberal arts core curriculum. The study and mainstreaming of gender within a discipline have grown in the 1980s, especially within undergraduate programs. Since women's studies draws upon the knowledge of many disciplines, with women as the center of intellectual inquiry, it is considered interdisciplinary or transdisciplinary. By incorporating the study of
women into the courses of other disciplines, feminist faculty hope to integrate women's values and women's concerns into the center of liberal education. 23

THE LITERARY CANON

In any investigation of an academic core curriculum for literature, the issue of canon must be confronted. Many widely read and popular women authors remain excluded from or in the margins of the literary canon. The exclusion of women writers from the canon and their marginal place in literature have been widely challenged during the 1980s. The challenge is attributed to the scholars, critics, and reviewers who defined and codified the American literary canon in relation to the masculine world of contemporary social and economic issues and is synonymous with power. 24

In her discussion of the decanonization of Willa Cather, O'Brien attributes Cather's establishment as a major writer in the 1920s to her first supporters, "journalists and men of letters who waged their campaign for a national literature with a 'distinctively American spirit' outside the academy." 25 O'Brien then attributes Cather's demotion from a major to minor writer in the 1930s and 1940s to her later critics, "teachers of literature within English departments as well as book reviewers and authors of literary histories." 26 Robert Alter writes:

"Literature, as has often been claimed over the past quarter century, is neither a stable nor a coherent entity. One way you can tell this is by the shifting nature of the literary canon. As cultural fashions change and new values come to the fore, writers once deemed peripheral or uncanonical are brought into the canon, others once thought central, being displaced to the margins. . . . [This movement suggests] that there may be something arbitrary and indeed slanted about the canon. Literature, then, according to this line of reasoning is not a fixed entity, but a reflection in any society of the values of the ruling class, abetted by a learned or priestly elite. 27

If Alter's line of logic is extended to Willa Cather, she was regarded as a major author by the values of society in the 1920s and, in turn, was regarded as a minor author by the societal values of the 1930s and 1940s. With the support of this literature, the literary canon is defined not as a fixed entity, but as a reflection in any society of the values supported or favored by a learned elite.

Since literary anthologists are believed heavily to influence the canon and literary anthologies are believed to identify the major and minor authors of the time, The Norton Anthology of Literature by Women: The Tradition in English (NALW) is considered an important canon of women authors. 28 This is also revealed in library and popular journal reviews. The NALW is characterized as a landmark in feminism, as well as in the study of literature and a solid work that is sure to be a staple in undergraduate English classes. 29-31

In the "Preface" to the NALW, Sandra M. Gilbert and Susan Gubar specifically state that the anthology was designed to serve as a core curriculum for women's literature courses and as the canon into which other women authors may be assimilated. 32 In the "Preface" to the anthology the authors apologize for excluding countless women writers, many of whom originated from ethnic backgrounds, but attribute this exclusion to limited space and copyright restrictions. Like other Norton anthologies, the NALW is arranged in chronological order followed by introductions to the historical sections.

Like BCL, NALW has encountered its criticisms. Gilbert and Gubar have been criticized for selecting authors for the NALW to support a case against men or a seventies-style political sentimentality or to document and connect female literary experience rather than to present distinguished literary merit. 33 Others condemn the authors of the NALW for promoting exactly that which it is supposed to critique—the exclusion of black, Chicano, and Native American Indian women and the adaptation to the standard Norton anthologies of authenticating writers by including them in the
Gilbert and Gubar explain the exclusion of authors in the "Preface." Shari Benstock justifies the style of the anthology by stating that NALW's adaptation of the style of other male-dominated Norton anthologies was to suggest that woman's place is within man's history and to "suggest the ways in which woman is sewn into (and sewn up by) the patriarchal system.

Despite the negative reviews and flaws of the NALW, it has been lauded as a landmark not only in feminist commentary but in the study of literature. The reviewer for Library Journal recommends most libraries purchase at least two copies of the NALW, one for reference and one for circulating.

THE STUDY AND ITS METHODOLOGY

The number of women's studies courses offered in colleges and universities has grown from sixteen courses in 1969 to over twenty thousand courses in the 1980s. Therefore, the implications of the utility of BCL in evaluating, assessing, building, and maintaining collections to support the women's studies curriculum of undergraduate programs will be examined in this study.

Specifically, this study looks at the inclusion of women authors in the field of literature in the three editions of BCL with an eye on support for the women's studies curriculum of undergraduate programs in four-year academic institutions. This allows for a comparison of approximately twenty years in relation to the publishing dates of the three editions of BCL and the emergence and growth of women's studies as a discipline. Since the NALW is considered an important canon of women authors in the field of literature, it is compared to the holdings of the three editions of BCL. Other anthologies, such as the Norton and Oxford anthologies and The Great Books of the Western World are not used because of their limited inclusion of women authors.

The apportionment of authors within each chronological division in the NALW is:

- Literature of the Middle Ages and the Renaissance—5 (3.4 percent)
- Literature of the Seventeenth and Eighteenth Centuries—15 (10.2 percent)
- Literature of the Nineteenth Century—23 (15.5 percent)
- Turn-of-the-Century Literature—13 (8.8 percent)
- Modernist Literature—31 (20.9 percent)
- Contemporary Literature—61 (41.2 percent)

Sampling is employed in order to ensure representativeness within chronological periods and as an exploratory tool to investigate inclusion in BCL. A systematic sample includes the first author listed in the anthology and then every third author listed throughout NALW for this study. The sample consists of fifty authors selected from the total of 148 authors included in the NALW. This sample is also proportional to the number of authors included in each chronological division. The apportionment of the sample of fifty authors within each chronological division is:

- Literature of the Middle Ages and the Renaissance—2
- Literature of the Seventeenth and Eighteenth Centuries—5
- Literature of the Nineteenth Century—8
- Turn-of-the-Century Literature—4
- Modernist Literature—10
- Contemporary Literature—21

The sample of fifty authors within each chronological division is included in appendix A.

Each edition of BCL is checked for the inclusion of each author included in the NALW. For every author included in the NALW, the inclusion or exclusion of the author in each edition of BCL is documented. For each author in the sample included in BCL, the following information is documented: the title, publisher, and publication date of the work and the edition, volume number, entry number, page number, and subject heading of the citation in BCL.

By documenting this information, the study identifies (1) the women authors of literature included in The Norton Anthology of Literature by Women and in each of the three editions of Books for College Libraries; (2) the titles of the works
The NALW is included in BCL3 under the subject heading "American Literature. Special Classes of Authors." Forty-two of the fifty authors in the sample are included in at least one of the editions of BCL. Of the 148 authors included in NALW, twenty-nine are not included in any edition of BCL. The number of authors included in both NALW and BCL is 119 or about 80 percent, while twenty-nine authors or just over 19 percent are not included in BCL. Table 1 presents the number and percentage of authors included in NALW and in BCL by chronological divisions.

<table>
<thead>
<tr>
<th>Chronological Division</th>
<th>Number of Authors Included in NALW</th>
<th>Number of NALW Authors Included in BCL</th>
<th>% of Authors Included in BCL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Middle Ages and the Renaissance</td>
<td>5</td>
<td>4</td>
<td>80</td>
</tr>
<tr>
<td>17th and 18th centuries</td>
<td>15</td>
<td>9</td>
<td>60</td>
</tr>
<tr>
<td>19th century</td>
<td>23</td>
<td>20</td>
<td>87</td>
</tr>
<tr>
<td>Turn-of-the-century</td>
<td>13</td>
<td>12</td>
<td>92</td>
</tr>
<tr>
<td>Modernist</td>
<td>31</td>
<td>24</td>
<td>77</td>
</tr>
<tr>
<td>Contemporary</td>
<td>61</td>
<td>50</td>
<td>82</td>
</tr>
</tbody>
</table>

The representation of authors in the BCL3 indicates an increase in representation from BCL1. Four of the contemporary authors included in NALW had not published their works until after 1975, the publication date for BCL2. The mean percentage of authors represented in BCL2 is nearly 56 percent.

The percentage of authors represented in BCL3 in the Middle Ages and the Renaissance is equivalent to the percentage represented in BCL1, which is greater than the percentage represented in BCL2. The percentage of authors represented in BCL3 in the turn-of-the-century is equivalent to the percentage represented in BCL1 and is less than the percentage represented in BCL2. The representation of authors in the seventeenth and eighteenth centuries, nineteenth century, modernist, and contemporary divisions in BCL3 indicates an increase in representation from BCL1 and BCL2. The mean percentage of authors represented in BCL3 is about 70 percent.

The eight authors from the fifty author sample, within the chronological divisions, who are not included in BCL are:

- Literature of the Seventeenth and Eighteenth Centuries
- Margaret Cavendish, Duchess of Newcastle (1623–74)
TABLE 2
NUMBER OF AUTHORS INCLUDED IN NALW
AND THE THREE EDITIONS OF BCL

<table>
<thead>
<tr>
<th>Chronological Division</th>
<th>Number of Authors Included in NALW</th>
<th>NALW Authors Included in BCL1 (1967)</th>
<th>NALW Authors Included in BCL2 (1975)</th>
<th>NALW Authors Included in BCL3 (1988)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Middle Ages and the Renaissance</td>
<td>5</td>
<td>2</td>
<td>40</td>
<td>1</td>
</tr>
<tr>
<td>17th and 18th centuries</td>
<td>15</td>
<td>4</td>
<td>27</td>
<td>6</td>
</tr>
<tr>
<td>19th century</td>
<td>23</td>
<td>13</td>
<td>56</td>
<td>15</td>
</tr>
<tr>
<td>Turn-of-the-century</td>
<td>13</td>
<td>10</td>
<td>77</td>
<td>11</td>
</tr>
<tr>
<td>Modernist</td>
<td>31</td>
<td>20</td>
<td>64</td>
<td>20</td>
</tr>
<tr>
<td>Contemporary</td>
<td>61</td>
<td>24</td>
<td>58*</td>
<td>34</td>
</tr>
<tr>
<td>Total number of authors</td>
<td>148</td>
<td>73</td>
<td>56*</td>
<td>87</td>
</tr>
</tbody>
</table>

* NALW includes 61 authors in the Contemporary period, however only 44 of these authors published before 1967, the publication date for BCL1.
† NALW includes 61 authors in the Contemporary period, however only 57 of these authors published before 1975, the publication date for BCL2.

- Mary Rowlandson (c.1636–c.1678)
- Anne Killigrew (1660–85)

Turn-of-the-Century Literature
- Charlotte Mew (1870–1928)

Modernist Literature
- Anna Wickham (1884–1947)
- Anzia Yezierska (c.1885–1970)

Contemporary Literature
- Kamala Das (1934–)
- Maxine Hong Kingston (1940–

The demographics of both the forty-two authors included in BCL and the eight authors not included in BCL are of interest to this study. Of the forty-two authors included in BCL, six of the women are women of color (Phyllis Wheatley (black slave), Linda Brent (black slave), Mourning Dove (Native American), Gwendolyn Brooks (African American), Toni Morrison (African American), and Leslie Marmon Silko (Native American, Mexican, and Caucasian descent); eight are writers concerned with women's issues (Margaret Fuller, Elizabeth Cady Stanton, Louisa May Alcott, Virginia Woolf, Djuna Barnes, Tillie Olsen, Marge Piercy, and Margaret Drabble); two are known to be lesbians or bisexual (Virginia Woolf and Djuna Barnes); three lived with a female companion in a union comparable to marriage (Sarah Orne Jewett, Willa Cather, and Gertrude Stein); three are Jewish (Gertrude Stein, Lillian Hellman, and Grace Paley); seven are poets (Mary Sidney Herbert, Countess of Pembroke; Dorothy Wordsworth and Elizabeth Drew Stoddard (both wrote some poetry); Emily Dickinson; Mary Elizabeth Coleridge; Edith Sitwell; and Judith Wright.)

Twenty-five of the forty-two authors included in BCL are American writers: Phyllis Wheatley, Margaret Fuller, Elizabeth Cady Stanton, Linda Brent, Elizabeth Drew Stoddard, Emily Dickinson, Louisa May Alcott, Sarah Orne Jewett, Willa Cather, Gertrude Stein, Mourning Dove, Djuna Barnes, Lillian Hellman, Eudora Welty, Mary McCarthy, Tillie Olsen, Gwendolyn Brooks, Grace Paley, Flannery O'Connor, Ursula K. LeGuin, Toni Morrison, Marge Piercy, Joyce Carol Oates, Louise Gluck, and Leslie Marmon Silko.

Four held unconventional political beliefs (this is addressed below): Tillie Olsen, Judith Wright, Lillian Hellman, and Marge Piercy.

Six of the authors' works address unconventional perspectives on society or
controversial social problems and subjects. These authors are Lady Mary Wortley Montagu, Elizabeth Drew Stoddard, Jean Rhys, Tillie Olsen, Judith Wright, and Marge Piercy. One of the authors, Ursula K. LeGuin, is a science fiction writer.

Of the eight authors not included in *BCL*, four are poets (Anne Killigrew, Charlotte Mew, Anna Wickham, and Kamala Das). Four are American (Mary Rowlandson, Anne Killigrew, Anzia Yezierska, and Maxine Hong Kingston); three are English (Margaret Cavendish, Charlotte Mew, and Anna Wickham); and one is East Indian (Kamala Das). One of the authors, Maxine Hong Kingston, is Chinese American and one, Anzia Yezierska, is Jewish. Yezierska was a Jewish immigrant who lived in New York and wrote of the assimilation process.

Kamala Das writes in an “English fashioned to retain Indian cadences.” Maxine Hong Kingston is one of the only Chinese-American authors to be included in the canon of women’s literature.

Charlotte Mew was “passionately attached to another woman” and dressed as a transvestite. Margaret Cavendish was regarded as a freak by her contemporaries because of “the oddity of her writings and the peculiarity of her dress.” Anna Wickham was said to be “a woman who lived by her own rules” and “a rebellious wife.” Mary Rowlandson wrote about her captivity with a New Hampshire Indian tribe and described the Indians as humans rather than beasts.

An examination of the demographics listed above, suggests that the majority of female authors included in *BCL* are not women of color, but white, American Caucasians. The demographics also indicate that women who reflect unconventional perspectives or ideas in their works or lifestyles are less likely to be included in *BCL*, as are female poets.

The titles by the forty-two authors in the sample that appear in *BCL* are documented in this study. There are a total of 513 titles included in the three editions of *BCL*. Some titles are repeated in several editions. Therefore, 318 unique titles appear in *BCL* for the sample of authors. Table 3 presents the number of titles listed in each edition of *BCL* by chronological division.

As the table indicates, there is little difference between the three editions of *BCL* in the number of titles included in the representation of the Middle Ages and Renaissance and the seventeenth and eighteenth centuries. There is a slight decline in the number of titles included in the representation of the literature of the nineteenth century from *BCL1* to *BCL2* and an increase in the number of titles included in this representation from *BCL2* to *BCL3*. There is a steady decline in the number of titles included in the representation of the turn-of-the-century literature from *BCL1* to *BCL2* to

<table>
<thead>
<tr>
<th>Chronological Division of Titles included in <em>BCL</em> within Each NALW Division</th>
<th>Total Number of Titles Included in <em>BCL</em> within Each NALW</th>
<th>Number of Titles Included in <em>BCL1</em> (1967)</th>
<th>Number of Titles Included in <em>BCL2</em> (1975)</th>
<th>Number of Titles Included in <em>BCL3</em> (1988)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Middle Ages and the Renaissance</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>17th and 18th centuries</td>
<td>5</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>19th century</td>
<td>42</td>
<td>13</td>
<td>11</td>
<td>18</td>
</tr>
<tr>
<td>Turn-of-the-century</td>
<td>32</td>
<td>15</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>Modernist</td>
<td>217</td>
<td>111</td>
<td>54</td>
<td>52</td>
</tr>
<tr>
<td>Contemporary</td>
<td>215</td>
<td>42</td>
<td>58</td>
<td>115</td>
</tr>
<tr>
<td>Total number of titles</td>
<td>513</td>
<td>183</td>
<td>136</td>
<td>194</td>
</tr>
</tbody>
</table>

* These are not unique titles. Some of the titles are repeated in several editions of *BCL*. There are a total of 318 unique titles in this sample.
BCL3. This decline in the number of titles corresponds with the decline in the number of titles represented in the three editions of BCL for this same chronological division, as illustrated in table 3. The number of titles included in the representation of the modernist period decreases about 48 percent from BCL1 to BCL2 and decreases by two titles from BCL2 to BCL3. The high number of titles included in BCL1 may be attributed to the fact that the authors included in the modernist period reached their critical acclaim and had published a majority of their works prior to the publication of BCL1. The number of titles included in the representation of the contemporary period increases by just over 36 percent from BCL1 to BCL3 and increases by sixteen titles from BCL1 to BCL2. This may be attributed to the fact that approximately 40 percent of the contemporary authors included in NALW had not published their works until after 1970. Those who had published prior to the 1967 publication date of BCL1 and the 1975 publication date of BCL2 may not have achieved critical acclaim by BCL1 and BCL2 publication dates.

Eleven authors have the greatest number of titles included in the three editions of BCL. Table 4 presents the number of titles by each of these authors included in each edition of BCL by chronological division. There is a steady decline in the number of titles by Lady Isabella Augusta Gregory, a turn-of-the-century author, included in each edition of BCL.

Among the modernist authors, Gertrude Stein, Willa Cather, Elizabeth Bowen, and Edith Sitwell, the number of titles included in BCL progressively decreases in each edition. This again is consistent with the decline in titles represented for the modernist period in each edition of BCL portrayed in table 3. The representation of Virginia Woolf’s work in BCL does not follow this trend of decline. This may be attributed to her vast critical acclaim. The large number of titles included in BCL1 for these writers of the modernist period may be attributed to the fact that they had reached their critical acclaim and had published a majority of their works prior to the publication of BCL1.

All of the contemporary authors listed above, except for Mary McCarthy, have more titles included in BCL3 than included in either BCL1 or BCL2. This may be because these authors had not published their works until after 1970. Those who had published prior to the 1967 publication date of BCL1 and the 1975 publication date of BCL2 may not have achieved critical acclaim prior to the BCL1 and BCL2 publication dates.

For all of the authors listed above, except for Joyce Carol Oates, Margaret Drabble, and Eudora Welty, there is a reduction of titles included in BCL2 in comparison to BCL1. This supports Wadsworth’s criticism of the reduction in number of titles for specific authors in BCL2 in comparison to BCL1. The reduction of titles in BCL2 and BCL3 for Mary McCarthy and in BCL3 for Gertrude Stein and Elizabeth Bowen in comparison to BCL1 may be a result of the inclusion of collected works by these authors.

Willa Cather is represented by twenty-three titles in BCL1 and by two titles in BCL2 and three titles in BCL3. A majority of the titles listed in BCL1 are single stories, while BCL2 and BCL3 include a collection of short fiction and a collection of novels and short stories. The inclusion of these collections may also be the reason for omitting the individual titles in BCL2 and BCL3. The decline in the number of titles for the other authors cannot be attributed to the inclusion of collected works. Another possible theory for the reduction of titles by Willa Cather included in BCL2 and BCL3 is the removal of Willa Cather from the canon. By reducing the number of titles, the contributors of BCL2 and BCL3 may have participated in the removal of Willa Cather from the canon as did her critics in the 1930s and 1940s.

Heinzkill believes that publishers are a factor in the determination of the canon. “Texts are in print because they are canonical, a non-canonical text is not kept in print” and therefore cannot acquire a wide readership or a place in the


**TABLE 4**

**AUTHORS WITH GREATEST NUMBER OF TITLES INCLUDED IN BCL**

<table>
<thead>
<tr>
<th>Authors with Greatest Number of Titles Included in Each BCL within NALW Divisions</th>
<th>Number of Titles Included in BCL1 (1967)</th>
<th>Number of Titles Included in BCL2 (1975)</th>
<th>Number of Titles Included in BCL3 (1988)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Turn-of-the-century</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lady Isabella Augusta Gregory (1852-1932)</td>
<td>11</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td><strong>Modernist</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gertrude Stein (1874-1946)</td>
<td>32</td>
<td>27</td>
<td>9</td>
</tr>
<tr>
<td>Virginia Woolf (1882-1941)</td>
<td>28</td>
<td>23</td>
<td>20</td>
</tr>
<tr>
<td>Willa Cather (1873-1947)</td>
<td>26</td>
<td>23</td>
<td>2</td>
</tr>
<tr>
<td>Elizabeth Bowen (1899-1973)</td>
<td>25</td>
<td>19</td>
<td>18</td>
</tr>
<tr>
<td>Edith Sitwell (1887-1964)</td>
<td>17</td>
<td>16</td>
<td>3</td>
</tr>
<tr>
<td><strong>Contemporary</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doris Lessing (1919- )</td>
<td>24</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Joyce Carol Oates (1938- )</td>
<td>14</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Margaret Drabble (1939- )</td>
<td>13</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Mary McCarthy (1912- )</td>
<td>13</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>Eudora Welty (1900- )</td>
<td>12</td>
<td>8</td>
<td>8</td>
</tr>
</tbody>
</table>

1. A 1963 edition of *Selected Plays* by Lady Gregory is included in all three editions of BCL. *Seven Short Plays* is included in BCL1 and BCL2. BCL3 includes a 1976 publication of Lady Gregory’s autobiography.

2. BCL1 includes individual titles by Gertrude Stein. BCL2 and BCL3 include *Selected Writings of Gertrude Stein* and *Selected Operas and Plays of Gertrude Stein*. BCL3 also includes a selection that is not included in BCL1 or BCL2.

3. BCL3 includes the addition of four newer publications consisting of Virginia Woolf’s letters, diary, and unpublished autobiographical writings, as well as a complete book of shorter fiction.

4. BCL1 includes individual titles by Willa Cather. BCL2 and BCL3 both include a collection of short fiction, 1892-1912 and a collection of the novels and short stories of Willa Cather.

5. BCL3 includes a 1981 collection of Elizabeth Bowen’s short stories.

6. BCL1 and BCL2 include *Collected Poems* of Edith Sitwell’s. BCL2 and BCL3 include *A Poet’s Notebook*.

7. Two of the Joyce Carol Oates titles included in BCL2 are not included in BCL3.

8. The five titles of Margaret Drabble included in BCL2 are also included in BCL3.

9. BCL2 and BCL3 include a collection of Mary McCarthy’s literary essays.

10. Two of the eight Eudora Welty titles included in BCL1 are not included in BCL2 and BCL3.
TABLE 5
TYPE OF PUBLISHER IN SAMPLE INCLUDED IN BCL

<table>
<thead>
<tr>
<th>Type of Publisher</th>
<th>% of Publishers in NAWL Sample Included in BCL</th>
<th>% of Titles in NAWL Sample Included in BCL</th>
</tr>
</thead>
<tbody>
<tr>
<td>American trade</td>
<td>50</td>
<td>73</td>
</tr>
<tr>
<td>University</td>
<td>18</td>
<td>11</td>
</tr>
<tr>
<td>British trade</td>
<td>14</td>
<td>7</td>
</tr>
<tr>
<td>Small presses</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Unknown</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Academic trade</td>
<td>1</td>
<td>0.3</td>
</tr>
<tr>
<td>Australian trade</td>
<td>1</td>
<td>0.3</td>
</tr>
</tbody>
</table>

canon. Commercially motivated publishers publish those texts that will sell and generate profits, therefore controlling the materials available to consumers. Table 5 presents the type of publisher and percentage of publishers in the sample of fifty authors from NAWL included in BCL.

It should be noted that 23 percent of the trade publishers and 47 percent of the university presses listed in BCL for the sample distribute catalogs or lists specifically identifying titles relevant to women's studies or have established series in women's studies. By producing series or catalogs in women's studies, these publishers have identified the importance of and the market for women's studies. These trade publishers are contributing to and supporting the women's studies field.

Seven percent of the sample titles are published in England by trade publishers. Of the eighty-four publishing companies responsible for the publication of the sample included in BCL, six of these companies are small presses. Two of these small presses are religious presses; one is a feminist press, one is an African-American press, and one is a college press. In the sample included in BCL, one private press is responsible for the publication of seven titles. This press is Hogarth Press, founded by Virginia Woolf and her husband, Leonard Woolf, in the early 1920s and established in London. During the years 1922–60 Hogarth Press published five of Virginia Woolf's titles, one of Edith Sitwell's titles, and one of Gertrude Stein's titles included in BCL. These three authors are among those authors of the sample with the greatest number of titles included in BCL. The inclusion of the small press, Hogarth Press, may be because of the publicity associated with one of its owners, Virginia Woolf.

This sample of titles and publishers indicates that BCL tends to include trade publishing companies more often than university and small presses. This could be the result of the revenue and time trade publishers expend on advertising in comparison to that of university and small presses. Another possible reason for the large number of trade publishers included in the sample of BCL titles is that library-related journals tend to review titles published by a limited number of large mainstream publishers.

SUMMARY AND RECOMMENDATIONS FOR FUTURE STUDY

The results of this exploratory study give an indication of the number of women authors included in NAWL (an important canon of women's literature) who are also included in the three editions of BCL (an important canon of the academic library field). Since BCL is a recommended core collection for undergraduate libraries and the literature suggests it is used for collection development and selection as well as evaluation and assessment of academic libraries, it is important that future work examine and compare the authors and titles included in this core collection to undergraduate programs.

The women authors' movement between editions of BCL supports Robert
Alter's contention that authors move from the center of the canon to its margins, reflecting the values of those members of society who are in authority and who exert a symbolic power over the formation of the canon. It also reflects the evolution and growth of the women's studies field. The fluctuation of the number of titles included in BCL for this sample of authors may also be an indication of the mutability and instability of the entity of the canon. The reduction of titles by Gertrude Stein, Willa Cather, and Edith Sitwell from the first edition of BCL to the third edition suggests a decanonization of these authors.

Although 80 percent of the authors included in NALW are also included in BCL, the findings indicate that 55 percent of the women excluded from the library field canon are unconventional members of society rather than the societal norm. BCL, an important canon of the academic library field, again supports Alter's idea of the canon as "a reflection in any society of the values" supported or favored by a learned elite.

Sixty-four percent of the publishers included in BCL are trade publishers, indicating that titles published by trade publishers are more likely to be included in BCL than those published by university or small presses. This may be influenced by the publishers' control of the titles published, access to their public, trade publishers relationship with a learned elite, and the marketing strategies employed by trade publishers. This may also determine the titles reviewed in library journals, which tend to be published by a limited number of large mainstream publishers.

This exploratory study supports Alter's perspective, noted above, that the literary canon is a reflection of the values favored by a learned elite. The study also suggests that the learned elite may include the authors, editors, and contributors of core collections or lists, publishing companies, and review sources.

More investigation of the uses of BCL by academic librarians is needed to identify the extent of its utility. This study also indicates a need for further studies documenting women authors, African-American authors, and Native-American authors in BCL. A comparison of the number of women and minority authors included in each edition of BCL would also assist in documenting changes in the canon. An examination of the publishers of the titles included in the three editions of BCL by these women and minority authors would also be a great contribution to the library, women's studies, and literature fields.

It would be interesting to sample the number of male authors and their titles included in the literature section of each of the editions of BCL and to compare this sample to the number of female authors and their titles included in this section in each of the editions of BCL. Publishers of the titles of both samples could also be analyzed. Further study of the use of review materials in the selection process as well as the publishers of the titles included in these review sources is needed in the library field.

An investigation and analysis of the demographic profiles of the contributors to each edition of BCL would be advantageous in examining the core collection. This information would be useful in identifying those responsible for establishing the canon of the library field and in examining and comparing the trends and characteristics of the authors and titles included in each edition of BCL.

The NALW is an accepted canon in the field of women's studies, but is it an accepted canon in the field of literature? By using the 148 authors included in NALW as the sample, the inclusion of these authors in other literary anthologies attempts to answer this question. A comparison of the number of male and female authors included in other literary anthologies would also assist in documenting the inclusion of women in the canon. This comparison could also include minority authors in order to document their inclusion in the literary canon.

This exploratory study has identified some of the characteristics of BCL in relation to literature by women. It is only
a beginning or starting point. Additional questions pertaining to the women's studies and library fields have been identified by this investigation and need to be addressed. The women's studies field is relatively young in comparison to other fields and is continually evolving and growing. Future study and research is needed to reflect and document this evolution and growth.

REFERENCES

2. Ibid.
4. Ibid.
11. Ibid.
21. Stimpson, "Access or Impasse?"
22. Searing, An Introduction; and Stimpson, "Access or Impasse?"


26. Ibid., 248.


29. Laura Shapiro, “‘A’ is for Austen, ‘B’ Is for Bronte . . . ,” *Newsweek*, July 15, 1985, 64B–64F.


40. These categorizations are based on substantiated evidence and not conjecture.


42. Ibid., 2247.


45. Ibid., 72.

46. Ibid., 1404.

47. Wadsworth, “Review.”


### APPENDIX A

**Literature of the Middle Ages and the Renaissance**

<table>
<thead>
<tr>
<th>Julian of Norwich (1342–?)</th>
<th>Mary Sidney Herbert, Countess of Pembroke (1561–1621)</th>
</tr>
</thead>
</table>

**Literature of the Seventeenth and Eighteenth Centuries**

<table>
<thead>
<tr>
<th>Margaret Cavendish, Duchess of Newcastle (1623–74)</th>
<th>Anne Killigrew (1660–85)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mary Rowlandson (c.1636–c.1678)</td>
<td>Lady Mary Wortley Montagu (1689–1762)</td>
</tr>
<tr>
<td></td>
<td>Phillis Wheatley (c.1753–84)</td>
</tr>
</tbody>
</table>

**Literature of the Nineteenth Century**

<table>
<thead>
<tr>
<th>Dorothy Wordsworth (1771–1855)</th>
<th>Linda Brent (1818–98)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mary Shelley (1797–1851)</td>
<td>Elizabeth Drew Stoddard (1823–1901)</td>
</tr>
<tr>
<td>Margaret Fuller (1810–50)</td>
<td>Emily Dickinson (1830–86)</td>
</tr>
<tr>
<td>Elizabeth Cady Stanton (1815–1902)</td>
<td>Louisa May Alcott (1832–88)</td>
</tr>
</tbody>
</table>

**Turn-of-the-Century Literature**

<table>
<thead>
<tr>
<th>Sarah Orne Jewett (1849–1909)</th>
<th>Mary Elizabeth Coleridge (1861–1907)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lady Augusta Gregory (1852–1932)</td>
<td>Charlotte Mew (1870–1928)</td>
</tr>
</tbody>
</table>

**Modernist Literature**

<table>
<thead>
<tr>
<th>Willa Cather (1873–1947)</th>
<th>Edith Sitwell (1887–1964)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gertrude Stein (1874–1946)</td>
<td>Mourning Dove (Hum-Ishu-Ma) (1888–1936)</td>
</tr>
</tbody>
</table>

**Contemporary Literature**

<table>
<thead>
<tr>
<th>Stevie Smith (1902–71)</th>
<th>Ursula K. Le Guin (1929–)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lillian Hellman (1907–84)</td>
<td>Toni Morrison (1931–)</td>
</tr>
<tr>
<td>Eudora Welty (1909– )</td>
<td>Edna O’Brien (1932–)</td>
</tr>
<tr>
<td>Mary McCarthy (1912– )</td>
<td>Kamala Das (1934– )</td>
</tr>
<tr>
<td>Tillie Olsen (1913– )</td>
<td>Marge Piercy (1936– )</td>
</tr>
<tr>
<td>Judith Wright (1915– )</td>
<td>Joyce Carol Oates (1938– )</td>
</tr>
<tr>
<td>Gwendolyn Brooks (1917– )</td>
<td>Margaret Drabble (1939– )</td>
</tr>
<tr>
<td>Doris Lessing (1919– )</td>
<td>Maxine Hong Kingston (1940– )</td>
</tr>
<tr>
<td>Grace Paley (1922– )</td>
<td>Louise Gluck (1943– )</td>
</tr>
<tr>
<td>Flannery O’Connor (1925–64)</td>
<td>Leslie Marmon Silko (1948– )</td>
</tr>
<tr>
<td>Margaret Laurence (1926– )</td>
<td></td>
</tr>
</tbody>
</table>
Letters

To the Editor:

The recent article by Professor Julie Hallmark entitled "Scientists' Access and Retrieval of References Cited in Their Recent Journal Articles" (College & Research Libraries, 55 [May 1994]: 199–209) reported potentially interesting results, but her methodology may not give them adequate support. I believe that the following points should be clarified.

Hallmark selected nineteen journals from which to take the sample of articles, journals recommended by scientists and chosen through independent evaluations; the evaluations are attributed to Katz's Magazines for Libraries, 1989, which is general and dated. The list of titles chosen is small and does not adequately represent the disciplines. For example, the list for Biology omits basic titles in genetics and molecular biology, that for Chemistry consists of only three ACS journals, and Physics is represented by only the parts of Physical Review. Also, why are Nature and Science excluded, but PNAS included? Were impact factors or times cited considered? The titles on the list may be prestigious, but the groups seem narrow for the disciplines they represent.

The timing in this study is another concern. The sample letter is dated March 23, 1992, and the articles chosen for the sample were published during the last six months of 1991. Does this mean that an author could have been asked about one reference in a paper published nine months earlier thus written as much as twelve or eighteen months ago? How is the reliability of the author’s recall taken into account? Another related concern is whether the scientists had cited the reference in previous work, or if instead the citation was new to them. If it was previously cited, then it might be even more difficult to recall with accuracy how it was originally accessed or retrieved.

Some further methodological concerns. The scientists were given choices about access and retrieval of their references. How were these derived? Were they a result of pretesting, or drawn from another reliable(?) instrument? Also, what value was there in prefixing the sample to contain 60 percent citations from 1980–1991, 35 percent from 1979 or earlier, and 5 percent foreign language? Hallmark has already restricted her research to cited journal articles; with monographs, conferences and patents excluded this formula is more restrictive still. On the practical side, if a citation to a 1978 paper in German was randomly chosen, how would this be categorized? And when the data for access and retrieval are tabulated, ranges of percentages reflect how these articles were discovered and obtained, but these describe the aggregate set of scientists, not the individuals. Some may find most references by talking to colleagues while others may not find any this way. In order to see patterns of individual use and discovery of references, one must ask scientists how they find several of their references.

The identification of user needs is such a constantly popular and elusive topic that librarians have asked for better studies than have been done to date, studies with methodologies that yield valid and transferable results. This report suggests several ideas about scientists but these may not be justified. Because the author achieved both a high response rate and many comments, perhaps she could provide a more detailed interpretation of her data.

CHRISTINE S. SHERRATT
Assistant Science Librarian
Massachusetts Institute of Technology
Book Reviews


This volume of twenty-six presentations from the 30th Annual Clinic on Library Applications of Data Processing addresses the full range of issues raised by the emerging networked information environment. Researchers and practitioners who have assimilated the basic knowledge and issues of library automation and networked information, but who have not yet achieved the nirvana of an expert, will find herein a resource of great value. Beginners should avoid this compilation, as it is not a primer.

A number of emerging experts in this new field are represented—Clifford Lynch, James P. Love, Hope N. Tillman, Sharyn Ladner, and Diane Kovacs all contribute variations on the themes of harnessing the technology, utilizing the resources, and understanding the issues of the networked environment in libraries.

Emerging Communities may appear disjointed to some because it presents a diffuse array of essays and studies. The narrative analyses of Lynch and Love contrast with the rigorous methodological presentations of Tillman and Ladner and with OCLC's high-powered explorations of the Internet. Nonetheless the far-ranging nature of the network technologies themselves are well exposed and examined by this variety of approaches. Although the volume is dominated by narrative essays, a significant number of presentations do utilize quantitative analysis to make their points and raise questions. For example, an essay by Martin Dillon et al. on "The OCLC Internet Resources Project" brings OCLC's formidable technical resources to play in analyzing Internet File Transfer Protocol (FTP) sites. The initial analysis presents surveys of the twenty largest FTP sites, listing the Internet addresses of the sites, as well as the number, size, and type of files (e.g., text, images, executables, etc.). The OCLC researchers then present the results of an experiment that examined the feasibility of cataloging such files at FTP sites. A sample of three hundred files extracted from the examined FTP sites was randomly assigned to thirty primary participants for cataloging.

The article by Ladner and Tillman also utilizes survey methods to describe existing practices among special librarians. The authors identify the types of Internet functions being used by special librarians (e.g., e-mail, FTP, Telnet, etc.), how often these functions are used, and the rankings of perceived importance by special librarians of these resources. A two-level hierarchical listing of "Internet Use Categories" is a definite keeper for those interested in exploring the amorphous range of resources on the Internet.

The narrative analysis approach is best represented by Clifford Lynch's "The Roles of Libraries in Access to Networked Information" and James Love's "Current Issues and Initiatives in the Electronic Dissemination of Government Information." Lynch, as is usual in both his writings and his presentations, brings to bear an ability to clarify complex issues. In this essay he draws parallels between current conditions in libraries and earlier times in the broadcast industry. Among other subjects, Lynch explores the topics of free infor-
mation and the role of advertising in the changing information environment. He concludes by challenging librarians to convince those paying for the construction of our technological future that we librarians "can add value by furthering the objectives of the financiers."

James Love couples real-world activism aimed at changing the penurious dissemination of public domain information by the U.S. federal government with a comprehensive exposition of current legislation, policy, and bureaucracy as they relate to federal information policy. His synopsis of the Security and Exchange Commission's EDGAR project, the Department of Justice JURIS system, and Office of Management and Budget (OMB) Circular A-130 makes this a contribution that should be used in all graduate-level courses dealing with government information for at least the next twelve months—a shelf life typical of any work dealing with the existing technological and economic environment. A cursory examination of one element of the published OCLC data in this collection (the current size and number of files at the FTP site wuarchive.wustl.edu) shows an unsurprising steep increase in both figures since the very recent publication of OCLC's study.

Although the overall quality of this compilation will also make it a valuable item for historical purposes, some of the presentations are of the ubiquitous "look-what-we-did" genre. Such writings are valuable in other contexts, but they tend to clash with the overall scholarly nature of this book. As would be expected from one of the flagships of the profession, the Graduate School of Library and Information Science of the University of Illinois, these are high quality proceedings of a professional conference with work of current and relevant information for academic librarians.—Raleigh Clayton Muns, University of Missouri-St. Louis, St. Louis, Missouri.


As the first fully referenced, illustrated, and indexed resource guide to the Library of Congress collections on African-American materials, this work is an essential reference tool for librarians and sophisticated library users. Its aims are to ease the work of researchers who visit the library and to increase public awareness of the full range of the library's resources for the study of African-American history and culture.

The guide is chronologically arranged in three sections of nine chapters that span the years from the antebellum period to the Civil Rights era. Although the guide presents the initial story of African-American history and culture through the window of slavery, it ignores the history of the African American before the slave trade. There is no mention of LC's extensive African civilization collection or its works on African exploration of America before the slave trade, key components in the study of the African-American experience in the United States.

African-American Mosaic is a logistical blessing for researchers faced with the prospect of visiting three different buildings, secondary storage facilities, and many reading rooms to explore or access materials. Now researchers can identify and direct themselves to relevant LC materials via number, date, name, or title, as well as to other libraries and archival holdings.

The book reveals an impressive array of resources not generally known outside the Library of Congress. Previously obscure resources include, for example, the House Un-American Activities Committee collection of four thousand pamphlets that document "the activities and thinking of militant or extremist African American groups"; the collection of Daniel Alexander Payne Murray, an African-American bibliophile who worked for the Library of Congress for fifty-two years; and the LC Carter G. Woodson collection papers on Hiram Revels, the first African-American U.S. senator.
This work, however, has a conservative slant. Its terminology fails to correct past biases; for example, the reference to writer David Walker (1785-1830) as a "black militant," whereas abolitionist William Lloyd Garrison (1805-1879) is a "white radical." In addition, its representation of politics, science, and industry is weak; more should have been said about these important aspects of African-American history.

Nevertheless, the African-American Mosaic is a tool all should consult who wish to explore the rich African-American historical and cultural resources at the Library of Congress.— Itibari M. Zulu, University of California, Los Angeles.


In the Encyclopedia of Library History (EoLH) editors Wayne Wiegand and Donald Davis offer a handy, one-volume encyclopedia of library history. The word history in the title distinguishes it, at least in intention, from other library-limning lexica. In practice, however, some of the 275 articles have not much more historical content than entries in other encyclopedias, particularly the ALA World Encyclopedia of Library and Information Services (2d ed., 1993), with which the present title will inevitably be compared, and the Encyclopedia of Library and Information Science (1968—), which, indeed, it occasionally cites.

Too many of the articles fail to provide new information or a different perspective. Sometimes, however, a fresh perspective is achieved. One of the editors' stated goals was to focus on the library as an institution. Thus we find entries on military libraries, prison libraries, services to labor groups, fiction in libraries—topics other encyclopedias have ignored or treated only fleetingly. Articles on the library as institution, exemplified by "Film Libraries and Librarianship," constitute one of the major achievements of this new reference work.

The EoLH breaks subjects down into smaller units than some other reference works do, making it easier to find articles about major libraries without having to wade through the entire entry on a particular country. One result of the focus on institutions is that separate biographical entries are not included. Although some key figures in library history can be located with the thorough index, the EoLH is not the first place to look for biography of librarians. The index is also necessary to find standard terms such as bookmobile (found under "Itinerating Libraries") and Deutsche Forschungsgemeinschaft (listed as "German Research Society").

Organizing the work of more than 220 contributors is a daunting task. Quite a few of the authors write about subjects in which they have established reputations. Thus we have Paul N. Banks on conservation and preservation, Francis L. Miksa explaining classification, and E. Stewart Saunders writing on collection development. Most authors are drawn from the ranks of U.S. university libraries, although international librarianship is well represented. The editors write in the introduction about the difficulty in finding suitable contributors for each entry, and, indeed, a few contributors seem to be writing entirely out of their field. The quality of the contributions varies widely. A few entries are quite simplistic, offering very little substance, while others are extremely well written and informative. The entries on classification and collection development, in particular, are very well done, the former because it so elegantly and lucidly explains how librarians have attempted to organize classification, the latter because it takes a truly international and diachronic perspective on the subject.

The editorial decision to group smaller countries into cultural or geographic aggregate areas such as Francophone and Anglophone Africa probably saved some space. A side effect of this decision, however, is the large number of "see references" for country names (which are, of course, repeated in the index). The geographic grouping also leads to a disjunct and desultory quality in the articles, given the diverse library traditions within a geographic area. Some-
one interested in Cuban library history, for example, must dig out a few nuggets from five columns on the Caribbean.

The *EoLH* is certainly not an unwieldy tome, but that convenience comes at a price. The word limit for some articles was simply too small, forcing authors to write in vague generalities; for example, a certain library "moved ahead with core programs." And although the *Library Bill of Rights* is quite short, it is not quoted in the article on that topic. Because of their brevity, the entries for small countries are less informative than the longer articles for major countries. Bibliographical references—occasionally quite dated—have been deliberately restricted, with only one or two citations for the shorter articles, while the longest entries may have five to seven references.

The editors largely accomplished the difficult task of harmonizing and unifying the work of a great many contributors, and there are only occasional errors in foreign-language phrases. In their introduction they signal their hope to redress the inevitable imbalances and omissions in subsequent editions. Examples: there is no entry for the Linda Hill Library or for the Enoch Pratt, although the Boston Public Library can be found; bibliotherapy has its own entry, but bibliometrics does not. The treatment of the impact of technology on libraries is generally weak. While the discussion of chained books in medieval armaria is entertaining, I missed a good outline of the history of OPACs.

Despite the flaws of this work, the production of a reliable and informative, one-volume encyclopedia is a laudable accomplishment. The *EoLH*, with its historical focus, supplements and complements the practical side of library education; I wish there had been a book like this to place in my hands when I finished library school. However, since the volume has no tables, charts, or illustrations, the $95 price tag seems high.—John B. Rutledge, University of North Carolina, Chapel Hill.


The development of this report was supported by the Council on Library Resources. Its purpose is to assist librarians to "keep abreast of new developments...in order that they can shape the future, lay claim to crucial roles, and ensure that the new digital libraries reflect their own values and are not replaced by those of other professions." The objectives of the project were (1) to identify the literature published on this topic between the years 1983 and 1994; (2) to create a digital database of document surrogates; (3) to generate an analytical bibliography; and (4) to provide a synthesis of the ideas. The report has several useful features. First, the report can be retrieved at no cost via anonymous FTP from sils.umich.edu, which then allows the files to be searched and manipulated at will. The verso of the contents page carries detailed information on how to access the files, which are available in both Mac and DOS formats. ProCite software is necessary to use the DOS files.


The subdivisions under the main headings are helpfully specific. For example, 3. Digital Libraries is broken down to 3.1 Definitions; 3.2 Impetus; 3.2.1 Putting a Halt to Building New Facilities; 3.2.2 Reducing or Controlling Costs; 3.2.3 Harnessing Enabling Technologies; 3.2.4 Accepting the Access Paradigm Shift. This information is presented in a two-column format, with
quotations to the left and Drabenstott's summarizing commentary to the right. It is possible to read only her commentary to get a general overview of the issues and to ignore the actual quotations. The overall effect is similar to reviewing a researcher’s raw notes.

Section 9, “Digital Library Projects,” is particularly helpful to gain an overview of ongoing projects. Twenty-three projects are described by (1) Name, (2) Years active, (3) Principal institution, (4) Principal partners, (5) Objectives, (6) Content coverage, (7) Hardware/software, and (8) Sources of published information on the project.

Drabenstott pulls her commentary together into a synthesis in Section 12, “Whither Libraries?” In Section 13, “A Sense of Urgency,” she exhorts librarians to become involved at all levels in working with all players now shaping the library of the future. The tone in these sections is often strident. She warns repeatedly in several sections that “the direct involvement of librarians in the creation of the digital library will be necessary to ensure that this new form of library reflects our own values and that our values are not replaced by those of other professions or stakeholders.” She is not explicit as to what these values are and why they are not shared by other professions and stakeholders. This vagueness tends to lessen the impact of her assertions.

Drabenstott has brought together the key ideas of commentators and players involved in the modernization and transformation of scholarly communications from the library perspective. It is a highly useful benchmark.—Nina W. Matheson, Johns Hopkins University, Baltimore, Maryland.

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Portland State University, Oregon

### FILING

Filing is word-by-word (ALA, 1968)

### ABBREVIATIONS

Standard abbreviations are used except in titles. Names of some organizations, ALA, ACRL, LC, etc., are also abbreviated and are alphabetized as if spelled out.

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