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Editorial

What Is Research?

What is research? One campus within the California State University defines it as "the disciplined quest for human understanding." There are many other definitions. Each subject field seems to have its own unique approach to examining problems.

As a doctoral student in librarianship at Berkeley I learned that the basic structure of research consists of (1) a statement of the problem, (2) the setting of hypotheses, (3) the development of a methodology, (4) the conduct of the study, (5) the findings of the study, (6) the analysis of findings, and (7) the conclusions. Beware the consequences if your conclusions went beyond your data.

Indeed, the provision of data is often the primary product of research. Critical thinking in a broad sense, meaningfulness, and utility are not relevant issues in far too many situations. There are many incentives to focus narrowly and to manage one's research efficiently. For doctoral students this habit of the mind is practical; that is, one is more likely to finish the thesis. But, in my opinion, a side effect of this approach is that the most significant and relevant research questions are avoided.

In this editorial I would like to discuss briefly the significance aspect of research and the context of research, or one might say, its politics.

Research is in fashion. Thousands of undergraduates approach our reference desks each day announcing that they need assistance in completing their research assignments for class the next day. For many students research is something that can be completed with the speed of summer lightning. The net result is that research is frequently viewed as mere technique or as something amorphous and all-encompassing. For the pure researcher, however, research may be thought of as a way to look at the world more clearly and with greater insight. Unfortunately, the accumulation of research in all its various manifestations leads to clutter. The key thinkers are able to pick their way through. For the rest of us the clutter may impede clarity and insight.

If data are the major de facto products of a significant number of research efforts, then a new orientation or approach to research may be needed. In a very general way the results of research should enlighten the reader. For most applied research it may be hoped that action to correct a problem situation would be an indirect benefit in as many cases as possible. Many manuscripts that come to College & Research Libraries, however, are simply collections of data. A survey is conducted and the data are presented. This is not enough.

The referees who review the manuscripts ask questions such as Is the research issue significant? Are there any significant findings? Does the research add anything new to our current store of knowledge? Does the author present the results of other studies on the same topic? Does the research build upon other research on the same topic? Does the author provide any information, guidelines, or recommendations that might reasonably allow the reader to do something different, in an improved way, because of having read the article? And finally, What difference does the article make; that is, if the manuscript is not published would something of value be lost?
Critical thinking is central to most scholarly activity. It is also a key attribute of good research. The collection of data and adherence to a research method alone do not satisfy the critical thinking criterion. A scholarly article on an important issue that demonstrates the author's critical thinking is more interesting to many readers than a research-based study that presents data but no other evidence of the author's intellectual abilities, failing to satisfy the "so what" criterion.

My bias is toward robust scholarship. Take a meaty issue. Take an issue that has broad implications for the profession. Challenge yourself with its breadth. Overcome it through persistence. This is not the manager's approach. It is the approach of those who see something wrong and want to correct it. It is the approach of those who see research and publication as a means to improve the human condition through the context of librarianship. It is not research for its own sake to satisfy the criteria of graduation or promotion set by someone else. It is your own urge to know, to be right in the best sense of the word, and to help others through this knowledge.

In a future editorial I will discuss the profession's progress toward developing a set of important research questions. The questions developed by groups such as the Association of Research Libraries and the Council on Library Resources are frequently robust and with practical import for the profession and our clients. Likewise, the adoption of a statement, "Mission, Priority Areas, Goals," by the American Library Association at its 1986 Annual Conference, and the issuance of the strategic long-range "Planning Document: Goals and Strategies" provide the library community with the outline of a research agenda.

The content of research and how it is conducted are complicated subjects. Another interesting subject is the context of research. Research dollars are a closely guarded treasure and behind-the-scenes wars are fought to protect outside sources of funding. Recently, the nineteen-campus California State University (CSU) system attempted to expand its research role and to offer stand-alone doctorates. Approval was sought from the state for an expanded research mission. This interest brought the system up against the interests of the University of California (UC). It was viewed by some as a classic zero-sum situation in which the dollars to fund an expansion of the CSU research would reduce the research dollars available to UC.

The "expanded research mission" issue faced by many if not all of the nation's 601 comprehensive universities was addressed by Philip H. Abelson in a Science editorial (February 12). Limited institutional funds for equipment, supplies, and travel, as well as limited opportunities for obtaining federal grants are cited as important deficiencies. Abelson concludes,

In pursuing their goal to integrate research and teaching more effectively, the comprehensive universities are on the right track. Their cause merits support.

Some of my colleagues at non-ARL institutions have suggested that they face similar frustrations when trying to compete with "research" libraries for grant funds.

Another interesting context issue at comprehensive universities is that many of the faculty view themselves as teachers and not researchers. To move toward an expanded research orientation university administrators may have to do so over many strong objections. To facilitate this movement the definitions of what is research are moderated so that the interests of faculty are more easily accommodated. This evenhanded approach has won over many otherwise reluctant faculty. It has also allowed the debate about the appropriate research mission for formerly small teachers' colleges to be conducted in a relatively calm and reasoned manner.

Many articles have appeared in library literature about the research and publishing obligations of librarians. In this sense our concerns and interests parallel those of many of the faculty at the comprehensive universities.

An award for the best C&RL article in 1987 will be given in New Orleans to the authors of "Librarians and Faculty Members: Coping with Pressures to Publish" (November 1987). The authors state that "librarians' struggles with faculty status bring to mind an old maxim: happiness isn't so much getting what you want as wanting what you get." Many
will find it reassuring to know that library and instructional faculty frequently have mixed feelings about their research and publishing responsibilities.

Many of us need to work together to put research in all its manifestations on the right track thereby justifying the commitment of others to what can be a rewarding venture. Maybe then we will want what we get.

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Evaluating the Conspectus Approach for Smaller Library Collections

Larry R. Oberg

The conspectus method of collection evaluation has been successfully used since the late 1970s by the large member libraries of the Research Libraries Group and the Association of Research Libraries. Today, the Library and Information Resources for the Northwest (LIRN) and other conspectus-based collection assessment projects are demonstrating the value of this approach to smaller university, college, and public libraries as well. This article reviews the LIRN project, the LIRN modifications to the original RLG instrument, and the conspectus process. It also discusses conspectus methodology problems, staff time costs, and the value of the completed conspectus to an individual library or group of libraries.

One of the most vexing problems facing academic librarians, indeed all librarians, is the lack of adequate, reliable tools for evaluating our collections and services. We measure what is easiest to measure, Goldhor notes, most often process or input, not output variables.¹

Many of our traditional measures have been subjective and impressionistic and remain so today. For example, we determine the quality of our reference services by measuring patron satisfaction, the number of scheduled desk hours, and staff educational level and years of experience. Yet these determinants are ancillary to what we really want to know, which is, How accurate are our responses to patron questions?

We have not done much better evaluating our collections. We seem unable to compare them to the total universe of information or with collections in similarly sized institutions. Often, we do not know how well they match the curriculum and meet the needs of students and faculty.

In the face of proliferating new publications, severe inflationary pressures, and increasingly sophisticated competition at budget time, we cannot effectively compete for static or dwindling funds by arguing that we need more money because we have too few books or by reminding our provosts that the library is the heart of the institution. Instead, we must seek out, develop, and utilize measures that demonstrate objectively, both to administrators and to ourselves, how well we are fulfilling our role and mission.

Faculty and administrators, if they are to support our programs, must be reassured that requests for increased funding derive from a systematic, sustained planning and evaluation process. We must convince them that we are spending their money wisely by measuring, in other than subjective terms, the collection and service improvements resulting from higher-level funding.

One method of collection evaluation,

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the conspectus, fulfills at least some of our needs. This paper describes the conspectus collection evaluation process, discusses its problems and cost in staff time, and demonstrates its usefulness to smaller college, university, and public libraries.

**THE CONSPECATUS**

The conspectus is a collection assessment method that maps subject strengths and weaknesses within an individual library, a consortium of libraries, or a geographical region using standardized criteria and descriptions. The dictionary definition of *conspectus* is a survey or synopsis of a subject, but in library parlance it refers to an assessment methodology developed in the late 1970s by Paul Mosher of Stanford University and other Research Libraries Group (RLG) collection development officers for use by RLG librarians.2

"The conspectus was designed to produce comparable data to facilitate collection coordination among the large RLG libraries."

The conspectus was designed to produce comparable data to facilitate collection coordination among the large RLG libraries. Mosher recalls that the goal of the original development group was to describe "all major U.S. research libraries as part of the largest scholarly research resource collection the world has ever known."

Since its introduction by RLG, the conspectus has been adopted by the North American Collections Inventory Project (NCIP). Developed in 1983 by the Association of Research Libraries’ Office of Management Studies, NCIP is using the conspectus to generate data for an online inventory of North American research collections to assist scholars in finding the research materials they need.4

Conspectus methodology is used by North American academic and public libraries of all sizes and, increasingly, by foreign libraries as well. In addition to individual institutions such as Albion College Library, groups using the conspectus in the United States include the Alaska Statewide Inventory Project, the Illinois Statewide Collection Development Project, New York’s METRO (Metropolitan Reference and Research Library Agency), Idaho’s VALNet (Valley Library Network), the Boston Library Consortium’s Collection Analysis Project, and the Library and Information Resources for the Northwest (LIRN), a regional project established in 1984 and underwritten by the Fred Meyer Charitable Trust, a private foundation located in Portland, Oregon.6

**LIRN**

LIRN’s thrust was fourfold. It sought to assess the depth and quality of the information resources available in the region; establish a shared database for manipulating, analyzing, and displaying the information generated by the assessment; foster and encourage cooperation and resource sharing among all types and, importantly, all sizes of libraries; and finally, establish a technologically advanced regional document delivery system for cost-effective information exchange.

The first charge to those of us who participated in the LIRN project was to locate or develop a methodology to assess the collections of large research institutions, small colleges, and special and public libraries of all sizes. The only instrument that held promise of fulfilling our needs was the RLG conspectus. It was modified to more precisely describe the collections of the many small libraries of the region that were expected to participate. The LIRN version is called the Pacific Northwest Conspectus.

Today, the LIRN assessment program is moving toward completion. More than 210 Pacific Northwest libraries, both large and small, academic, special, and public, are finishing or have finished at least some of the twenty-four basic subject divisions of the conspectus.7 The data collected are reported to the Pacific Northwest Conspectus Database operated by the Oregon State Library Foundation in Salem. Textual and graphic reports comparing collec-
tions at varying levels of specificity by library location, type, budget, funding source, school enrollment, etc. are produced in batch mode.  

THE ASSESSMENT PROCESS

The Library of Congress classification system (LC) forms the general framework of the original conspectus, although LIRN has developed a Dewey-based version as well. Subsets of the collection—subjects—are evaluated and ranked on a scale of 0 to 5.

The Pacific Northwest Conspectus begins with a subject-by-subject examination of a library’s collection. Each subject or subset of a subject is given three separate numerical ratings that rank the existing collection level (CL); the acquisitions, or monetary, commitment (AC); and the target level or collection goal (GL). The acquisitions commitment and the collection goal may be higher or lower than the current collection level.

The subject rankings are amplified by language codes: E, predominately English; F, selected foreign-language titles; W, wide selection of foreign-language titles and; Y, primarily foreign-language titles. Detailing language coverage adds a significant dimension to the description of a collection. The alphanumeric values assigned to each subject, for example, 3AF, are then recorded on the conspectus work sheets.

Completion of the work sheets requires concise comments to describe strengths, weaknesses, and other characteristics of the cataloged collection that are not brought out by the LC or Dewey classification systems. Examples of these comments are “strong in U.S. government documents,” “weak journal collection,” and “have excellent uncataloged radical culture collection from the 1960s.” In the Pacific Northwest Database, the comments, which may be up to ninety characters in length, are retrieved in textual reports (see figures 1–3).

EXAMINING THE COLLECTION

For the most part, the methods used to examine collections are traditional. They include shelf scanning, list checking, the compilation of statistics, and citation-reference studies. But any method that sheds light on the depth of a collection may be employed.

Shelf scanning, a lost art for many librarians, produces immediate and tangible results by revealing broken runs of serials, little or heavily used materials, a lack of up-to-date materials, and other lacunae or strengths. It is accomplished quickly and easily and builds upon the subject expertise of teaching faculty and librarians.

List checking is the most time-honored method of collection evaluation. Specialized and selective lists are published in most subject areas by accrediting bodies, professional associations, researchers, bibliographers of all stripes, librarians, and, of course, the American Library Association. A major tool for this type of assessment becomes available in 1988 when ALA publishes the third edition of Books for College Libraries.

The subject experts most likely to be pressed into service by academic librarians are the teaching faculty. On most college campuses, teaching faculty share selection responsibilities with librarians and, in any event, are familiar with the bibliographical resources of their subject specialties.

The compilation of statistics and various numerical counts provides useful information on the quality of a collection. Expenditures, the number of volumes added per year, shelflist counts, the relative strength and use of the book and the periodicals collections, and an analysis of interlibrary loan and circulation patterns are examples of statistics usefully gathered for conspectus-based collection assessments.
FIGURE 1
Pacific Northwest Conspectus Work Sheet—LC—Version 11/87, page 1

(Adapted from RLG Conspectus Worksheet Form)
### Library Listings

<table>
<thead>
<tr>
<th>LIBRARY</th>
<th>CL</th>
<th>AG</th>
<th>GL</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Oregon Community College</td>
<td>1E</td>
<td>1E</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mt. Hood Community College</td>
<td>2E</td>
<td>2E</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clackamas Community College</td>
<td>1E</td>
<td></td>
<td></td>
<td>2950 total volumes but all, or nearly all, old.</td>
</tr>
<tr>
<td>Whatcom Community College LRC</td>
<td>1E</td>
<td>1E</td>
<td></td>
<td>carefully selected ref. titles suppl. with DIALOG, DATALINE, WILSONLINE + nonprint support</td>
</tr>
<tr>
<td>Clark College - Cennell Library</td>
<td>1E</td>
<td>1E</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Statistics

<table>
<thead>
<tr>
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<th>CL</th>
<th>AG</th>
<th>GL</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Oregon Community College</td>
<td>1E</td>
<td>1E</td>
<td></td>
<td>ECO003 = 1E CL, 0 AG; ECO004 = 1E CL &amp; 1E AG; rest of category out of scope.</td>
</tr>
<tr>
<td>Mt. Hood Community College</td>
<td>2E</td>
<td>2E</td>
<td></td>
<td>75 volumes.</td>
</tr>
<tr>
<td>Clackamas Community College</td>
<td>1E</td>
<td></td>
<td></td>
<td>statistical theory &amp; methodology-la collection level; U.S. 1a 1b coll. &amp; acquisition level.</td>
</tr>
<tr>
<td>Whatcom Community College LRC</td>
<td>1E</td>
<td>1E</td>
<td></td>
<td>need new materials on statistics at basic level.</td>
</tr>
<tr>
<td>Clark College - Cennell Library</td>
<td>1E</td>
<td>1E</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Economics

<table>
<thead>
<tr>
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<th>CL</th>
<th>AG</th>
<th>GL</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rogue Community College</td>
<td>1E</td>
<td>1E</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mt. Hood Community College</td>
<td>2E</td>
<td>2E</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whatcom Community College LRC</td>
<td>1E</td>
<td>1E</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clark College - Cennell Library</td>
<td>1E</td>
<td>1E</td>
<td></td>
<td></td>
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</tbody>
</table>

### Economic Theory

<table>
<thead>
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<th>AG</th>
<th>GL</th>
<th>COMMENTS</th>
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</thead>
<tbody>
<tr>
<td>Central Oregon Community College</td>
<td>1E</td>
<td>1E</td>
<td></td>
<td>110 volumes.</td>
</tr>
<tr>
<td>Rogue Community College</td>
<td>2E</td>
<td>2E</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mt. Hood Community College</td>
<td>2E</td>
<td>2E</td>
<td></td>
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<tr>
<td>Clackamas Community College</td>
<td>1E</td>
<td></td>
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</tr>
<tr>
<td>Whatcom Community College LRC</td>
<td>1E</td>
<td>1E</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clark College - Cennell Library</td>
<td>1E</td>
<td>1E</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Legend

- 0 = Library Does Not Collect
- 1a = Minimal, Uneven Coverage
- 1b = Minimal, Well Chosen
- 2a = Basic Information
- 2b = Augmented Information
- 3a = Basic Study (undergrad.)
- 3b = Intermediate Study
- 3c = Advanced Study
- 4 = Research Level
- 5 = Comprehensive
- E = English Language
- F = Selected Foreign Language & English
- W = Wide Selection in Foreign Language
- Y = Primarily in One Foreign Language

### FIGURE 2

Oregon and Washington Community Colleges—All LC Categories in the Business and Economics Division
<table>
<thead>
<tr>
<th>Library</th>
<th>0</th>
<th>1a</th>
<th>1b</th>
<th>2a</th>
<th>2b</th>
<th>3a</th>
<th>3b</th>
<th>3c</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idaho State Library</td>
<td></td>
<td>CL</td>
<td></td>
<td></td>
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<tr>
<td>Boise Public Library</td>
<td></td>
<td>CL</td>
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<tr>
<td>Boise State University Library</td>
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<td>CL</td>
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</tr>
<tr>
<td>North Idaho College Library</td>
<td></td>
<td>CL</td>
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</tr>
<tr>
<td>Caldwell Public Library</td>
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<td>CL</td>
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<tr>
<td>Lewis-Clark State College</td>
<td></td>
<td>CL</td>
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</tr>
<tr>
<td>Ricks College, David McKay LRC</td>
<td></td>
<td>CL</td>
<td></td>
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<tr>
<td>East Bonner County Library</td>
<td></td>
<td>CL</td>
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<tr>
<td>Soda Springs Public Library</td>
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<td>CL</td>
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<td></td>
</tr>
<tr>
<td>Twin Falls Public Library</td>
<td></td>
<td>CL</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>University of Idaho - Law Library</td>
<td></td>
<td>CL</td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Legend:  
NA = Not Assessed  
0 = Library Does Not Collect  
1a = Minimal, Uneven Coverage  
1b = Minimal, Well Chosen  
2a = Basic Information  
2b = Augmented Information  
3a = Basic Study (undergrad.)  
3b = Intermediate Study  
3c = Advanced Study  
4 = Research Level  
5 = Comprehensive  
CL = Current Collection  
AC = Acquisition Commitment  
GL = Collection Goal
Citation-reference studies, essentially locally developed critical bibliographies, are constructed when reliable published lists are not available. These studies are useful for assessing emerging and interdisciplinary fields.

All or a combination of these and other methods of collection evaluation may be used in the conspectus collection evaluation process, the configuration chosen varying from subject to subject. For example, measuring the shelflist is not a particularly productive technique in a field such as chemistry where scholarly communication is carried on almost exclusively through the journal literature.

In sum, librarians rely upon their professional judgment to choose the appropriate combination of assessment methods, to recognize when a subject has been adequately analyzed, and to assign the numerical values.

ASSIGNING COLLECTION LEVEL CODES

When the evaluation of a subject is completed, the numerical values to be assigned are entered on the conspectus work sheets. These values range from 0, or out-of-scope, through 5, or comprehensive. Levels 1 through 3 are subdivided by the letters A and B. The finer distinctions made possible by the subdivision of the three lower levels, unnecessary for the very large libraries using the original conspectus, were adopted by LIRN from Alaska Statewide Inventory Project practice. These subdivisions make possible more accurate description of smaller collections.

These numeric values are preferably referred to as collection level codes, but sometimes as collection intensity level indicators. Each collection level code has a standard definition that describes the types of client activities supported by collections developed to that depth. These descriptions serve as the authority for assigning the codes. For example, a 2B-level collection supports instruction through the lower division or the basic information needs of public and special library patrons; a 3B-level collection supports instruction through the master's level or the advanced independent study needs of public and special library clientele.

The conspectus is collection, not client, based. The collection level codes refer to the quantity and types of materials that are included and do not rate the collection as good or bad. Thus, a collection developed to a lower code level may quite adequately meet the information needs of a particular clientele.

In the past, groups adopting the conspectus, including RLG, NCIP, the Alaska Statewide Inventory Project, and LIRN, have developed their own descriptions of the client activities that each collection level code supports. A proposed uniform code structure for all libraries was recently developed by Marcia Pankake and Joseph J. Branin of the University of Minnesota. Prepared for inclusion in the new edition of the ALA Guidelines for Collection Development, the Pankake-Branin codes were approved in January 1988, at ALA's Midwinter Meeting.

At Albion College, librarians are using these codes in draft form to assess their collections and expect them to emerge as the national standard.

LEVELS OF SPECIFICITY

The Pacific Northwest Conspectus offers the possibility of evaluating subjects at three hierarchically ordered levels of specificity, division, category, and subject. At the division level, 24 subjects are ranked; at the category level, 500; and at the subject level, somewhat less than 4,000.

The category, or 500 subject level, does not occur in the RLG conspectus and was developed by LIRN from National Shelflist Count subject ranges for the Pacific Northwest version. LIRN-developed Dewey and LC work sheets are available at the category and subject levels.

The subdivision of the three lower collection level codes, the development by
LIRN of the Dewey work sheets, and the category level of assessment are contributions of great importance to the profession. LIRN's work sheets, training manual, and database software are available to librarians outside of the region.11

In assessing their collection of approximately 380,000 volumes, Albion College librarians found the subject level the most useful, although the conspectus approach allows free movement from one level to another. For example, librarians who collect little or nothing at all in agriculture may wish to rank that subject at the division level, indicating that their library has a 1A or even a 0-level collection.

On the other hand, with a particularly weak, strong, or uneven collection in biology, the librarian may choose to rank individually all twenty-five subdivisions of fungi at the detailed subject level to emphasize these characteristics. At the category level, fungi is not subdivided and requires a single ranking. It is appropriate to move freely between division, category, and subject levels to describe strengths and weaknesses.

VALIDATION OF DATA

Various techniques are employed to ensure accuracy and comparability between the collection level codes assigned by librarians at different institutions. Librarians using the conspectus in consortial arrangements organize group training programs, use or develop standard training materials and methods, and conduct validation studies. Inconsistencies in reporting data are also noted and corrected through continuing entry, use, and comparison of the data.

The Pacific Northwest Conspectus Database staff report that some discrepancies are occurring in the data reported to them, particularly at the two and three levels. Staff members are developing a method for validating data reported at the particularly troublesome 3-A level.12

At Albion College, responsibility for completing the different divisions of the conspectus is assigned to individual librarians. However, the completed work sheets are reviewed in detail by all librarians participating in the project.

WHAT IT COSTS IN STAFF TIME

Completing the conspectus may appear to be a daunting prospect. Indeed, anyone contemplating it should weigh the cost in staff time against the benefits. Further, the conspectus is a living document that requires continuous review and revision. Flexibility can be exercised in scheduling its completion, however, and librarians may choose to complete only some of its twenty-four primary divisions.

At Albion College, librarians plan to complete all divisions of the Pacific Northwest Conspectus within a two-year period. They estimate that an average of fifty-five hours is required to evaluate a division at the subject level and somewhat less at the category level. Of these hours, librarians use approximately twenty-five; paraprofessionals, twenty; and faculty, ten. The amount of time required to complete the conspectus will vary, of course, from institution to institution.

THE VALUE OF A COMPLETED CONSPECTUS

The completed conspectus constitutes a detailed overview or map of a collection that is different from and complementary to title-based inventories, for example, OCLC and LIRN. The work sheets serve as the core of any collection development or coordinated cooperative collection development policy statement and as important selection tools for faculty and librarians. The data contained on the work sheets permit detailed comparison of local collections with collections in other libraries where librarians have also completed the conspectus.

The conspectus work sheets are used manually for many functions, but statistical reports and comparative studies are generated more efficiently and effectively when the data are entered into a common database shared by a group of libraries. The detailed comparative reports that it is then possible to produce are essential to librarians who have or plan to have coordinated cooperative collection development arrangements with other libraries.

Whether or not an automated database
is established, the completed conspectus provides librarians with the data necessary to respond systematically to budget reductions or increases and changes in institutional roles and missions, curriculum, and user patterns. In a word, it gives us a rational basis for initiating and reacting to change.

At the local level, perhaps the most important outcomes are measured in human terms. The skills of the librarians who participate in the conspectus process are upgraded. Mosher suggests that librarians "communicate more knowledgeably about their collections," are better prepared to make selection and management decisions, and "generally take better control of the collection under their stewardship."13

Teaching faculty also improve their selecting skills and knowledge of the library through their participation. They come to understand that a good collection is more than the sum of the books they have requested for purchase and that the process of building excellent collections involves more than judicious selection.

The conspectus assessment process encourages bonding between teaching faculty and librarians and reassures teaching faculty that the collecting goals of librarians correspond to their needs and those of their students. At Albion College, completing the conspectus is generating a high level of interaction between teaching faculty and librarians. Through this collaborative process, which includes rational discussion and heated argument, a shared vision of our collecting goals is emerging.

Finally, the completed conspectus is an excellent tool for communicating with college administrators and funding agencies. It can generate powerful arguments for improved budgets and assures those to whom we report that we understand, control, and accurately predict our programs, in effect, that optimum use is being made of the funds they grant us.

Many of these benefits accrue through the process of completing the conspectus. If the assessment is hastily or inadequately prepared by librarians who rely too heavily upon their intuitive knowl-
and effort even though completion does not promise the immediate benefits of interinstitutional comparison. They do expect, however, that other libraries or groups of libraries with which they identify will come to join them in completing the conspectus. Then, intensified consortial, shared, and coordinated cooperative collection development arrangements will be possible, and the value of the local assessment enhanced.

Collection development is one of our most complex and intellectually challenging tasks. The conspectus is the best instrument we have for analyzing, evaluating, maintaining, and coordinating what is our most fundamental charge as librarians, the collection. By completing the conspectus, we contribute directly to the embryonic effort to inventory and describe the information resources that support our cultural and economic development as a nation.

The conspectus is not a perfect tool. It will not solve all of our collection development problems, but it has begun to serve us well.

REFERENCES AND NOTES

11. Pacific Northwest Collection Assessment Manual (Portland, Ore.: Fred Meyer Charitable Trust; Library and Information Resources for the Northwest, 1986), 90p; information on these products may be obtained from Peggy Forcier, Director, Pacific Northwest Conspectus Database, State Library Building, Salem, OR 97310-0642.
The RLG Conspectus: Its Uses and Benefits

Anthony W. Ferguson, Joan Grant, and Joel S. Rutstein

The Conspectus is an online subject inventory of library collections that facilitates cooperation and collaborative collection development. It also yields a number of practical internal benefits for participating libraries. This article explains why the Conspectus is a necessary and useful tool, describes its structure and operation, and illustrates how it can and is being used both to foster cooperation among North American libraries and to improve the management of resources within individual libraries.

Orth American research libraries, irrespective of size or budget, share at least two things: an insatiable desire to acquire a major share of the world’s informational output and the lack of funds to accomplish this feat individually. Five years ago, thirty-four countries reported publishing more than 1,000 titles annually with a combined output of nearly 500,000 titles. Only two of the more than 100 libraries belonging to the Association of Research Libraries (ARL) added even 40 percent of that amount. Twenty-two managed to acquire 20 percent and eighty obtained less than 10 percent of that year’s published output.1

Individually these libraries may lack the funds to acquire a year’s title output. Collectively, however, they exhibit an enormous information gathering capability. Currently, ARL libraries spend a total of more than $350 million per year on library materials.2 Although 80 percent of cataloged materials show some duplication, together the ARL libraries have the financial capability to collect nearly everything of value.3 If they do not, the problem lies in the inadequate stewardship of these resources.

Currently, the devalued dollar, the general downturn in the market, changes in tax laws, sluggish state economies, as well as federal budget deficit reductions are affecting libraries. Although these problems provide impetus for cooperative action, the end result has been individualized scrambles for survival and procrastination instead of collaborative resource development. While most of these problems are cyclical, their overall effect has led to short- rather than long-term solutions to the problem of inadequate coverage of the world’s production of knowledge. A few of the largest libraries can maintain or advance their collecting standards but most

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are unable to keep up. Neither library nor academic administrators have pursued what is clearly in the national interest because the immediate problems facing each institution inhibit a long-term collective solution to the overall problem.

"The Research Libraries Group Conspectus supplies a framework that encourages selectors to think collaboratively and direct funds on targeted weaknesses rather than on unneeded duplication."

Fortunately, a new tool for collaborative behavior has emerged, enabling North American research libraries to provide better coverage and allowing individual libraries to determine what subjects are being adequately covered for research purposes elsewhere and what areas need additional coverage. This tool, the Research Libraries Group Conspectus, supplies a framework that encourages selectors to think collaboratively and direct funds on targeted weaknesses rather than on unneeded duplication. It can greatly facilitate stewardship of the nearly $350 million spent this year by the largest research libraries. Use of the Conspectus can also lead to practical internal benefits as well.

The Conspectus was produced by those interested in pragmatic approaches to resource sharing. In 1974, collection development officers from the initial four Research Libraries Group institutions (Columbia, Harvard, Yale, New York Public) met to compare policy statements and find ways of coordinating collecting activities. In 1978, these four plus counterparts from Cornell, Chicago, Princeton, Stanford, and the Library of Congress (LC) heard a presentation by John Finzi from LC. Emphasizing that no one library could possibly acquire all of the world's publishing output, Finzi called for a national plan to distribute collecting responsibilities. What emerged from subsequent discussions was an inventory, the "Conspectus" of collecting activity upon which cooperative endeavors might be built.4

**STRUCTURE**

The Conspectus is essentially a survey indicating the depth of past collecting (existing collection intensity) and the current collecting depth (current collecting intensity). The Conspectus is structured on the more than 5,000 ranges of LC classification system numbers. Libraries indicate their past and current collecting practices by a 0 to 5 scheme of values for each call number range.

0 Out of scope
1 Minimal
2 Basic information
3 Instructional support
4 Research
5 Comprehensive

To clarify further what is being collected a range of language suffixes are added:

E for primarily English-language material
F for selected foreign-language material
W for wide selection of foreign-language material
Y for material primarily in one foreign language

For example, a library that in the past had collected at the instructional support level (3) but now was collecting at the research level (4) for the Spanish literature of Venezuela would report an existing collecting strength of 3F or Y and a current collecting intensity of 4F or Y for the LC classification PQ8530–8549.

The Conspectus is the matrix of collection depth indicators for all of the participating libraries. It can be used in either print or online computer versions. Currently, data for nearly all subjects have been collected from more than thirty libraries. Although the database is maintained by RLG, it contains information from both RLG and non-RLG libraries. The integrity of the inventory is overseen by the RLG Subcommittee on the Prospects. To help libraries confirm the accuracy of their collecting intensity levels and compare their collections with others of the same reported intensity levels, verification studies and benchmark tests have been developed.
USE

The success of the Conspectus as a resource-sharing tool and in other applications depends upon the interest and initiative of university administrators, scholars, and librarians who recognize the need to work cooperatively to ensure maximum access to scholarly information.

Use of the Conspectus has been hindered by the misunderstanding that it would magically produce cooperation in and of itself. This is not the case, nor have those deeply involved in its use made such claims. The Conspectus is a tool, a notepad that records past and present strengths and weaknesses. For library administrators who opt for the cooperative solution to "too many books and too few dollars," the Conspectus shows where the strong collections are and records agreements on who will collect what and at what level in the future. The Conspectus is an aid to cooperation but should not become the goal of this activity. The goal is to improve the stewardship of funds through better communication among those building collections to acquire, make accessible, and preserve the world's scholarly production for the national community.

The Conspectus is evolving as just such a tool. Experiments with its use are underway at the national, state, local, regional, and international levels. It has also proven to be a valuable management tool within individual libraries.

"To provide protection for these 'endangered species,' the concept of 'primary collecting responsibility' (PCR) was established."

NATIONAL USES OF THE CONSPектUS

Research Libraries Group

The development of the Conspectus has enabled RLG to compare collections and collecting strengths among its members. As a result, certain subject areas have been identified as unique or not heavily collected by more than one or two libraries. To provide protection for these "endangered species," the concept of "primary collecting responsibility" (PCR) was established. Strong libraries in these specialized areas are identified and requested to assume responsibility for a PCR, committing to continued collection to ensure that the strength will be maintained within the consortium. Given the strength of many RLG libraries, PCRs tend to be restricted in scope.

Recently, RLG has considered expanding PCRs to achieve even greater coverage by assigning them to two or more libraries with strong collections who would collaborate in major "bread and butter" areas of scholarship. A contrasting plan is also being developed to use PCRs during a time of severe economic downturn. In this scenario, "contingency PCRs" would be created which "would entail a pledge by each institution not to reduce its collection intensity for certain broad, designated subject areas below a 4-level (research level) in an economic emergency."

Conspectus use within RLG, however, has not been restricted to the acquisition of research material. It is also being used to share responsibility in cooperative preservation. RLG libraries recently agreed to focus on two levels of preservation activity: preserving high-use items identified locally and another set of items, irrespective of use, as a part of the consortial national preservation effort. Using the Conspectus as a guide, a "national collection" consisting of one or more individual, strong research-level subject collections will be established. Libraries will accept a Primary Preservation Responsibility (PPR) for portions of their collections they want to preserve. Participation in the program is voluntary and will focus on microfilming published, paper-format materials with imprint dates between 1850 and 1950. Libraries outside RLG will also be encouraged to participate. RLG is seeking funds to defray the costs of this cooperative effort. RLG's libraries have also recently agreed to annotate the Conspectus with collection specific preservation details, e.g., the time parameters of the ma-
material being preserved, source of funding, cooperative partners, method of preservation being employed, and number of volumes.

Several RLG libraries have also employed the Conspectus as an aid in seeking funds for converting card catalogs to machine-readable records. It has been used for similar purposes in a variety of shared cataloging discussions during the past few years.

Association of Research Libraries

Without doubt, the most successful and widespread use of the Conspectus at the national level (outside of RLG) is the ARL North American Collections Inventory Project (NCIP). ARL concluded that major research libraries must cooperate if they are to provide adequate support to their users. It examined various approaches and decided that the RLG Conspectus provided the best opportunity for success. A test of the instrument was conducted by a group of non-RLG libraries in Indiana. Its success led to the inauguration of NCIP, and the effort was expanded to include the full ARL membership. Recently it was announced that more than 80 percent of the 107 ARL member libraries were involved in or were considering Conspectus use.

State and Regional Experiences

Successful Conspectus-based resource sharing has been undertaken at the state and regional level. In both Colorado and Alaska statewide projects have included collection assessments modeled after the RLG Conspectus and standardized collection development policy statements for all participating libraries. The Colorado project, which began as a cooperative acquisitions program for unusual or expensive materials, initially included only research libraries. Now, however, the State Library has urged that the scope be broadened to include colleges, community colleges, and public libraries. The work in Alaska successfully modified the Conspectus for use by small libraries. Through their collection analyses the Alaskans have discovered unique caches of "Alaskania materials" in even the smallest public libraries.

The Alaska experience served as a model for regional effort conducted in the Pacific Northwest, sponsored by the Library and Information Resources for the Northwest (LIRN). They modified the RLG Conspectus to allow effective use by both small and large libraries. With the help of ARL, they also developed a regionwide training program. LIRN recently awarded grants supporting cooperative regional efforts based upon gathered data.

In New York State, legislation has made funding available to academic libraries participating in regional coordinated collection development plans. The plan for metropolitan New York encompasses the collections of two ARL/RLG libraries in addition to sixty academic libraries ranging from medium-sized to very small. Beginning this year, the Conspectus, as modified by LIRN, will be used as the group’s collection analysis instrument. With it, these libraries, which are geographically close yet tremendously diverse in the nature and purpose of their collections, will have a common means of evaluating their collections and communicating their strengths and weaknesses.

In Indiana the universities of Purdue, Notre Dame, and Indiana were chosen by ARL to test the usefulness of the Conspectus and to analyze the work involved in completing the process. One result of that group’s collaboration was establishing communication channels among the bibliographers of the three institutions. Their work has in turn coincided with a science Conspectus analysis done by the Committee on Institutional Cooperation (CIC), consisting of the Big Ten institutions and the University of Chicago. Indiana University participated in yet a third regional cooperative project with the University of Michigan. Those two institutions shared a Mellon grant to strengthen their collective Slavic resources. Conspectus collecting level indicators were used to coordinate collecting responsibility and avoid duplication. The Indiana example illustrates how the Conspectus provides a standard means of communication that cuts across...
organizational lines. Other regional NCIP efforts are underway in the Southeast and in California.

**Subject- and Language-Based Uses**

The Conspectus-generating process brings bibliographers together to discuss what each is doing. A subcommittee of the Seminar on the Acquisitions of Latin-American Library Materials, which had earlier distributed country/subject collecting assignments, is now examining the Conspectus to see how these responsibilities might be refined using the Conspectus. They have collected data for several non-RLG libraries as well. Several RLG subject- and language-based programs have used the Conspectus to further their program goals: East Asian libraries within RLG have made PCR assignments for obscure topics not collected by a single library at the research level and have employed the Conspectus to plan a cooperative preservation microfilming project. The RLG Law Program Committee is developing a verification study to ensure that definitions of collection depth indicators are uniformly interpreted. The RLG Music Program Committee has entered into a number of cooperative projects; including an attempt to ensure that needed journals were acquired by at least one member of the group. RLG Geology librarians who took part in a Conspectus-related experiment (Conoco Project) are now revising the Conspectus to improve its use as a record-keeping tool for identifying both core and research material collections to be shared.

**INTERNATIONAL USES OF THE CONSPECTUS**

The National Library of Canada has adopted the Conspectus to promote resource sharing on a national scale based upon regional library groupings. Twenty-five of the twenty-nine Canadian Association of Research Libraries are committed to completing the Conspectus. An initial product will be a directory of special collections. A unique challenge has been a bilingual French-English version of the Conspectus and the manuals developed to help libraries take part in the process. A number of other countries have shown interest including Norway, Sweden, the Netherlands, and France. The Conspectus has also been completed in a number of British universities as part of a plan to improve resource sharing.

**INTERNAL BENEFITS OF USING OF THE RLG CONSPECTUS**

While originally developed as a tool of interlibrary cooperation, the Conspectus produces a number of very practical applications that make the time needed to complete it worthwhile. Library administrators are faced daily with choices not so much between right and wrong, but between many good directions that should be supported. The problem is allocating resources most effectively. This process is further complicated by staff members championing their priorities as the most important, and they are often emotionally as well as intellectually attached to them. Conflicts over priorities become battles over turf.

"The Conspectus can function as a road map for individual libraries by recording mutually agreed upon, subject-specific statements."

Library administrators attempt to solve these conflicts between "good and good" by trying to get everyone to agree on the library's overall priorities, and then by applying what is learned to the specific case at hand. In recent years there has been a wide assortment of priority-setting programs: missions and goals programs, management by objective, long-range planning, strategic planning, the development of master plans, and five-year plans. Within this context the Conspectus can function as a road map for individual libraries by recording mutually agreed upon, subject-specific statements that provide guidance in the following situations:
1. determining collecting priorities;
2. making the best use of a library’s space;
3. selecting materials for preservation;
4. allocating and training materials selectors;
5. allocating materials budgets;
6. preparing for accreditation reviews;
7. improving faculty-library communication; and
8. finding outside funding support for library programs.

The Conspectus ties all the solutions to the collection or knowledge base, the heart of the library.

Collecting Policies And Priorities

Collection development policy statements are among the most frequently cited local uses of the Conspectus. A policy statement establishes the foundation for all library programs and can guide administrators and staff in the creation of specific policies and procedures. Some libraries have added a column to their internal version of the Conspectus to show their desired collecting level or the library’s goals and plans for future collection building. Cornell, Columbia, and Brigham Young universities provide examples of libraries that have used the Conspectus as a foundation for their collection development policy statements.

While the Conspectus is arranged according to the LC classification system, narrative collection profiles for academic programs can easily be added. Because the Conspectus is in the RLIN database, departments can conduct online searches on all subjects of interest. This feature is endlessly flexible since any number of subject combinations can be examined.

Space, Storage, Pruning Projects

Research libraries usually store low-use books and journals rather than discard the material, since their mission is to preserve information that may be of future scholarly interest. The Conspectus can help identify materials for storage. For example, when the existing collection intensity is greater than the current collecting intensity in a particular collection, this indicates a diminishing local emphasis on the subject and implies less use, a usual qualification for storage. The Conspectus also allows selectors to make more informed weeding decisions through their knowledge of similar or stronger collections elsewhere. By using the Conspectus, libraries can also work together to coordinate a centralized storage scheme. An internally mounted version of the Conspectus on a personal computer can be annotated with potential weeding or storage areas and serve as a master plan to guide many years of work. Without the Conspectus, such projects would be difficult to pursue.

Staffing Allocation and Training

Libraries today are challenged in allocating collecting responsibilities as inadequate staff and funding levels require leaner, more efficient operations. The Conspectus can better define reassignments by determining high/low growth areas, as well as areas requiring particular attention. Because of budget restraints, shifting program priorities, and preservation needs, collection assessment has grown as a major library priority. Collection evaluation is normally carried out by selectors and requires large blocks of time for an adequate assessment. By using the Conspectus, equitable divisions of responsibility are possible and will help avoid the problem of disproportionate assignments.

The Conspectus can also be used to establish processing staff allocations. High-growth areas, identified in the Conspectus, are targeted as cataloging priorities, which in turn affect the entire operational workflow.

The Conspectus is an ideal learning tool for newly assigned bibliographers. New selectors should have a guide to the collections for which they are responsible. The Conspectus is a ready-made learning device that instantly defines the collecting priorities. As every bibliographer knows, different levels of collecting require different selection methods. Minimal-level collecting would suggest the purchase of only basic works, some reference texts, and a representative journal sampling. Higher collecting levels obviously demand much more. Intensity code defini-
tions developed for the Conspectus sug-
gest what sorts of material should be
purchased for a specific target level. A pre-
viously completed Conspectus describes
what resources are already available. Time
saved in becoming acquainted with the
collection can be spent improving skills
needed in the selector’s collection devel-
velopment role.

**Fund Allocation/Fund Requests**

The Conspectus provides data useful in
preparing annual or special budget pro-
posals. Priorities for collection growth will
be indicated by collection strengths that
fall short of the level necessary to support
current programs. To address such weak-
nesses the library may wish to request
funds to support retrospective and cur-
rent acquisitions. The Conspectus values
can be cited and the level of support (or
lack thereof) that they indicate can be ex-
plained as part of the justification for the
budget proposal. Comparative informa-
tion can also be useful in this regard. Well-
respected collections known to provide
strong support to programs at other insti-
tutions may be located through the Con-
spectus. Their values may be compared to
local values and cited in the budget re-
quest as a means of illustrating local defi-
ciencies.

"Colorado State University is consid-
ering including portions of the Con-
spectus in all academic department
program reviews."

Collecting levels values can also be used
when allocating the local materials
budget. The amount allocated to each sub-
ject is normally determined by weighing a
combination of factors such as publishing
output, average cost of materials, need for
retrospective collection building, and the
current collecting intensity that the library
wishes to achieve. The Conspectus levels
can establish the latter factor and ensure
that budget allocation agrees with deci-
sions about current collecting policy.

Libraries are sometimes caught between
academic departments needing higher
levels of support and a university admin-
istration that finds it difficult to allocate
additional resources. The library can illus-
trate the need for additional resources by
citing the current, inadequate strength of
the relevant areas of the collection as rep-
resented in the Conspectus. Budget re-
quests can then be based on the dollar
amount necessary to bring the collection
up to the desired level. Colorado State
University is considering including por-
tions of the Conspectus in all academic de-
partment program reviews, which are re-
quired every five years. If adopted, the
Conspectus will be an official and integral
feature of a university’s program evalua-
tion process for the first time.

**Accreditation**

Conspectus values can describe a li-
brary’s collection to accrediting agencies.
They are especially helpful in those cases
where the standards are vague. The stan-
dards published by the National Council
for Accreditation of Teacher Education,
for example, require that, "The library
provides resources that quantitatively and
qualitatively support instruction, inde-
dependent study, and research required for
each advanced program." Conspectus
collecting levels address this issue exactly
by indicating whether a collection simply
defines and introduces a subject (level 2),
or supports "undergraduate and most
graduate instruction" (level 3), or "in-
cludes the major published source materi-
als required for dissertations and indepen-
dent research" (level 4).

Accreditation teams will also be inter-
ested in comparing the library’s resources
to the support provided by similar institu-
tions. Comparative data for this purpose
can be extracted from the Conspectus for
any subset. Profiles can be drawn to in-
clude libraries of comparable size, part-
ners in resource sharing agreements, and
geographically close neighbors. All of this
data enhances the library’s response to
the accreditation team’s queries.

**Faculty Relations**

Librarians work closely with faculty in
developing and assessing collections. Of-
ten it is difficult to find common ground when discussing library/faculty views on how a collection should or has been developed. The Conspectus is an excellent public relations tool in this regard, easily understood by both parties. Detailed topics such as "differential pricing," areas targeted for computer cataloging conversion, allocation formulas, and approval plans can all be placed within the context of the library's identifiable collection strengths and weaknesses. Sections of the Conspectus relevant to a faculty member's interests can inform discussion. The Conspectus can remove much of the political posturing that hinders cooperation between the faculty and the library.

The Conspectus can also improve relations with the faculty by helping student and faculty researchers refine or achieve their library research plans. For example, a researcher may discover that a certain collection within the library is too weak to support his/her work. With the aid of the Conspectus the subject specialist could suggest related collections where the library has strengths, without compromising the purpose and intent of the individual's project. Alternatively, the library can provide faculty members with Conspectus printouts of discipline strengths and weaknesses of other libraries for use in traveling to other collections. Without the Conspectus, this referral process would be less exact and more difficult.

Grant Proposals

Information gleaned from the Conspectus can be useful when preparing grant proposals. All proposals, whether or not they are collection related, include a narrative describing the strengths of the library's services and resources. The Conspectus provides considerable data for the latter; it can give the proposal writer a great deal of detail on collection strength. Its greatest value, however, is for proposals relating to library preservation, computer cataloging conversion, or other cataloging activities. Grant proposals for funds to process or preserve the collection are enhanced by demonstrable evidence that the collections will contribute significantly to the database of national resources. The New York Public Library has successfully used the Conspectus in this way.

Preservation Priorities

To establish priorities for local preservation programs many libraries have followed the example set by Yale and conducted collection condition surveys to gather data on paper quality, condition of bindings, and imprint dates. Without a tool like the Conspectus, however, it is difficult to keep track of the findings and what action should be taken. The Conspectus can also help determine what should receive priority attention under normal conditions. Collection areas where strong or emerging collection values converge with poor physical condition can be considered for priority preservation.

Libraries will also find the Conspectus useful in developing lists of collection areas to receive priority attention in case of an emergency, particularly water damage. Bibliographers can review the Conspectus for areas that are strong, unique, and/or irreplaceable, or that have physical features (e.g. glossy paper) that would require immediate attention. This information can be added as an appendix to the library's disaster recovery plan making it readily available to the recovery team when salvage procedures are put into operation.

"During the ten years since its inception, the Conspectus has gradually evolved into a major tool of communication and cooperation between and within libraries."

CONCLUSION

During the ten years since its inception, the Conspectus has gradually evolved into a major tool of communication and cooperation between and within libraries. Its value as a shared resource development aid is still evolving. It is in the interest of all academic administrators to increase the breadth and depth of the material acquired, cataloged, and pre-
served by their research libraries. Clearly it is beyond the resources of any single institution to acquire even half of what is currently produced, let alone retrospectively collect centuries of scholarly output. The Conspectus is not in and of itself a plan to bring about the needed cooperation to achieve these ends, but it has proved to be both a useful planning document and an invaluable communication tool for pursuing these goals. It has facilitated our understanding of past and present collecting activities at national, regional, state/provincial, and international levels. It has also shown great potential within libraries for linking service and processing priorities to collecting priorities.

The question before many Conspectus users is how can they maintain autonomy while achieving the fruits of cooperation facilitated by the Conspectus. The key seems to be consciously deciding to focus on one's own strengths as reflected in the Conspectus, coordinating with other libraries to cover weaknesses, and constructing regional building blocks to contribute to the national goal of achieving educational excellence. Cooperation does not mean a loss of freedom. Instead collaborative collection building can result in increased freedom to emphasize what is important in an individual institution rather than use limited resources to collect broadly in areas of lesser interest.

By using the Conspectus as a tool of communication and coordination, research libraries can increase their efforts in a whole range of existing collaborative projects:

- Collecting and reproducing materials designed for internal distribution in such countries as the Soviet Union, China, or Third World nations lacking sophisticated systems of information distribution.
- Converting a century's worth of collecting and cataloging into computer readable records.
- Preserving the North American intellectual heritage: at least a third of all nineteenth-century printed materials require expensive microfilming or other preservation techniques.
- Overcoming the new challenges in computerized informational technology:
  - Capturing and indexing huge bodies of scientific data produced by electronic sensing devices, fugitive electronic databases, and electronically exchanged scholarly papers.
- Collecting and cataloging subnational public and private printed documents, newspapers, popular materials, and local histories on a worldwide scale.
- Converting the actual texts of documents into an electronic format for inscription on laser discs or other high-density modes of information storage.

Collectively, North American research libraries have sufficient resources to attack many, if not all, of these and other projects. If they work together, success is likely.

REFERENCES AND NOTES

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Charting a Career Path in the Information Professions

Leslie M. Kong and R. A. H. Goodfellow

Academic librarians play an important role in promoting information management and information literacy. This paper develops a career path model for academic librarians, delineating primary roles, psychological issues, required competencies, and strategies to attain those competencies at each stage. Human resource planning implications for information organizations are also discussed.

Information is now viewed as a strategic resource, both by corporations and individuals. Participants in the global economy seek the most current and relevant information to make the most timely and effective decisions. Increased access has paralleled increased demand for information. However, consumers must now learn to cope with two major obstacles—information overload and information complexity. The key problem is organizing and sifting through information for what is usable and relevant. Uncontrolled and unorganized information is no longer a resource. Knowledge organizations such as academic libraries can lead in promoting information management.

Nina Matheson notes that five major developments will heavily affect library operations: (1) the trend toward deinstitutionalized information; (2) increased individualized access to information through communication networks; (3) the trend toward information work and greater dependence upon computers in the workplace; (4) the development of optical-disk technology allowing increased digital storage and retrieval of text as well as images in inexpensive, compact formats; and (5) the expectation that all professionals will need to be computer literate.

Other authors see the increased commercial activity of electronic publishers as an impediment to information management and that these information products may no longer meet the needs of scholars. They conclude that scholars, publishers, and librarians must cooperate to ensure that the information exchange process continues with a minimum of barriers. Others view electronic publishing as potentially significant to scholarly research where regular paper publishing is sometimes unprofitable. The library will continue to link its user community with the information resources. However, global economic dynamics and the information industry marketplace add the new dimensions of information management and information literacy instruction to the library's role.

This article examines the changing role of academic libraries and major career development issues and provides a specific career stages model for academic librarians. The model is then adapted to create a career plan for the information professions. Primary roles, psychological issues,
and required competencies and strategies to acquire them are detailed for each career stage. Critical issues are identified, and an approach is developed for systematic career planning.

**Evolving Roles**

The academic library profession is faced with deemphasizing the concept of libraries as warehouses of books and expanding the role of librarians as information application experts. Frederick Lancaster outlines the following future responsibilities of librarians:

1. Information consultants, directing individuals to the most appropriate sources
2. Training individuals to use electronic information sources
3. Searching sources unfamiliar to users
4. Analyzing, evaluating, and interpreting information for users
5. Assisting in the design of user interest profiles for current awareness purposes
6. Organizing personal electronic information files
7. Keeping researchers current on new information sources and services.

Lancaster’s list omits the important role of information manager, a critical function in the information society. Another critical role is instructing individuals in information literacy, defined as the ability to access and evaluate effectively information for a given need. Its characteristics have been specified by Martin Tessmer as follows:

1. An integrated set of skills (research strategy, evaluation) and knowledge of information tools and resources
2. Attitudes of persistence, attention to detail, and caution in accepting printed word and single sources
3. Time and labor intensive
4. Need-driven (problem-solving activity)
5. Distinct but relevant to literacy and computer literacy.

Clearly, academic librarians can lead in planning information networks to ensure equal access for scholars and the academic community. Librarians will see a move from traditional hard-copy collections to electronic access to information not held by their institutions. Managing the new information resources will be a serious challenge for these professionals. Information literacy will be crucial to consumers for understanding the complexity and variety of electronic formats. Academic librarians are the logical instructors of information literacy issues.

With these new roles, the academic librarian’s career outlook will broaden to present new opportunities. It will be an exciting period of transition, and academic librarians, in particular, must be aware of the key issues crucial to their career development and formulate strategies to negotiate successful career paths.

**Career Development**

Career development can be categorized into four broad areas: (1) professional issues, (2) organizational issues, (3) technological concerns, and (4) required competencies.

**Professional Issues**

Much speculation and concern about the future of academic librarianship has been reflected in the professional literature. The survival of librarianship as a profession has been raised, but many professionals take the position of positive opportunism. Patricia Battin, for example, former vice-president and university librarian at Columbia University, has advocated that academic librarians forge alliances with campus computer centers.

Professional achievement concerns many academic librarians. Faculty status has been the subject of intense debate on college and university campuses. Almost 79 percent of academic librarians now have some sort of faculty status. This achievement has resulted in more equitable salaries, comparable rights and privileges, and increased pressures to conduct research and participate in professional societies in accordance with the faculty model. However, faculty status has also increased opportunities for involvement in library and university governance.

Public appreciation for the craft of librarianship is another concern. Roger Greer posits that the public is also responsible
for endangering the profession. He cites two reasons: (1) the conditions of society have altered the public value of librarians, and (2) librarians have not changed their role in society to keep pace with social and technological changes. Library users cannot distinguish the difference between librarians and other staff members and, thus, cannot appreciate the expertise of librarians. As a result, the benefits of professional status are not granted by the public.

Organizational Issues

The organizational structure of academic libraries adheres closely to the traditional bureaucratic pyramidal model with few advanced positions available to reward deserving professionals. Those not interested in management positions but wishing to advance within the organization have limited career opportunities.

Characteristic of most academic libraries is the bifurcated structure of a public services department and a technical services department. Individuals, upon entering the organization, typically fall into one of these two functional areas and are "tracked" as specialists in either department. For the most part, little movement occurs between the two. As one advances in tenure, it becomes increasingly difficult to make a career change.

"Career paths for individual positions are characteristically undefined, and 'professional development' is a concept often discussed but rarely implemented in a systematic fashion."

Typically, academic libraries lack guidelines for employee career development. Career paths for individual positions are characteristically undefined, and "professional development" is a concept often discussed but rarely implemented in a systematic fashion.

Studies on libraries indicate that males dominate top management positions in what is considered by many to be a primarily "female" profession. Others have studied the characteristic differences between male and female library administrators that may promote this dual career structure.

Technological Concerns

The most obvious impact of new technologies upon academic libraries is the loss of jobs. Entire jobs will not disappear when automation is introduced; rather, the nature of jobs will change. The more routine work will be handled by computers, freeing librarians to take on more professional responsibilities.

For some, new technology translates to a loss of control over their lives, their jobs, and their libraries. The future is bleak for the librarian who wants nothing to do with computers. But the period of adjusting to automation among librarians and staff is increasingly shorter, as they realize the potential efficiencies achieved by new technologies.

In many instances academic librarians have not kept pace with sociotechnical changes. New staffing patterns are introduced along with new library technologies. Many tasks once handled by librarians are turned over to paraprofessionals. The role of the academic librarian is being reinterpreted to provide more effective service to library users. Davis indicates that the scope of an employee's role may increase as the number of duties decrease. Thus, the roles of academic librarians may become more complex and demanding as jobs become simpler.

Required Competencies for Librarians

Academic librarians must undergo retraining to attain new skills, knowledge, and abilities appropriate to evolving roles. The issue of professional competencies for librarians has been much discussed in the literature. The California Library Selection Project in 1975 was one of the first cooperative efforts to formally study the subject of minimum qualifications and competencies for librarians. Another major study centered around Minnesota public librarians and grouped identified competencies in five categories: (1) identifying individual and community information needs; (2)
selecting, packaging, and providing information; (3) evaluating services; (4) managing services; and (5) having general skills and attitudes necessary for effective public service. In 1986, Powell and Creth surveyed a random sample of ARL librarians on the importance of fifty-six knowledge bases. Their findings indicated that traditional library knowledge is still highly valued and that management and automation skills are also important among the librarians sampled.

The New Directions in Library and Information Science project, undertaken by King Research in 1985, had a twofold purpose: (1) determine the present and future competencies needed by information professionals, and (2) examine the educational requirements necessary to achieve those competencies. Although the project was widely attacked by the library profession, the authors made these significant conclusions:

1. Many of the competencies required in libraries are transferable to the newly emerging nonlibrary information professional positions.

2. In-depth subject knowledge is increasingly important, particularly in technical disciplines, as information professionals interact directly with users and perform more analytical tasks.

3. Educators, trainers, professional societies, employers, and the information professionals themselves all play essential roles in acquiring the necessary competencies.

These key issues are critical to the career development of information professionals. On a very specific level, however, academic librarians need to utilize some sort of career model to assist them in advancing within their particular institutions and in their profession. A number of career models are cited in the literature that differ in their basic assumptions. Most notably, Delbert Miller and William Form, and Edgar Schein, have developed models based on work and career stages. A detailed discussion of these models is beyond the scope of this article; however, one specific model has been developed that may be useful as a framework for library and information professionals in career guidance. The career stage model and its implications for academic librarians will be discussed next.

**CAREER STAGES AND ACADEMIC LIBRARIANS**

The career stage model concept was developed by Gene Dalton, Paul Thompson, and Raymond Price. They researched the reasons for differences in high and low performers among professional employees. In this study of engineers, they were able to identify four distinct career stages that professional employees may move through. Each stage is characterized by different tasks that must be performed well, by types of organizational relationships, and by necessary psychological adjustments. The authors concluded that high performers were those who moved successfully through the four stages, while individuals remaining in the early stages were more likely to be low performers.

"Academic librarians will find this a useful career stage model for planning and managing their own organizational careers."

Academic librarians will find this a useful career stage model for planning and managing their own organizational careers. The following discussion focuses on how such a model effectively works for both the library professional and the academic library. Skills and competencies required at each stage are described and strategies to obtain these competencies are suggested. Finally, the value of the model to human resource planning in the academic library will be discussed.

**Stage I: Apprentice**

Entry level positions may have a variety of responsibilities; two library-related examples are cataloging of library materials and reference service, basic tasks of technical and public service departments, respectively. Collection development is another basic responsibility that may be
considered either a technical or public service function. Depending on the library, supervisory responsibility for paraprofessionals, clericals, or students may or may not be included. The size of the library may determine this.

The tasks of entry level reference librarians have been the subject of many articles on professional burnout. Miller discusses overworked reference staffs and the seemingly never-ending responsibilities taken on by reference librarians. Two of the most labor-intensive functions are library instruction activities and computer-assisted reference services. Librarians often handle the clerical components of these functions due to staff shortages.

The beginning librarian is highly dependent upon supervisors for training and advice, making mentoring relationships significant. The mentor acts as a role model, providing support and counsel to one who is unskilled and unknowledgeable in a new organizational culture. The quality and relative power of the mentor in the academic library can have a serious impact upon the success of the librarian. Mentors can also be poor role models, so the entry level librarian must select an appropriate mentor.

Kathy Kram, in her study Mentoring at Work, indicates that mentor relationships may not be readily available to all those who want them. Thus, peer relationships must be developed in the organization. Research has been conducted concerning peer relationships at different career stages. Two common themes have been identified in the apprentice stage: (1) establishing professional identity, and (2) developing self-confidence and competence while learning the organizational ropes. The differences between mentoring and peer relationships are significant. The conventional mentoring relationship is often characterized by large differences in age and in hierarchical levels, while in peer relationships usually one of these factors is the same. Finally, the mentor relationship involves a helping dynamic that is a one-way exchange, while peers interact in two-way exchanges.

**Stage II: Colleague**

This phase of the academic librarian's career is characterized by a greater degree of independence and the establishment of the individual as a competent specialist. Developing a specialization and demonstrating extreme competence in that area are essential to the career of the librarian. Self-esteem is increased, as well as the visibility of the librarian in the organization. There are two approaches to acquiring specialization. One can choose a content area or develop specialized skills that can be applied to a variety of problems. Examples of the former would include subject specialists, reference librarians, and catalogers. An example of the latter is systems librarians. The choice of an appropriate specialization must be made in light of professional trends and local budgetary constraints. This key decision forms the base for a productive and successful career.

The subordinate role is continued at this stage; however, the librarian comes to rely less on the supervisor or mentor for direction. The nature of these relationships will undergo changes that are difficult for both the supervisor and the librarian. Specific changes in attitudes and behaviors on the part of both parties will be necessary for a successful transition. The various phases of the mentoring relationship have been described in some detail by Kram.

While peer relationships take on greater importance at this stage, some organizational factors inhibit them. These include the nature of the reward structure, promotional policies, and the encouragement of competitive rivalries. As one advances in the library organization, fewer managerial positions become available. Thus, individuals are more conscious of competing with peers for these few positions, and the organizational and political environment may promote or discourage the formation of peer relationships.

A major transition in Stage II is the move from dependence to independence. To accomplish this, librarians must develop their own professional standards. These standards may be influenced by peers, colleagues outside of the organization, and professional library associations. This
transition could prove to be difficult if librarians receive heavy indoctrination upon entering the organization.

Significant progress in Stage II is critical to the career development of individuals in organizations. In academic libraries, many librarians stay in this stage, acting as specialists for the remainder of their careers. These individuals continue to make substantial contributions to academic libraries; however, opportunities for advancement are limited. Nevertheless, some academic libraries have reported the successful use of a “two-track” personnel system that allows librarians to advance in salary and in rank through either a professional administrative or nonadministrative track.

Stage III: Mentor

Librarians who have moved into Stage III have increased responsibility for influencing, directing, and developing others, especially entry level librarians. Characteristically, these individuals will have broadened their interests and capabilities beyond their basic jobs. They also interact with individuals outside the subunit or organization so as to benefit others inside the academic library.

Dalton, Thompson, and Price delineate the three roles that professionals in this stage may fulfill. First, there is the role of the informal mentor. Librarians involved in a variety of librarywide projects and needing additional technical assistance to perform specific tasks and/or to further develop initial ideas or proposals become informal mentors to those who provide the additional assistance. Second, the idea consultant acts as a resource for small groups within the academic library. This individual has broad involvement and influence over the work of others. Third, the manager is typically not more than one or two levels away from the work itself. This individual would likely have formal responsibility as head of a department or unit. Of course, a supervisor could act as a mentor to an entry level librarian. Individuals at Stage III may recognize that these roles are by no means exclusive; indeed, they may assume all or any of these roles at a given time.

The major transition from Stage II to Stage III involves the individual’s outlook concerning work relationships and organizational objectives. The librarian has shifted personal perspective from being strictly inner-directed to being more outer- or other-directed. Responsibility is now assumed for the work of others. A variety of interpersonal skills is now required to set objectives, coordinate tasks, and supervise staff. Multiple reporting structures also become more prevalent; the librarian must now satisfy a number of “bosses.” Confusion of roles and objectives also may occur, particularly in those academic libraries employing matrix organizational structures. The Stage III librarian experiences a shift in the relationship with those above in the organizational hierarchy. Responsibilities are now clearly both upward and downward in the library, so that the librarian must learn to cope with divided loyalties.

The supervisory role may not be suitable for some individuals. One who excels in technical competence might be lacking in either the interest and/or the necessary interpersonal and social skills to manage others effectively. Another potential problem is librarians who have been promoted on the basis of their technical competence unable to pull away from that technical work. Some may feel the need to maintain both the technical competence and their supervisory responsibilities. Finally, mentor relationships have the potential to sour and create resentments.

Pamela Chesebrough and Gordon Davis outline some prerequisites for the successful negotiation of Stage III: (1) management experience through projects, (2) experience in different functional area applications, (3) diverse technical experience, and (4) a variety of interpersonal skills. Librarians may remain at this level for the rest of their careers. The organizational rewards are many, taking the form of peer recognition, organization status, social involvement, and the satisfaction of helping others further their careers.

Stage IV: Sponsor

The key characteristic of Stage IV librarians is their influence in determining the
future direction of the organization. Typically, one may think of the chief administrator as the sole person with this influence. Such titles as "dean of libraries" or "university librarian" come to mind. However, this major influence is in fact more widely distributed among key individuals in the library. More often than not, sponsors may be found in the library's top management team. Middle managers at Stage III may also make the transition to Stage IV. These individuals distinguish themselves as major forces in planning and shaping the future of the library.

The Stage IV librarian interacts with key elements of the environment, such as the university administration, faculty, student organizations, the state legislature, library networks, regional cooperatives, professional library associations, publishers, and commercial services. The concept upon which this interaction is based is known as stakeholder management. New ideas and services are developed, or new users groups are served. The sponsor also directs the resources of the library toward specific goals. All these activities are strategically important to the long-range success of the library. Stage IV librarians play at least one of three roles. First, the manager formulates policy and initiates and gives approval to broad programs. This individual is neither involved in guiding Stage I librarians nor supervising those in Stage II, since the individual is too far removed from the details of daily work. Second, the intrapreneur brings resources (funding, staffing, and innovation) together to further new ideas to influence the direction of the organization. Third, the idea innovator contributes to significant breakthroughs noteworthy in the information professions. Reputations are established outside the library through scholarly publication or professional achievements, such as in national library association activities.

The sponsor also has major influence in the future direction of the academic library by selecting and developing key individuals to become Stage IV librarians. Guidance, feedback, and opportunities are provided rather than direct instruction. The sponsor also maintains important relationships outside the organization through contact with the various stakeholder groups of the library. These contacts are critical to discovering significant trends in the environment and bringing them back to the organization. They also give the academic library the necessary exposure to attract funds and outside resources.

"Library administrators must be comfortable with the fact that they will no longer be close to daily operations."

A CAREER STAGE MODEL FOR ACADEMIC LIBRARIANS

A career stage model applicable to academic library professionals consists of four stages, each with the following elements: (1) primary roles, (2) major psychological issues, (3) required competencies, and (4) strategies to obtain competencies. The model is presented in figure 1. Note that the level of tasks broadens as one moves up through the career stages. The number of individuals affected by one's decisions increases at each succeeding career stage. Correspondingly, the competencies required at each succeeding stage are less technical, but more administrative and broader in scope. Stage III and IV librarians will increasingly look outside of their institutions to accomplish organizational objectives. Network-
<table>
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<tr>
<th>Stages Elements</th>
<th>Stage I (Apprentice)</th>
<th>Stage II (Colleague)</th>
<th>Stage III (Mentor)</th>
<th>Stage IV (Sponsor)</th>
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<td>Primary Role</td>
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<td>Independent</td>
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<td>Shaping the</td>
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<td>Major Psychological Issues</td>
<td>Dependence</td>
<td>Independence</td>
<td>Assuming responsibility for others</td>
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<tr>
<td>Required competencies (skills, knowledges, abilities)</td>
<td>Critical evaluation, problem-solving, instruction, reference, information retrieval, cataloging</td>
<td>Specialized subject knowledge, reference skills, technical expertise</td>
<td>Coaching, consulting, managerial abilities, interpersonal and social skills, ability to train</td>
<td></td>
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<tr>
<td>Strategies to obtain competencies</td>
<td>Graduate library education, work under supervisor, on-the-job training, develop mentor and peer relationships</td>
<td>Mentor relationship, expand peer network, professional association activities, advanced graduate degrees</td>
<td>Increase professional association involvement, seminars, workshops, diverse technical experience, management experience through projects</td>
<td>Establish scholarly publishing record, reputation as speaker, innovator, run for office of professional associations, work under sponsor</td>
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**FIGURE 1**

A Career Stage Model for Academic Librarians

The model proposed here provides academic librarians with a set of specified career expectations and a process for managing activities for transition to future career stages. It also promotes a greater awareness and understanding of academic library organizations. Managers can better determine reasons for stagnation at certain positions by applying this model. The numbers of individuals in each stage can be tracked by showing the progress between stages. Career development issues can then be brought directly to top management for evaluation and action. Implications linking career development with human resource planning are evident. Growth in new programs, opportunities for creating new positions, and turnover analyses can be considered hand-in-hand with career development.

Rapidly changing developments in the...
The information society environment will necessitate improved long-range and strategic planning. A major issue in academic library management is how to strategically approach the challenges of new information technologies, new professional roles, new organizational structures, and changing societal needs for information. Organizational obsolescence is a real danger if nothing is done to change and/or improve the mix of library staff members' skills.

This article has discussed in some depth the need for a career planning approach for information professionals. The library or information organization can also benefit by identifying its needs and matching them with employee needs through a human resources management system. Long-term professional development is crucial to both the organization and the information professional. A formal process should be established to enable individual employees to review their career interests and objectives with management. Desired competencies can be identified for specific positions that may soon be vacant. Career paths can be discussed with the employee to promote career planning techniques. Management, in turn, would be better able to establish effective organizational plans and training and development programs based on its knowledge of employees' career objectives. One such program has been described by Roslyn Courtney.36

The career stage model is adaptable and relevant to those in the information and knowledge professions. It provides a career planning approach based upon the various stages an individual may pass through and allows the individual and organization to plan together for a more effective future.

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29. Ibid.
In fall 1986 the author traveled to France, Germany, and the Netherlands on a grant from Martinus Nijhoff International to gather data on the prices of European library materials and encourage production of European academic book and serial price indexes. This study concludes that the best sources for data on the prices of academic library materials from Europe are vendors who supply American college and research libraries. At least two vendors are currently making available such data: Blackwell and Harrassowitz. In addition, there is a new draft international standard for price indexes; average price for pages or "signatures" is a promising method for capturing comparative price data on books and serials; and local cost studies are an effective means of calculating rising costs of foreign materials, especially with new technology available.

Research libraries are very concerned about the buying power of their collection funds as the U.S. dollar has weakened over the past three years against foreign currencies. Budget planning for 1988–89 is about to begin in many universities and colleges, and collection managers must gather facts about the costs of library materials in order to project their needs. Research libraries, in particular, now purchase from 40 to 60 percent of their materials abroad, with particular emphasis on materials from France, Germany, and the Netherlands. Although these countries have a well-developed book trade, there is, unfortunately, very little published data available on the costs of academic materials from these countries.

There are two exceptions to the lack of data on academic material. The British have taken the leadership in determining the costs of academic materials with the British Academic Book Price Index, developed in 1974.¹ This index covers only books of interest to Cambridge University Library and hence to other academic libraries. In the United States, the Library Materials Price Index Committee, Resources Section, Resources and Technical Service Division, of the American Library Association has recently developed an American Academic Book Price Index. This index is vendor-based and covers only books supplied to academic libraries by three vendors.² The U.S. also has a College Library Index based upon data from Choice.³ The above indexes are really subsets of general national data available in the U.S. from Publishers Weekly and in England from the Bookseller. It has long been recognized, however, that the academic subset differs from national data and that academic data are more reliable for projecting price changes for college and research libraries.

In summary, it would be a significant contribution to library budgetary planning if there were some standard and reliable sources of data on the costs of foreign materials. With research librarians spending millions of dollars on materials, it is

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important for them to be able to do cost projections based upon real market figures. Computers now make it possible for publishers, vendors, and librarians to keep more accurate and complete data on price trends.

PURPOSE AND METHODOLOGY

The foreign price data study followed up on a proposal made at a LIBER (Ligue des Bibliothèques Européennes de Recherche) meeting in 1977 and also capitalized on an effort currently under way to develop international standard criteria for price indexes of library materials. In 1977, at a meeting of LIBER, Frederick C. Lynden, then chair of the Library Materials Price Index Committee, presented a paper regarding the "Library Materials Price Situation in the United States," in which he urged that libraries consider two steps: (1) developing international standards for price indexes and (2) creating academic subindexes to national price indexes in Europe and the U.S. The first recommended step has occurred. In fall 1986 the International Standards Organization Working Group 8, chaired by Morten Hein, Denmark, submitted to ISO a draft standard: "Price Indexes for Library Materials: Books and Serials." The second step will take time, but there is evidence that it would be possible to do this in France, Germany, and the Netherlands.

The chief purpose of the study was to gather information about which sources of price data are most reliable for academic libraries. The methodology was to visit vendors, book trade association officials, and librarians in France, Germany, and the Netherlands and to obtain information through interviews. The interviews sought to answer the following:

1. Existence of price data: which organizations collect price data on library materials, and how current are these data?
2. Publication: where are price studies/indexes published, or how are they made available if they are not published?
3. Methodology: how are price studies/indexes compiled, and what principles or standards do the compilers follow?
4. Use of price/studies/indexes: how are price studies/indexes used in research libraries, and how are the studies/indexes modified (if at all) to serve the purposes of libraries?
5. Improvements in data: are the organizations that collect data aware of the standards developed in price reporting, particularly the American national standard and the ISO draft proposal?

In addition to gathering data on prices of library materials for France, Germany, and the Netherlands and publicizing this data, the study aimed to encourage production of price indexes where none are available and to make available information about the standards work that has been accomplished.

Before describing those data now available, it is worth explaining the uses that can be made of them. Information gathered from foreign price reports can be used by librarians:

1. to justify increases in the library's book budget
2. to allocate the materials budget by subject categories
3. to analyze cost trends and plan future budgets
4. to aid librarians in interpreting collection program costs to funding authorities
5. to determine the impact of material cost increases on other library programs

ACADEMIC PRICE DATA CURRENTLY AVAILABLE

As noted earlier, the British were the first to compile an Academic Book Price Index. In 1974 the Cambridge Library Management Research Unit (LMRU) began, under the direction of Len Schofield and Alan Cooper, "collecting data on the average prices of British Academic books by subject, based on the division of the copyright intake of the University Library Cambridge into academic and non-academic items according to the library's criteria." The Tress Brown Index, previously used by British academic libraries, measured what university libraries were already buying, and the contention was that it therefore measured only the prices of books that these libraries could buy from limited budgets. LMRU felt it was more desirable to measure the prices of books that university libraries should buy. The Cambridge library was one of four receiving books on copyright deposit, and...
"The British Academic Book Price Index (BABPI) has been produced annually since 1974, and the results have been quite different than the Whitaker New Book Prices Index, a general price index."

British National Bibliography (BNB) cards were sent to LMRU for all books selected for inclusion in the main catalog and therefore deemed to be of academic value. The average prices of these books were tallied, using forty-eight subject areas with totals for the ten major Dewey classifications. The British Academic Book Price Index (BABPI) has been produced annually since 1974, and the results have been quite different than the Whitaker New Book Prices Index, a general price index. In 1983, however, BABPI compiler Lawraine Wood noticed that from 1982 to 1983 the average price had decreased, whereas the general retail book price index had shown an increase. Upon examining the causes, Wood discovered that a large number of pre-1982 books had been included in the index because the BNB was catching up on its cataloging. Upon further examination, Wood discovered an increasing number of unpriced items that, by practice, had been excluded from the index. A sample revealed that the unpriced items had caused a price understatement of as much as 25 percent in the index. Therefore LMRU, which had by then become the Centre for Library and Information Management (CLAIM) at Loughborough University, realized that the source of price data was not reliable.7

At about this time, Wood was invited to attend meetings of the Library Materials Price Index Committee, which was grappling with the problems of creating an academic book price index for the U.S. Without any source, such as a depository system, to use for such an index, the committee decided to use data from vendors supplying approval- and blanket-plan books to American academic libraries. By happy coincidence B. H. Blackwell representatives in attendance told Wood that they could provide data for a British index, and she returned to England with the recommendation that the data used there also be vendor supplied. Currently the index is created from data supplied by Blackwell. All of this is reported because it illustrates several principles that underlie the foreign price data study:

1. Academic libraries should use academic price indexes because they differ from the general price indexes.

2. Vendor data can be a reliable source of information because they are up-to-date and are frequently supplied from computerized records.

3. When there is no depository system, vendor selections of current titles for academic libraries can be an excellent source of information.

4. Vendors classify the books that they supply by subject in order to tailor their selections to libraries' interests.

This movement to create an academic subset of price indexes took place only in the U.S. and England. Thus, it seemed logical to extend these principles to materials from France, Germany, and the Netherlands. It is also important to be aware of the general indexes from these countries because these can show inconsistencies in academic price data that might be due to anomalies in the source data.

In the U.S. the Bowker Annual of Library and Book Trade Information makes available general and some academic price information for foreign publications. In 1986, the Bowker Annual published information about British book prices from CLAIM, using the data from Blackwell; on German book prices from Buch und Buchhandel in Zahlen, produced by the Boersenverein des Deutschen Buchhandels (a national trade organization of booksellers); and Latin American book costs, gathered from several research libraries, among them the Library of Congress.9 There is obviously very little information in the Bowker Annual on academic foreign prices, and no information on prices in the Netherlands or France. Recently, the Book Research Quarterly published an article by Sally F. Williams that contains a table showing the sources for published price reports.10 There is no information again on the prices of "academic" materials in France.
and the Netherlands.

In summary, progress on academic book price indexes has been made chiefly in the U.S. and Britain. These indexes now rely heavily upon vendor data that are machine-readable and are preselected for the academic market. National price data are useful in discovering trends, but are not as applicable to academic libraries.

**LIBER AND PRICE INDEX STANDARD PROPOSALS**

Another factor that caused this study to be started was the general interest, expressed at the LIBER meeting in 1977, in the production of academic price indexes for library materials from European countries. A working party consisting of J. L. Schofield, England; A. W. Wamsteker-Meijer, the Netherlands; and E. Mittler, West Germany, proposed work on price indexes for other European countries. Their proposal was for Western European countries to produce indexes for their own countries on the prices of academic library materials. At the LIBER meeting in April 1977, it was proposed to have “indexes from the four countries which together produce the main part of the European output: United Kingdom, France, Germany, and the Netherlands.” It was further recommended that LIBER contact appropriate parties in each country, and that LIBER publish the indexes as separate publications. One or two standard criteria also emerged: the UNESCO classification was felt to be desirable for subject divisions and the total number of publications per category was to be listed. After over ten years of inaction, LIBER will put the subject of price indexes on its agenda for its April 1989 general meeting in Spain.

Although there was no progress on the academic price indexes, there was progress on a standard that could be used internationally. Working Group 8 of the International Organization for Standardization, Technical Committee 46 was established in 1983 to consider the creation of an international standard for price indexes for library materials. Headed by Morten Hein, Denmark, the group included representatives from England, U.S., Sweden, France, and Germany. After five meetings, the Working Group submitted a draft proposal (9230) in November 1985 that was accepted after some technical objections were resolved and has now gone out as an international draft standard. The draft standard has the following distinctive features:

1. Covers price indexes for books and serials; nonbook media are not included.
2. Distinguishes between national indexes measuring prices and local indexes measuring costs.
3. Allows for separate indexes for paperbacks and hardcover publications but indicates a preference for including the two formats together.
4. Uses the UNESCO breakdown for subjects with its twenty-five subject groups.
5. Permits the compilation of serial price indexes by either national agencies or subscription agents (book prices for national indexes may be taken from national bibliographic or trade sources or may be calculated by direct observation).

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The international draft standard ‘Price Indexes for Library Materials: Books and Serials,’ which records common criteria for creators of price indexes, can be used by those producing price reports for academic libraries.
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The international draft standard “Price Indexes for Library Materials: Books and Serials,” which records common criteria for creators of price indexes, can be used by those producing price reports for academic libraries. One dividend of the foreign price data study was that vendors, librarians, and national publishing organizations were made aware of the efforts toward creating the standard, about which surprisingly few were aware. In summary, LIBER proposed in 1977 to create academic book price indexes for Western European countries. Although no product emerged, the proposal is under active consideration again. However, there was progress made in developing an
international standard that is now in a draft standard stage. This proposal should be useful to compilers of price data from European countries because it will allow for comparability among various countries’ data.

THE FOREIGN PRICE DATA STUDY

Hence, the foreign price data study concentrated on discovering what was available. The primary methodology was interviews with librarians, publishers, and booksellers. Following is what was learned about price data available from vendors, bookselling associations, and librarians in each country.

Price data from the Netherlands

American academic librarians are principally interested in English-language materials from the Netherlands. Dutch collections in American academic libraries are not extensive, but English-language Dutch publications from such publishers as Elsevier, De Gruyter, North Holland, Brill, and Nijhoff, among others, are purchased heavily by American libraries. The Bookseller’s Association, Stichting Speurwerk, Betreffende het Boek in Amsterdam (Frederiksplein 1, 1017 XK Amsterdam-C) keeps statistics on Dutch book prices and publishes them regularly. A synopsis is published in Boekblad, a weekly trade magazine similar to Publishers Weekly. Data have come from the Royal Library since 1983. Table 1 gives summary data since 1983.11 All prices are in Dutch guilders. More detailed tables show production and costs by subject. The tables use UNESCO subject headings.

Of more direct interest to American academic librarians are the changes in the costs of English language and other foreign language publications. Unfortunately, there is no direct source of information on the English language and other foreign language publications and their average costs. There are a couple of possibilities for obtaining information on Dutch, English and other foreign-language titles: Stichting Speurwerk’s Boeken Titelproduktie Vreemtalig (Book Title Production for Foreign Languages) or the monthly publication of Nijhoff Information. Both of these publications list not only English-language titles but also titles in German, French, and other languages produced in the Netherlands. The advantage to the latter is that it contains only those titles of special interest to academic libraries, whereas the Stichting Speurwerk’s figures include statistics of all publications in these languages. One assumption would be that academic and scientific title production in foreign language constitutes the primary proportion of Dutch foreign-language publishing. Nevertheless, there is no price information tied directly to these figures. In 1985, for example, with sports books and children’s books excluded, there were 1,270 Dutch books published in English, German, French, and other foreign languages. Stichting Speurwerk includes only a count of the titles. Since Nijhoff Information contains price information, it seems like a better source for academic libraries. In fact, it might serve as the database of the academic subset for Dutch books purchased by American libraries.

In addition to the general information provided by associations supported by the book trade, vendors can supply information of specific interest to academic libraries. The publication Nijhoff Information is one example. Many vendors now have

<table>
<thead>
<tr>
<th>Year</th>
<th>New Titles</th>
<th>New Editions</th>
<th>All Titles</th>
<th>% Incr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1986</td>
<td>46.50 fl.</td>
<td>26.30 fl.</td>
<td>40.30 fl.</td>
<td>8.0</td>
</tr>
<tr>
<td>1985</td>
<td>41.70 fl.</td>
<td>25.60 fl.</td>
<td>37.30 fl.</td>
<td>3.8</td>
</tr>
<tr>
<td>1984</td>
<td>40.50 fl.</td>
<td>24.80 fl.</td>
<td>35.90 fl.</td>
<td>10.8</td>
</tr>
<tr>
<td>1983</td>
<td>37.40 fl.</td>
<td>21.80 fl.</td>
<td>32.40 fl.</td>
<td></td>
</tr>
</tbody>
</table>
considerable information available as a by-product of their computerized files. In the U.S., Baker and Taylor, Blackwell North America, and Coutts currently provide customers with data on book prices; data from their programs make up the price index of American academic books. Martinus Nijhoff is in the process of computerizing all of its records and, as a part of this computerization, it will have the capability of building in price data on materials both monographic and serial, supplied to academic libraries. The computer system will be ready in 1988, and currently Nijhoff is querying customers about their needs from the computerized system.

In discussions with the monographs and serials managers at Nijhoff, it was learned that the managers felt that actual local inflation was not substantial, but that American librarians should be more aware of the currency changes that are really hurting the ability of academic librarians to purchase. They pointed out that the currency change made Dutch materials more expensive. Regarding future price information both agreed that, in the new system, Nijhoff will have the capability of delivering price reports and would be willing to publish general information of value to the library community. One of the two was aware of the standard on price indexes that ISO has in draft form. The monographic manager said that Nijhoff Information was available on slip form and could be used for compiling price data. (One other Dutch vendor, Swets & Zeitlinger, has produced price reports on books and journals supplied to academic libraries.)

Price Data from France

National data in France are available from Cercle de la Librairie and appear annually in Livres Hebdo in summary form. All of these reports are generated by a computer system called Electre that is managed by the Cercle de la Librairie and available to anyone in France through Minitel, the government owned and managed system that makes free terminals available to anyone in the country. Minitel now has 2 million units available in France. The data on book prices comes from Les Livres Disponibles, which is similar to Books in Print. Table 2 shows the general price trends for books in France.12

As can be seen, there have been no double digit increases in the costs of French books in recent years. By a decree of 1954, the Syndicat National de l’Edition keeps statistics on books for the Institut National de la Statistique et des Etudes Economique (INSEE). The Syndicat National de l’Edition is part of the Cercle de la Librairie. The Cercle is a principal source for statistics and information on the book trade in France (Cercle de Librairie, 35, rue Gregoire de-Tours, 75279 Paris, Cedex 06).

Two major vendors for American academic libraries, Jean Touzot and Aux Amateurs des Livres, were visited in Paris. Jean Touzot’s invoicing is computerized and provides total books sold and average cost without any subject separation. He has not been asked for information, and he sees computerization as less important than other facets of the business. He sees the intellectual (i.e., selection) side of the business as more important. Touzot also supplies journals, but has the same difficulties in supplying price information. Aux Amateurs des Livres is totally computerized, books and journals, but does not have the programs to provide price information. Nevertheless, it is possible to do so, according to owner Alain Baudry. It was noted that there had been little demand for price information although he does receive inquiries at ALA. He indi-

### Table 2

<table>
<thead>
<tr>
<th>Year</th>
<th>Index for Nonscholarly Books</th>
<th>General Index</th>
<th>% Incr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1986</td>
<td>179.1</td>
<td>162.2</td>
<td>2.66</td>
</tr>
<tr>
<td>1985</td>
<td>170.7</td>
<td>158.0</td>
<td>5.8</td>
</tr>
<tr>
<td>1984</td>
<td>162.0</td>
<td>149.3</td>
<td></td>
</tr>
</tbody>
</table>

Source: INSEE.
cated that the tendency for price increases has been less dramatic in the last few years, primarily because costs are stable and are under control thanks to technology. Aux Amateurs des Livres also supplies journals and series and could provide price data using a computer. Prices by subject could be provided by UDC class.

Baudry also mentioned that data are being gathered on university press publications. A catalog, Catalogue Automatisé des Publications d’Origine Universitaire (CADOU), which will be run by DBMIST (Direction des Bibliotheques, des Musees et de l’Information Scientifique et Technique), is intended to provide a machine-readable database of information on books and serials originating from universities that will include price; since it is voluntary, however, it will probably not be comprehensive. At the moment, it is not possible to obtain academic book and serial price information from either vendors or other sources, but there are some promising possibilities for the future. At least one major vendor is computerized, and the French government is requesting that publishers provide machine-readable data on publications of university origin.

**Price Data on German Publications**

National data on German book prices are available from *Buch und Buchhandel in Zahlen* published by the Boersenverein des Deutschen Buchhandels. As noted earlier, the summary tables from this annual publication have been published in *Bowker Annual* since 1974. They show the average prices by subject using the UNESCO subject headings. (Incidentally, the bookselling community would prefer not to use UNESCO headings, but the compiler, Horst Machill, finds these subject headings of value for comparisons. Since the ISO standard uses these headings, Machill was pleased to get reinforcement for his views.) Table 3 shows general German book prices.¹³ Periodical price information can be obtained from the Verband der Zeitschriften, located in Bad Godesberg. The source of *Buch und Buchhandel in Zahlen* is Deutsche Bibliographie (DB), although as many as 25 percent of its titles are unpriced. DB also uses sixty-three categories that Machill compresses into the twenty-five used by UNESCO. One feature of *Buch und Buchhandel in Zahlen* that might well be copied is its Bogen Preisen or the average price per sixteen pages. Instead of comparing volumes it might be more accurate to compare page prices. For journal prices, Charles Hamaker urges index makers to consider not only page prices but distribution of prices among journals.¹⁴

Although *Buch und Buchhandel in Zahlen* (*BUBIZ*) is an important measure of the costs of German books, academic librarians have been uncertain whether it really records the costs for academic books. In addition, due to a major change in coverage, the *BUBIZ* index temporarily will be of no use to librarians, even as a general index. In 1986 DB increased its coverage of titles: the figures showed an increase over 1985 of almost 9 percent in the representation of titles costing under 10 marks and a decrease of 8 percent in titles costing more than DM25. As a result, the overall average dropped from DM32.57 in 1985 to DM25.47 in 1986. The coverage of titles will continue at the same level so that in a few years *BUBIZ* will again be of value as a general index of prices. Recently an article by Steven E. Thompson pointed out that

<table>
<thead>
<tr>
<th>Year</th>
<th>Avg. Cost per Title</th>
<th>% Incr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985</td>
<td>32.57DM</td>
<td>8.4</td>
</tr>
<tr>
<td>1984</td>
<td>30.06DM</td>
<td>7.6</td>
</tr>
<tr>
<td>1983</td>
<td>27.93DM</td>
<td>5.5</td>
</tr>
<tr>
<td>1982</td>
<td>26.48DM</td>
<td></td>
</tr>
</tbody>
</table>

*1986 not included due to a radical change in reporting.*
there are significant differences between an academic and general index. The example used was a comparison of *Buch und Buchhandel in Zahlen* and an index from the Otto Harrassowitz firm, a vendor who supplies exclusively to academic libraries.

The major vendor for U.S. academic libraries in Germany, Otto Harrassowitz, has compiled average price data since 1982 for books supplied on the firm's blanket-order plan (see table 4). The mix of titles offered to academic libraries obviously affects the overall average price as well as the percentage increase. As can be seen, the local inflation has not been very high for German academic books. The data from Otto Harrassowitz can be very useful to academic libraries. Combined with information on the changes in the value of currency, such data can inform budgetary authorities on the trends of prices for materials from Germany. With permission from Harrassowitz, the Library Materials Price Index Committee has decided to publish the Harrassowitz figures in the *Bowker Annual* starting in 1988 since these figures are of more relevance to the academic book market and more up-to-date.

In view of the problems with the general index of German book prices, the Harrassowitz study is an especially invaluable source to academic libraries.

Overall, the Harrassowitz price study is of great value. It has the following features of interest to academic libraries. First, the classification system used is LC. Second, the index covers publications from German-speaking countries, not just Germany. Therefore, it includes Austria, Switzerland, and DDR. There are plans to have a country breakdown. Third, it includes both paperbound and hardcover books together. If the countries of publication are indicated for each title and the classification system is changed to UNESCO, the price study meets all the criteria for indexes from the ISO draft proposal. The portion of total German-language materials that were considered of academic level was estimated to be 18.75 percent.

In summary, the above experience indicates there need to be several conditions present in order to produce academic indexes for the countries of France, Germany, and the Netherlands:

1. There need to be vendors who supply principally academic libraries and have their files computerized.
2. The vendors need to be able to break-down the data by:
   a) Total volumes shipped, or titles in the case of periodicals.
   b) Total cost in the country of origin's currency.
   c) Total average prices.
   d) Subject classification, preferably UNESCO, but LC is acceptable.
   e) Imprint year.
   f) Country of publication.
3. The vendors must also be able to distinguish formats, such as book, periodical, microform, etc.
4. The vendor should be aware of the standards that might be applicable, such as the ISO draft proposal or the National Information Standards Organization (NISO) standard.
5. The vendors must be willing to have the data published and shared with librarians, and they should be willing to share it on computer tape.

When these conditions are met, it will be possible to produce academic book and journal price studies and indexes. As noted above, the Blackwell firm has come to the rescue of the *British Academic Book Price Index*, and several firms are willingly

<table>
<thead>
<tr>
<th>Year</th>
<th>Titles</th>
<th>Amount (DM)</th>
<th>Avg. Pr. (DM)</th>
<th>% Incr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1987</td>
<td>19,122</td>
<td>1,201,751.10</td>
<td>62.84</td>
<td>6.5%</td>
</tr>
<tr>
<td>1986</td>
<td>21,745</td>
<td>1,282,577.20</td>
<td>58.98</td>
<td>-1.1%</td>
</tr>
<tr>
<td>1985</td>
<td>19,059</td>
<td>1,136,512.22</td>
<td>59.63</td>
<td>-1.0%</td>
</tr>
<tr>
<td>1984</td>
<td>16,504</td>
<td>944,228.15</td>
<td>60.24</td>
<td></td>
</tr>
</tbody>
</table>
participating in the American academic book price index project. It appears that the Harassowitz price study meets most, if not all, of the criteria from above and that there are vendors in the other two countries who can meet these criteria.

Next, the paper will discuss budgeting practices in some libraries in France, the Netherlands, and Germany, and then it will examine discriminatory pricing and suggest steps that might be taken to ease its effects. Finally, the paper will report on conclusions that can be drawn from the study and make some recommendations for the future.

Library Budgeting in the Netherlands

Although it was only possible to visit the University of Groningen's library, the director was able to speak about activities in the other fifteen university libraries in the Netherlands. There is an association of University and National Libraries, similar to SCONUL in England and ARL in the United States. According to Willem Koops, director at Groningen, this group is collecting information on the costs of materials to Dutch libraries. Since the organization is voluntary and not everyone has cooperated, there is no book price index for academic libraries. Many libraries such as Groningen, however, have their local acquisitions computerized and can provide quite accurate data on books, continuations, and subscriptions. As noted later, in the Netherlands, library serial costs are rising at a very fast rate. One way the libraries in the Netherlands have dealt with higher costs is to cooperate nationally on acquisitions. To avoid gaps in collections, there is an agreement that a library cannot cancel a subscription when there is no other subscription for that title in the country. There have been some political problems in this area as well.

Many universities in the Netherlands have very decentralized library systems where department and institute libraries tend to be autonomous and not always cooperative. The budget at Groningen is for the central library, and the institute libraries pay the central library for services. At Groningen automation costs have risen since the library is a member of Pica, the national network, and also has its own system for acquisitions, cataloging, and serials. As noted earlier, the costs of serials, many of which must come from overseas, are rising faster than monographic costs, and a study done locally at Groningen was used to justify more funds for books. For example, at Groningen an expenditure pattern has emerged (see table 5). As can be seen, serials costs are outstripping monographic costs, and the library administration is interested in better data on materials costs in order to be able to project costs. The general harm done by declining budgets was expressed in a questionnaire sent out by the International Publishing Association in June 1986. The cover letter on the questionnaire notes: "IPA wishes to draw the attention of national and regional authorities on the damaging trend of declining library budgets for education, research and public information." The questionnaire goes on to ask for library data from IPA members on library buying during the last three years.

Library Budgeting in France

Although it was only possible to visit one French library, the Sorbonne in Paris, its conservateur Michel Marion gave me much information about the budgeting process there that he said was similar elsewhere in France. According to Marion, the materials budget has not been keeping up with the costs of materials, particularly the costs of foreign materials. French importers of foreign materials impose a

<table>
<thead>
<tr>
<th>EXPENDITURE PATTERN</th>
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<tbody>
<tr>
<td>1980</td>
</tr>
<tr>
<td>Books</td>
</tr>
<tr>
<td>Continuations</td>
</tr>
<tr>
<td>Journals</td>
</tr>
</tbody>
</table>
value-added tax (VAT), which makes library materials very expensive. The funds for books come directly from the national government (80 percent) and from the university (20 percent) through tuition. There are no private funds available for libraries, but sometimes the library does get special funds for buying materials through departments. Journals have priority over books, but overall the funds are totally insufficient to stock the library. The library seems to be relying more on exchange now as well. Theses are used for exchange purposes. Unfortunately, at the Sorbonne there are no computers available for managing materials funds. The budget justification at the Sorbonne depends upon data showing the cost rise, and departmental advocacy for needs on building and maintaining collections.

"... the cost of periodicals to which [French] libraries subscribe has increased between 1981 and 1986 by an average of 7 points more than the cost of living."

According to Marion, Pierre Carbone from DBMIST is aware of price trends for materials and what is being done at French university libraries. A report sent to the author by Carbone indicated that the cost of "periodicals to which [French] libraries subscribe has increased between 1981 and 1986 by an average of 7 points more than the cost of living." Books showed less of an increase during this period because "libraries have chosen to maintain their periodical subscriptions to the detriment of their book purchases; consequently, they have in most cases purchased cheaper monographs . . . ." DBMIST also has computers available for keeping proper records.

Library Budgeting in Germany

Two libraries in Germany were visited and there was correspondence with another library. In Berlin, the Technische Universitaetsbibliothek Director Helmut Sontag and his staff indicated that serials are consuming 50 to 60 percent of his budget, and there is very little room for the purchasing of monographs. The budgetary process is automated at the Technische Universitaetsbibliothek and the other two libraries mentioned here. The Preussischer Staatsbibliothek and the Heidelberg Universitaetsbibliothek are also completely automated for acquisitions. At the Staatsbibliothek Preussischer Kulturbesitz (SBPK), Kurt Wolfgang Drozd, head of acquisitions, has created an automated price index for books and periodicals showing price development since 1980 by subject area and by country. Many academic libraries use this index for comparison but compile their own price studies to show the trends.

University libraries in Europe, which are state-funded institutions, have not typically obtained private donations for acquisitions, since seeking private funding is not the practice, and philanthropy does not occur. In Germany many universities have a second source of funding from the government, i.e., research monies from a government research council. At the Universitaetsbibliothek Heidelberg, the library, in addition to regular funds, gets supplementary monies from the Deutsche Forschungsgemeinschaft (German Research Council) for the support of foreign materials in special subject areas designated according to a national collection plan. Marion Mallmann-Biehler, deputy librarian, supplied the Heidelberg budget for acquisitions, which is computer produced. It is divided by books, series, continuations, magazines, newspapers, antiquarian monographs, antiquarian magazines, and manuscripts. Each segment also shows the foreign costs. The library also has a detailed subject breakdown.

One of the factors that has reduced funds available to research libraries in Germany is the phenomenal growth of university libraries over the past twenty years. Since the national and state governments support the budgets, a larger number of libraries reduces expenditures overall. There has been considerable research in Germany on the costs of materials. Of
particular interest is the work by Rolf Griebel, Bamberg University, whose recent address to the national library association on "Preisindizes und Haushaltungsplanung" is a very complete explication of what is happening in the price index field. Griebel is seeking to develop an academic index as well and looking toward vendors as the most productive source for price data.

In summary, there are some encouraging signs for collection managers who need more data from Europe. First, research libraries in the Netherlands, Germany, and France are moving toward better informed decisions through the use of computerized data. Second, serials expenditures appear to be outstripping monographic expenditures in European libraries as well (although this may change somewhat with the strengthening of European currencies). Third, libraries are increasingly concerned about the minimal funding available and are relying more on resource-sharing arrangements. One promising effort is occurring in Germany where a national resource-sharing plan is supported by government funds. This could provide a model for the United States. Fourth, private funding for acquisitions is not available to European institutions that are predominately state supported institutions. Finally, there is interest in obtaining price data and there are efforts underway to collect better data.

**Effects of the Dollar's Loss in Value**

The most deleterious effects on acquisition budgets have resulted from the continued downward trend of the dollar against West European currencies. *Library Issues* (Ann Arbor, Mountainside Publishing) has been reporting on the changes in the dollar's value in a section of the newsletter entitled "Dollar Watch." In March 1987, it reported on the dollar's loss in value during 1986: Britain (-2.0 percent), France (-14.2 percent), Germany (-20.3 percent), Japan (-20.7 percent), Netherlands (-20.1 percent), and Spain (-13.5 percent). The dollar's average loss in 1986 was 13.1 percent. The vendors visited in France, Germany, and the Netherlands saw the weakening dollar as a serious threat to American acquisition programs. The dollar downturn can be added right on the top of inflationary increases when calculating total increases. However, it is best to keep figures separate for presenting a case to budgetary authorities since many institutions are willing to give libraries special increases to counteract currency changes.

At Brown University Library, the combination of inflation in the prices of books and journals and the dollar's losses resulted in a 1988-89 budgetary request for a 16.2 percent overall hike in funds. Brown's purchases from selected vendors in Great Britain, France, Italy, the Netherlands, Spain, and West Germany in 1986-87 totaled $498,478. Approximately 40 percent of all materials purchases were foreign. Using Brown's total foreign expenditures of $927,559 and applying foreign currency changes from July 1986 to June 1987, it is estimated that Brown lost $152,956 or had a 14.2 percent increase in costs for foreign materials due to the dollar's loss in value. It can be seen from previous data on publication price increases that the currency changes have more effect than the inflationary increases. Vendors said that American librarians need to keep a better record of foreign currency changes than they have.

One practice discussed at every visit was that of discriminatory pricing, a practice by British journal publishers, and a German publisher of chemistry serials, to charge North American libraries a higher price than the price charged in the country of origin. Although this practice originated in the early 1980s when publishers were trying to recoup the losses when the dollar was strong against foreign currencies, it only came under the scrutiny of librarians in 1984. However, since the dollar has weakened there has not been a compensatory decrease in the prices of these journals. Every vendor was aware of this practice, condemned it, but had no recommendation for resolving the situation. They also uniformly indicated that in their countries American publication prices were hiked upwards. For example, in the Netherlands booksellers are obliged to use special exchange rates set by the
Dutch Bookselling Association in consultation with the Ministry of Economic Affairs. In France the price for import books is free-floating, i.e., the vendor can use a fixed price or not depending on his own preference. As Knut Dorn of Otto Harrassowitz put it: “The Harrassowitz position is clear. A publisher cannot single out one group of libraries. It is unfair.” There were some suggestions about how to lessen the effects of price discrimination, currency fluctuation, and inflation. These recommendations follow, along with the conclusions of this study and recommendations for the future.

Proposals to Counteract Higher Prices

Many of the vendors advocated prepayment and planned to prepay for serials. There are three advantages: in the currency of the vendor, the value is frozen at the point of purchase; multiple invoice processing and payment (actual processing of checks) can be eliminated; and interest can be collected from the vendors. The first advantage may be a risk, since if the dollar gains in value, freezing the payment at a lower rate will mean a loss for the library. The advantages of reducing invoice and check processing are clear, and the interest rates can be calculated to determine if better interest might be gained locally. Some interest rates can be very attractive. In 1987, for example, one vendor offered as high as 6.9 percent if the prepayment invoice for 1988 was paid by January 15, 1987.

Another approach vendors offered was deposit accounts for books. Deposit accounts have the same advantages as serial prepayments. They can freeze currency value; reduce processing; and offer interest advantages. A third method suggested by vendors was to purchase foreign currency and use it to buy books and serials. Brown is considering this approach. Should the dollar strengthen, then the university would hold on to marks, guilders, or pounds and wait until the dollar weakened again. The principal disadvantage to this approach is that it requires large purchases and there are costs for changing funds. Some institutions use this approach, but generally a university would purchase currency not just for the library but for other segments of the campus requiring foreign funds.

“Prepayment, deposit, or foreign currency trading can help reduce costs, but other methods for counteracting higher prices may also be employed.”

Prepayment, deposit, or foreign currency trading can help reduce costs, but other methods for counteracting higher foreign prices may also be employed. For example, a stronger budget proposal that accounts for the changes in the dollar’s strength can make an impression on budgetary authorities. Therefore, it is necessary to be aware not only of inflationary increases but also of the value of the dollar. In many institutions, when it is shown how the pressures of foreign currency losses are affecting materials purchases, many institutions are willing to compensate for these losses to maintain buying power. A complete discussion of various approaches to managing rising materials costs is contained in a paper delivered by Frederick C. Lynden at the February 1987 conference in Oklahoma on “Acquisitions, Budgets and Materials Cost: Issues and Approaches.” Other approaches are recommended in “Periodical Prices: a History and Discussion” by Ann Okerson.

Finally, it should be noted that if unreasonable and excessive pricing of foreign journals should continue, it will be necessary to consider external political pressures such as meeting with publishers, public exposure of pricing practices, and/or cancellation of journals from offending publishers. The continued excessive pricing practices will ultimately be damaging to scholarly communication.

GATHERING FOREIGN PRICE DATA IN THE FUTURE

Visits to vendors, bookselling and trade associations, and librarians have indicated the advantages of gathering data from for-
eign vendors who supply to American academic libraries. Libraries need to encourage vendors to supply such data, both institutional and national. There also needs to be more regular communication among price experts in each country. This study provides one example of the benefits of such communication. Rolf Griebel, an expert on German book prices, was to be visited as part of this study. He was put in touch with Knut Dorn of Harrassowitz. Although he was unable to participate in the study due to a death in the family, his contacts with Dorn suggested to him the possibility of using vendor data for constructing a German academic book and serial price index. This type of crossfertilization has not occurred regularly because there have been too few meetings of experts on library materials prices from Europe and the United States. Morten Hein, chair of ISO Working Group 8, wrote in August 1986 that he thought it would be of value to set up an international mailing list on price indexes. There have also been contacts with Peter Mann of the Centre for Library and Information Management (now called Library and Information Statistics Unit), which produces the British Academic Book Price Index; he has recommended a meeting among international experts. LIBER plans a meeting in April 1989 to consider, among other things, the price index question. Such a meeting would be another significant step toward better data. There are still questions remaining. For example, who are the experts on French academic prices? Can LIBER assemble the experts interested in pursuing the production of price indexes? Which vendors are interested in participating in such a meeting? It is important that such meetings will occur soon in order to capture the momentum generated by interest of both librarians and vendors. These meetings will hopefully identify what problems still exist that might prevent the production of academic book and serial price indexes; which countries should have indexes; what standards these indexes should follow; who should be responsible for producing them; and how they could best be distributed to the library community.

CONCLUSION

The following general conclusions emerged from the study:

- Although there are general data from publishing/bookselling associations available in France, Germany, and the Netherlands, vendors are really the best source of information on foreign price trends for "academic" titles.

- Actual inflation rates for foreign titles are not as high as exchange rates. It is the declining value of the dollar that is imperiling budgets. Librarians should therefore spend time tracking currency changes that are heavily affecting the costs of foreign titles.

- One possible way of dealing with the currency changes is to take advantage of prepayment plans offered by vendors on their serial lists.

- As studies by librarians in France, Germany, and the Netherlands proved, local cost studies are an effective means of calculating the cost rise on foreign titles supplied to institutions.

- There are sources of data on price trends of foreign materials that can be used for comparison purposes: France: Livres Hebdo; Germany: Buch und Buchhandel in Zahlen; and the Netherlands: Stichting Speurwerk’s Boeken-Titelproduktie.

- The International Publishing Association is concerned enough about the price increases that it has polled libraries about the effects of high priced serials on the purchasing of monographs.

- In addition to being able to produce general data on the prices of monographs supplied on blanket orders, some vendors can now supply data that are institution specific. Those vendors that cannot do so are now seeking to provide such a service.

- All of the parties visited were informed about the existence of a new draft international standard for price indexes for library materials. In one case, that of the German national price study for books where standard UNESCO subject headings are already used for reporting prices and booksellers wish to use a very simplified subject scheme, the
standard will provide justification for the continued use of the UNESCO subject system.

• A promising method to more accurately reflect price trends is to record an average price per page. This methodology is used by the German annual *Buch und Buchhandel in Zahlen* (Bogen Preisen or prices of ‘‘signatures’’) and may be useful in other studies as a measure of price changes.

• Aware of the British and German discriminatory price practices, vendors, publishing/bookselling association officials were uniformly upset about this ‘‘restraint’’ of trade and will be working actively to discourage these practices.

• Those organizations with computer records are best able to track price changes in library materials and provide information to customers or users. It is essential to provide such information to libraries for use in their budget justification and planning for collection development.

• As European vendors and libraries automate their processes, they need to be made aware of the requirements of North American libraries for library price data.

The framework for better information is there. What is needed now is the encouragement for vendors to do the work. In the long run, librarians need to operate more like business people and protect their interests. They will then notice discrepancies sooner than they did in the case of discriminatory pricing, and they will be able to be more effective in presenting their case for funds for foreign materials.

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**IN FORTHCOMING ISSUES OF COLLEGE & RESEARCH LIBRARIES**

*Inventing the Electronic University* by David Lewis

*State Coordination of Higher Education and Academic Libraries* by Vicki L. Gregory

*The Political Economy of the Academic Library* by Dennis P. Carrigan

*College Library Friends Groups in New York, New Jersey, and Connecticut* by Janet Butler Munch

*Automated Collection Analysis Using the OCLC and RLG Bibliographic Databases* by Nancy P. Sanders, Edward T. O'Neill, and Stuart L. Weibel

*Sources of Professional Knowledge of University Librarians* by Ronald R. Powell
The Learning Resource Center's Role in the Community College System

Doris Cruger Dale

Librarians in a community college system must accept the role of teacher if the library is to become an essential part of the college. The objectives of the library must include bibliographic instruction to provide students with the opportunity to master library skills. There are too many library-independent courses being taught in community colleges and too many dusty books on the shelves. Only if the librarian accepts a positive role as a teacher can this situation be turned around.

Let's start with a basic question: Why is there a library in the community college? The answer is quite simple: tradition. Can anyone envision an academic institution without a library? Universities have libraries, four-year liberal arts colleges have libraries, high schools have libraries, and some elementary schools have libraries.

The first public junior college still in existence was organized in Joliet, Illinois, in 1901 as a two-year extension of Joliet Township High School; and the college students used the high school library. It was not until L. W. Smith's administration from 1919 to 1928 that a separate college library was established with Pauline Dillman as the first college librarian. It was simply assumed that the college would have a separate library, and a librarian would be in charge. From this early beginning, community colleges developed quickly, especially during the late 1960s and early 1970s.

Community colleges offer many opportunities: (1) liberal arts and professional courses that can be transferred to other colleges and universities and applied toward a bachelor's degree; (2) technical and occupational courses leading to certificates and associate degrees in arts and applied sciences; (3) special programs for adults who wish to expand their cultural and leisure experiences or earn a high school equivalency diploma; (4) professional courses for persons improving their skills; (5) remedial courses to qualify students for other curricula; and (6) counseling services.

These opportunities are spelled out in a variety of ways, but there are no statements about libraries or the need to learn library skills or reference strategies. Sometimes that idea is expressed in such documents as a list of library objectives or the book selection policy. It should be included and stressed, not only in the objectives of the college and the library, but also in the mission statement.

The history of the community college library or learning resource center as an instructional service is traced by Gloria Terwilliger in the spring 1985 issue of Library Trends, the first issue of that journal.
to be devoted to community college libraries since October 1965—a twenty-year gap.

Terwilliger uses the term learning resource(s) center. In this article I will use the terms library and learning resource(s) center (LRC) interchangeably. The terminology is still in a state of flux. Many community colleges use the term library, and I visited one that called it a library LRC. The names learning resources, learning resources center, learning center, and educational resources library center are also used, as are the terms instructional resources and instructional services. Library media center, which is used by many school libraries, is also found. Richard Rowe suggested in American Libraries that librarians should now be called chief information officers. The change of name is probably an attempt to indicate to the faculty and students that the role of library services in community colleges is changing, but it doesn’t always work. The name “Learning Resources Center” may be engraved in stone over the door, but the sign on the door reads “library hours.” The receptionist may answer the phone “LRC,” but if you want to meet a friend, you say “I’ll meet you in the library.”

Terwilliger begins her history by mentioning B. Lamar Johnson’s experiments at Stephens College in Columbia, Missouri, when he tried to bring about a closer relationship between library and classroom. In the 1940s the forty-second yearbook of the National Society for the Study of Education was written by a Committee on the Library in General Education. The statement was made that the library should be the resource center of the college.

In the late 1960s and early 1970s, there was a tremendous growth in the number of comprehensive community colleges. Each had a learning resource center, although it was often built without consulting the librarians. In the 1970s, the LRCs became involved in instructional development and computer-assisted instruction. The 1972 “Guidelines for Two-Year College Learning Resources Programs” influenced the development of the LRCs. Terwilliger states: “Learning resource center systems, services and materials have been designed and structured as supports for achieving institutional instructional objectives.” In most of the statements about libraries or learning resource centers in community colleges the term support appears again and again.

Most librarians would agree that the primary task of any library in an educational institution is to provide materials and facilities to carry out the instructional program of the school. The library must reflect the basic purpose and philosophy of the community college. Harriet Genung in 1953 called the community college library the “heart of the college.” This idea was further developed by Louis Shores when he outlined his library-college philosophy. The concept of the library-college as conceived by Shores was composed of two parts: (1) independent study by the student was to be the essence of the library-college, and (2) the sum total of humanity’s community possibilities in all formats, levels, and subjects was to be provided to the student. These are rather grandiose ideas, given current budget restraints and the realities of the situation today.

In a very perceptive article written in 1931, Edith Coulter listed the following three functions of the community college library: (1) teaching—students must learn how to discover information for themselves and must become self-reliant library users; (2) professional needs—some specialized materials must be provided for faculty members to keep up-to-date in their fields; and (3) community needs—the adults in the community must be provided for (although the community college library should not attempt to replace other information centers such as the public library); it should make available to the community specialized information not obtainable elsewhere. The first function—teaching—is the most important, but it is not stressed enough.

One way to examine the philosophy and goals of most community colleges is to examine their catalogs, which also project the image of the school’s library. In many instances the philosophy of the college is stated in broad terms with no concrete meaning for library services. For example, Lincoln Trail College
"The first function—teaching—is the most important, but it is not stressed enough."

belongs to the people whom it serves and who support it. The college strives to be responsive to individual and collective needs of its citizens. LTC seeks to meet the diverse educational needs of all the people in the geographical area it serves. Comprehensive programs are offered to meet the educational needs of the district by preparing students for a full participation and active involvement in their society. The college serves as a stimulus to raise the level of intellectual and cultural aspiration and achievement of the people in its area. Lincoln Trail College is committed to the pursuit of excellence in a context of concern for all.

Lincoln Trail College is dedicated to providing educational opportunities which will permit persons of all ages to enrich their lives and advance their careers to the limits of their desires and potential. Students are challenged to become competent in their area of study, to develop and exercise independent judgement which results in responsible citizenship, to think logically without bias and prejudice and to seek wisdom as well as pursue knowledge.

Very few catalogs spell out the specific objectives of the library. In the Rend Lake College catalog, the objectives of the LRC are only hinted at: "The Learning Resource Center plays a vital role in the instructional process of Rend Lake College. Students, faculty and other district residents are encouraged to make full use of its facilities for study, research, leisure reading, class preparation and browsing."

Two questions emerge from this general study: (1) Is the LRC fulfilling its teaching function? (2) Is the LRC providing sufficient materials to meet curriculum requirements? The literature on library orientation and instruction is very extensive. An annual conference on library orientation is held each year at Eastern Michigan University (the first one was held on May 7, 1971). Tours alone are of little value, although librarians persist in giving them at the beginning of each academic year. Individual aid by the library staff is the most used and most expensive type of library orientation. Many librarians have told me that they are burned-out from desk duty during which they explain the use of the Readers' Guide over and over. Slide-tape presentations, videotapes, and other visual means are used to reach large groups, but these must be kept up-to-date.

Library instruction is often differentiated from orientation and is defined as a specific scheduled course for credit. These courses can range from one to three credits. I have found many course titles in various college catalogs: Library Skills, Use of Books and Libraries, Finding Information, Introduction to Research, Access to Information, Effective Use of Learning Resources, Enjoying American Magazines, and Audiovisual Materials and Equipment. Many libraries offer self-instruction courses and respond to students' questions via feedback bulletin boards. Librarians offer term-paper clinics when needed. Courses for faculty are fewer. One library maintains faculty pro-
files on three-by-five cards that include individual faculty pictures. Computer database management systems lend themselves to this type of analysis and could provide current information about new books and services to faculty.

In planning a library instruction program in a community college, several questions must be answered: will the course be required or an elective, who will teach it and who will be taught, what will be taught, when will it be taught, where will it be taught, and how will it be taught? One successful library instruction course has evolved over several years at Earlham College. There are three basic principles in this program: integration, demonstration, and gradation.

1. The instruction is integrated, whenever possible, into the course work in those courses requiring intensive use of the library.

2. A class period (or more) is set aside for one of the library staff to demonstrate the search for and use of library materials. Each student receives an annotated bibliography which locates and describes the most important reference tools for that course and watches the librarian demonstrate the use of these sources by working through a library search similar to what the student himself is facing.

3. The instruction is gradated—it builds on previous instruction.

"The greatest benefit of an effective program of library instruction is that it can bring the library into its rightful position as an essential element in a college education."

James Kennedy concludes "the greatest benefit of an effective program of library instruction is that it can bring the library into its rightful position as an essential element in a college education." Although designed for a four-year liberal arts college, this program has implications for community colleges, especially for their liberal arts courses.

Before undertaking an elaborate library instruction program, a needs analysis survey of both the students and the faculty should be done. A questionnaire designed to measure student opinion of library orientation and instruction can be distributed. One such study by Elizabeth Badger revealed that 85% of the students planned to transfer to four-year colleges and 80% felt adequately prepared to use the community college library.

To be the heart of the college—a goal universally desired—has not been universally reached. One seminal study completed in 1966 by Richard Hostrop deserves more attention than it has received. Hostrop researched library usage at the College of the Desert in California, studying the relationship of academic success and selected other factors to actual student use of library materials.

A January 1966 inventory showed total holdings at 14,370. The library has a fully automated circulation control system. The study used the following data: (1) interviews with all department chairs, (2) interviews with students and faculty, (3) six different questionnaires, (4) three kinds of circulation records, and (5) student data.

The study was limited to the circulation of printed library materials to students attending the college in the fall 1965 semester. In a thirteen-week period, 413 full-time students (about one-third of the total full-time student body) made 3,385 withdrawals. Of these, 3,010 (88.92%) were course withdrawals and 375 (11.08%) were noncourse withdrawals. Of the course withdrawals, 400 (13.28%) were from the reserve collection and 2,610 (86.71%) were from the general collection. Of the 14,370 holdings, 2,995 individual pieces were loaned 4,352 times. Therefore, 20.8% of the collection circulated once or more, and 79.2% of the collection never left the library. (With the advent of sophisticated circulation systems, these would be the books appearing on your "dusty-book" reports, those considered for withdrawal from the collection.) Full-time students made much greater use of the library than part-time students. An analysis of student characteristics suggested that (1) students who were older than the average age of the student popu-
lation were likely to be nonlibrary users; (2) females borrowed more library materials per capita than did males; (3) students who achieved greater scholastic success in college were more likely to be library users; and (4) students who carried heavier semester unit loads were more likely to be library users. The student library user also lived at home, had a greater number of books in his home, and had a father with a higher socioeconomic status than the non-library user.

About 18% of the students accounted for about half of the circulation. About half of the students accounted for almost 90% of the course withdrawals. Out of 161 courses investigated, 5 accounted for more than half (53.07%) of the course withdrawals and 40 courses accounted for 95.49% of the course withdrawals. The author reported on interviews with the 9 instructors whose courses generated high library use, representing 23.68% of the 38 full-time instructors who taught graded classes during the period of the study. Hostrup interviewed 23 students who were heavy library borrowers, 14 students who were nonlibrary users but who still got A or B grades, and 5 full-time students whose fall semester grade point average was 4.00 (A).

On the basis of these interviews and other data, the typical library user at the College of the Desert was likely to be female, to withdraw books from the general collection, to spend much time in the library, to have a native curiosity that prompted reading, to come from a higher socioeconomic stratum, and to live in a family home that contained many books, including paperbacks that the student had bought.

In response to a four-question course survey form (with 100% return from the 38 full-time and 20 part-time instructors and an 83.8% return from the 419 full-time students), 121 graded courses were shown to be library independent—that is, both instructors and students agreed that use of library materials was not notably or extremely important in determining final course grades. These 121 graded classes represented 75.15% of all graded courses offered in the fall semester of 1965–66. An additional 28 classes or 17.39% were judged by a majority of the students but not the instructors to be library independent (for a total of 90.30%).

In a student survey of library-instructional relationships, 2 factors out of 20 interfered with library use: (1) instructors were not library oriented, and (2) there was too much noise in the library. In 12 of the 161 graded courses (7.45%) there was agreement by both instructors and students that the use of library materials was extremely important in determining final grades. Although the use of library materials was not very important for success in examinations, 10 (83.33%) of the 12 classes reported that use of library materials was very important in order to get a good grade on a term paper. The 12 library-dependent classes were taught by only 5 instructors. The students implied that motivation to use the library came from two sources: the instructors and the library staff.

"Most courses stimulated little or no student use of library materials."

Both hypotheses tested in this study were accepted by the researcher: (1) there are few student characteristics associated with the use of library materials, and (2) most courses stimulated little or no student use of library materials. This study points to the need for more precise and accurate circulation statistics from community college libraries. Hostrop recommends that (1) the library staff provide library-use instruction; (2) community college libraries establish library committees; (3) library staff conduct in-service workshops for new instructors, and (4) library-instructional objectives be established and implemented.

A study of satellite learning centers of U.S. community colleges demonstrates how difficult it is to provide service to students at these centers. Of those colleges responding to the survey, 82% operated satellite learning centers, but 73% received no library support.
Various use studies have demonstrated that miles of books in many libraries are hardly ever used. Although many studies used circulation records, Robert Broadus states that "use of materials in the building seems to be parallel and proportional to circulation." Recent materials are used most frequently, and most Americans do not use materials in languages other than English.

Some specific recommendations gleaned from field trips and research studies include the following:

1. Examine your college catalog. What are the objectives of the college? Do they include one relating to the mastery of library skills to promote lifelong learning? Are the objectives of the library clearly stated?

2. Do a needs assessment, a user study, a study of circulation records, and a study of the use of materials in the library. Before beginning any studies, read the document prepared by the Subcommittee on Use and User Studies, Collection Management and Development Committee of RTSD. This document provides a summary of the methods available to determine the extent to which books, journals, and other library materials are used.

3. Develop a three-credit library instruction course, in-service workshops, term-paper clinics, and informal networks with faculty. Teaching Librarians to Teach, by Alice S. Clark and Kay F. Jones may be helpful.

4. Develop a good public relations program, good signs, a newsletter, and articles in the school paper. You do not have a captive audience, as is often assumed in academic settings. You must win over both the students and the faculty. Get out from behind the desk, quit checking out books yourself, don't shelve books, and get involved in curriculum planning, instructional design, faculty meetings, and informal networks.

5. Weed the dusty books, the books not used, and quit trying to preserve the world's knowledge—it's impossible anyway; even the Library of Congress no longer tries to do it. Now that the computer can issue a "dusty book report" weeding is easier.

6. Investigate using technology to create connections between radio, television, video, and computers and library materials.

"Why Is This Library?" a guest editorial in the fall 1985 issue of Community & Junior College Libraries, prompted this article. Perhaps the library is because of tradition, apathy, prestige. How can one be against apple pie, the American flag, and libraries? But it is interesting that in a recent book on excellence in the community college, not a single chapter is devoted to the library or the learning resource center. Two paragraphs on communications mention the flow of information between both individuals and groups, but the library is not included. Nor is the library included in the Roueche-Baker Community College Excellence Model. If excellence can be achieved without libraries, indeed, why is there a library? Libraries must be accountable and must stand up and be counted. Public, school, and academic libraries all compete for the same tax dollar. There is considerable duplication, waste, and many dusty books. In his guest editorial, Harold Ettelt concludes:

This library is because we recognize that no introduction to a field of knowledge is complete without instruction in how to proceed beyond that introduction on one's own. What the students learn today can never be all they will ever need to know. The world is evolving, knowledge is expanding, and the best education we can provide students is the ability to cope with rapid change. It is the most important thing they can learn in the college, and only the library can provide it.

Is your library providing it?

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Relationships between academic libraries and state library agencies are increasingly important components of multitype cooperation. This study assesses the needs of Pennsylvania’s academic libraries. Results from a mailed survey identify a number of unmet needs that can be addressed by the state library’s Office of Resource Sharing and Academic Libraries. These include: advocacy of academic library needs; linked system protocols; telecommunications; and new technologies. Focus groups composed of selected academic librarians have discussed these unmet needs in some detail, confirming their validity and suggesting how the state library might address them. Both the process and the product of this study may be useful in other states where stronger relationships between state library agencies and academic libraries are desired.

Academic libraries and state library agencies are increasingly interdependent. Academic libraries look to state library agencies to coordinate needs that cross traditional, type-of-library boundaries. State library agencies regard academic libraries as important participants in information access and delivery. The purpose of this study is to assess the needs of academic libraries in Pennsylvania that can be addressed by the State Library of Pennsylvania’s Office of Resource Sharing and Academic Libraries. The methodology and results may interest other states that desire stronger relationships between academic libraries and state library agencies.

EMERGING RELATIONSHIPS

Not so long ago relationships between academic libraries and state library agencies were very limited. State libraries usu-
ally focused on services to state government, public library development and, in some cases, school library services. Academic libraries, when they looked beyond their campuses, tended to relate to bibliographic organizations such as the Center for Research Libraries or regional union catalogs. Occasional consultation might occur on limited topics such as interlibrary loan guidelines. But relationships were, for the most part, left fallow.

Changes in the environment are encouraging academic libraries and state library agencies to develop stronger working relationships. Academic libraries want to take advantage of new technologies, economies of scale, and resource sharing that can often be approached on a state or regional basis. State library agencies want to encourage the effective use of all library resources in their respective states.

Title III, Interlibrary Cooperation, of the Library Services and Construction Act (LSCA) has been the catalyst for developing relationships between academic libraries and state library agencies in many states. Added in July 1966, Title III has provided state library agencies with federal funds to encourage cooperation among libraries of all types. As the result of projects funded by LSCA-III, academic libraries and state library agencies in many states have forged relationships to meet their respective needs. In many states, statutes have been passed, amended, or interpreted to permit state library agencies to work directly with academic libraries.

Academic libraries and state library agencies work together to address issues of mutual concern. Much of this work is accomplished through direct grants to consortia and libraries for specific activities. Other work is accomplished by committees, boards, or the staffs of the state agency and participating academic libraries. Relationships are expanding in scope, making them increasingly important components in the environments of both institutions.

Library literature provides three recent proposals for strengthening relationships between academic libraries and state library agencies. Mitchell proposes improving library services throughout North Carolina by expanding cooperation among libraries of all types, with a special emphasis on academic libraries. The New Jersey document calls for developing a liaison office in the State Department of Higher Education and full academic library participation in networking. The Montana State Library has recently involved academic libraries in a multitype pilot project to test the feasibility of a statewide union catalog. This study is intended to contribute an empirical base to the literature to assist others in achieving more benefits from emerging relationships between academic libraries and state library agencies.

"With the funding of LSCA-III, the State Library of Pennsylvania began making grants for projects involving academic libraries."

RELATIONSHIPS IN PENNSYLVANIA

The experience of Pennsylvania is one example of how relationships have developed between academic libraries and state library agencies. With the funding of LSCA-III, the State Library of Pennsylvania began making grants for projects involving academic libraries. By 1975, a clear mutual interest in fostering resource sharing was addressed when the state library began using LSCA-III funds to encourage more than fifty academic libraries to enter their holdings into the OCLC database. In 1972, the state library subsidized the operations of the Interlibrary Delivery Service, a statewide, multitype courier service, created in 1969 with an LSCA-III grant to the Associated College Libraries of Central Pennsylvania.

Concurrently, the state library included academic libraries in a series of studies and directories to enhance resource sharing throughout the commonwealth. Academic libraries were included in the Directory of Pennsylvania Library Resources prepared under contract by the Drexel University Graduate School of Library
Science in 1972. Academic libraries were included in federally funded planning documents such as the *Pennsylvania Library Master Plan Committee Report of 1974* and *Bibliographic Access in Pennsylvania of 1979*. During a fifteen-year period, support developed to amend Pennsylvania law to permit the development of direct relationships between the state library and academic libraries. With support from both the academic library community and the state library, this change was accomplished in 1981 when the State Librarian was given statutory authority to "promote and support cooperation among the various types of libraries in Pennsylvania for the purpose of increasing the services and resources through libraries." In 1982–83, academic libraries participated fully in developing a comprehensive plan of library development. When *Access Pennsylvania*, the state library’s current long-range plan, was implemented, the role of academic libraries had developed to the point that a Resource Sharing and Academic Libraries Section was created within the state library to carry out initiatives related to academic libraries. By 1986, resource sharing was well under way and a fuller understanding of the specific concerns of academic libraries was appropriate. To that end, the proposal for this study was approved.

**OBJECTIVES AND METHODOLOGY**

This study is intended to assess academic library needs that can be addressed by the State Library of Pennsylvania’s Office of Resource Sharing and Academic Libraries. The study has three objectives:

1. to identify high-priority needs among Pennsylvania academic libraries.
2. to differentiate between those high-priority needs that are being addressed satisfactorily and those that are not.
3. to collect recommendations from academic librarians on how the state library might best meet high-priority needs that are not being satisfactorily addressed.

A two-phase research methodology was employed. The first phase was built around a population survey of Pennsylvania academic libraries to collect data on needs and satisfaction. The survey addressed the first two objectives by identifying loosely defined areas of need and satisfaction. The second phase used focus groups, composed of librarians representing a range of academic libraries, to define and interpret the results of the survey and to recommend appropriate action for the state library. From a methodological point of view, the two-phase research design was useful because it provided an accuracy check on the survey data and focused group discussions on topics where unmet needs are highest and programs are most likely to be developed. The following paragraphs discuss the methodology and response in more detail.

A survey questionnaire was developed to collect information about three broad areas of services supporting academic libraries that the state library considered appropriate to develop or enhance. In the first section libraries were asked to indicate their need for, use of, and satisfaction with eleven activities related to access and resource sharing. In the second section respondents were asked to identify their need for, use of, and satisfaction with eleven technical assistance services related to local library operations. In the third section libraries were asked to indicate the importance of, the extent to which the library addresses, and satisfaction with eleven general environmental issues affecting academic libraries. The body of the questionnaire is provided in appendix A.

Respondents were also asked to identify their highest priority needs overall and within each section of the questionnaire. Open-ended questions were provided in each of these sections to encourage unique responses. The questionnaire concluded with three demographic questions on networking and automation that could not be answered with available NCES data. The questionnaire was developed in consultation with state library personnel and pretested in four academic libraries in Maryland. The final draft was reviewed with members of the Pennsylvania Council of Library Networks, an organization composed of representatives from library
networks and academic library consortia within the commonwealth. The questionnaire was mailed to directors of the population of 180 libraries at Pennsylvania postsecondary institutions offering at least a two-year degree. A cover letter was included requesting a response by December 1986. No follow-up mailings were made, but responses were accepted through January 1987.

Usable responses were received from directors representing eighty-two libraries or 45.5 percent of the population. Two sample chi-square analyses indicated no significant difference at the .01 level between responding libraries and the population of libraries on four key demographic variables: Carnegie classification; HEGIS classification; public or private support; or number of volumes (see table 1). It is assumed that responses reflect the needs and satisfaction levels of Pennsylvania academic libraries.

Responses were analyzed using the SPSSx statistical package. Open-ended questions were coded and analyzed. Marginal data for need or importance, use of address, and for satisfaction are presented in the appendix. Statistical analysis was limited to percentages and chi-squares to facilitate understanding and encourage discussion in the focus groups.

The second phase of the research was built around meetings with four focus groups selected for their ability to represent important facets of the Pennsylvania academic library community: Associated College Libraries of Central Pennsylvania; Council of Pennsylvania Library Networks; Pennsylvania Community College Libraries Council; and State System of Higher Education Library Council. Each focus group meeting began with a review of the priorities and satisfaction levels developed from the survey data. Since most of the participants had completed a questionnaire and were familiar with the study, the review quickly summarized the study goals and procedures and emphasized presenting the analyzed data.

Focus group participants were then guided through a discussion of the data emphasizing three areas of questions. How does this information compare with your understanding of the needs and satisfaction levels of academic libraries in Pennsylvania? What are the concerns involved in addressing these needs? What specific activities might the state library provide that would address these needs effectively? Focus group discussions were collected and assessed. They form an integral part of the analyses and recommendations in this report.

**PRIORITIES**

At the end of the survey questionnaire, respondents were asked to rank their library’s five most critical needs in priority order. Responses indicated academic library priorities for services that might be developed or enhanced by the State Library of Pennsylvania’s Office of Resource Sharing and Academic Libraries. A value voting technique was used to rank these responses. Each respondent’s highest priority was assigned a value of five, the second highest priority a value of four, and so forth through the five needs listed. Values assigned for each need by all respondents were then summed to arrive at overall need priorities. Specific questionnaire wording, number of respondents (R), percentage of respondents indicating they already use services or address issues (Address%) and mean satisfaction levels (SatisX) are provided for each priority (Priority) in the appendix. Recognizing the limited time available for focus groups to review the priorities and to suggest ser-

### TABLE 1

<table>
<thead>
<tr>
<th>Variable</th>
<th>Chi-square Observed</th>
<th>Chi-square .01</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carnegie classification</td>
<td>9.477</td>
<td>13.277</td>
<td>4</td>
</tr>
<tr>
<td>HEGIS classification</td>
<td>14.844</td>
<td>15.086</td>
<td>5</td>
</tr>
<tr>
<td>Public/private</td>
<td>.476</td>
<td>6.634</td>
<td>1</td>
</tr>
<tr>
<td>Number of volumes</td>
<td>9.823</td>
<td>13.277</td>
<td>4</td>
</tr>
</tbody>
</table>
vice alternatives, it was decided to limit analysis of priorities to the thirteen of thirty-three needs or issues with the highest value scores.

Needs are listed in priority order (Pri#) in table 2. The summed valued scores (Val) are provided to indicate the relative level of need for each priority. Respondents indicate three distinct value score plateaus for high-need priorities. New technology (e.g., CD-ROM, laser disks, micros, etc.) and development of machine readable bibliographic databases including retrospective conversion are the highest needs of Pennsylvania academic libraries. Many respondents list these two needs as their first or second priority. The six needs beginning with union lists (e.g., statewide or regional catalogs, serials lists, manual or automated) and ending with personnel development and status form a second plateau of high-priority scores. Many respondents list these needs among their top five priorities, and some respondents indicate they are their highest priorities. The last five needs form a third plateau. Respondents regularly listed them among their top five priority needs.

Also of interest is identifying the broad areas of concern (ASI) from which specific high-need priorities were drawn: access and sharing of resources (A); provision of library services (S); and issues affecting academic libraries (I). Table 2 clearly indicates that Pennsylvania academic libraries are not seeking state library technical assistance or guidance in the direct provision of local academic library services.

Only two provision-related needs—access to bibliographic information and cooperative technical services—appear in the high-need priorities, and they are near the bottom. Instead, the data indicate that Pennsylvania academic libraries are seeking assistance on access and issues-related needs.

Taken as a whole table 2 indicates that focus groups might profitably discuss four general areas of need. New technologies, broadly defined as including CD-ROM, microcomputers, and other equipment; machine readable databases; retrospective conversion and other applications, form the highest priorities. Traditional cooperative activities, including union lists, reciprocal borrowing, cooperation with other types, and cooperative technical services, form a second area of need. Infrastructure concerns, including interlibrary loan, communication networks, telecommunications, linked system protocols, and access to bibliographic information, form a third set of needs. The three remaining needs, advocacy, personnel development, and preservation, can not be grouped under a convenient label and are considered separately.

UNSATISFIED NEED PRIORITIES

To determine which high-need priorities are already being satisfactorily addressed, responding academic libraries were asked to indicate the extent to which they already use services or address issues in each priority and their satisfaction with

### TABLE 2
HIGH-NEED PRIORITIES

<table>
<thead>
<tr>
<th>Need Priorities</th>
<th>Pri#</th>
<th>Val</th>
<th>ASI</th>
<th>Q#</th>
</tr>
</thead>
<tbody>
<tr>
<td>New technology</td>
<td>1</td>
<td>128</td>
<td>I</td>
<td>30</td>
</tr>
<tr>
<td>Machine-readable bibliographic databases</td>
<td>2</td>
<td>104</td>
<td>A</td>
<td>10</td>
</tr>
<tr>
<td>Union lists</td>
<td>3</td>
<td>78</td>
<td>A</td>
<td>1</td>
</tr>
<tr>
<td>Reciprocal borrowing</td>
<td>4</td>
<td>75</td>
<td>A</td>
<td>4</td>
</tr>
<tr>
<td>Cooperative relations with other types</td>
<td>5</td>
<td>70</td>
<td>I</td>
<td>31</td>
</tr>
<tr>
<td>ILL communication networks</td>
<td>6</td>
<td>70</td>
<td>I</td>
<td>28</td>
</tr>
<tr>
<td>Advocacy of academic library needs</td>
<td>7</td>
<td>69</td>
<td>I</td>
<td>26</td>
</tr>
<tr>
<td>Personnel development and status</td>
<td>8</td>
<td>67</td>
<td>I</td>
<td>32</td>
</tr>
<tr>
<td>Telecommunications</td>
<td>9</td>
<td>49</td>
<td>I</td>
<td>29</td>
</tr>
<tr>
<td>Linked online system protocols</td>
<td>10</td>
<td>48</td>
<td>I</td>
<td>25</td>
</tr>
<tr>
<td>Access to bibliographic information</td>
<td>11</td>
<td>42</td>
<td>S</td>
<td>14</td>
</tr>
<tr>
<td>Preservation of library materials</td>
<td>12</td>
<td>42</td>
<td>A</td>
<td>2</td>
</tr>
<tr>
<td>Cooperative technical services</td>
<td>13</td>
<td>41</td>
<td>S</td>
<td>12</td>
</tr>
</tbody>
</table>
their efforts. Table 3 lists high-need priorities in ascending order of mean satisfaction (SatisX), measured using a five-point Likert scale. The percentage of libraries who are addressing the priority (Address%) and the number of libraries responding (R) on each priority are also provided.

For the purposes of this study, mean satisfaction levels of less than three (3.00) on a five-point Likert scale are assumed to identify high-need priorities that are not currently being satisfactorily addressed in Pennsylvania academic libraries. The first four priorities in table 3 report mean satisfaction levels of less than three, indicating high-priority needs that are not being satisfactorily addressed. Pennsylvania academic libraries are not satisfied with their efforts to address advocacy of academic library needs in state government, linked online system protocols, telecommunications (e.g., fiber optics, wired campus, microwave, etc.), or new technology (e.g., CD-ROM, laser disks, micros, etc.).

Mean values between three (3.00) and four (4.00) on a five-point Likert scale are assumed to identify high-need priorities that are being satisfactorily treated or addressed but that are open for further improvement. Priorities listed between personnel development and access to bibliographic information are need priorities where Pennsylvania academic libraries report reasonable satisfaction with current efforts, but which they think might be improved to good effect.

Mean values above four (4.00) on a five-point Likert scale are being addressed most satisfactorily. Reciprocal borrowing is operating very well among Pennsylvania academic libraries.

A second observation is the positive correlation between the percentage of libraries using a service or addressing an issue priority need (Address%) and the satisfaction with the area of need (SatisX). Pennsylvania academic libraries seem to be reasonably satisfied with what they are doing, but would appreciate assistance from the state library on several priorities they have not yet been able to address.

**FOCUS GROUP RECOMMENDATIONS**

High-need priorities and unsatisfied need priorities were shared with four focus groups, each composed principally of academic library directors, to develop recommendations on how the Office of Resource Sharing and Academic Libraries should address the needs of academic libraries in Pennsylvania. The four focus groups were: the Associated College Libraries of Central Pennsylvania; the Community College Library Consortium; the Council of Pennsylvania Library Networks; and the State System of Higher Education Library Council. Each of these groups could make a valuable and unique contribution in interpreting the survey results and recommending appropriate action for the state library.

Each focus group meeting began with a

<table>
<thead>
<tr>
<th>TABLE 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UNSATISFIED NEED PRIORITIES</strong></td>
</tr>
<tr>
<td><strong>Need Priority</strong></td>
</tr>
<tr>
<td>Advocacy of academic library needs</td>
</tr>
<tr>
<td>Linked system protocols</td>
</tr>
<tr>
<td>Telecommunications</td>
</tr>
<tr>
<td>New technology</td>
</tr>
<tr>
<td>Personnel development</td>
</tr>
<tr>
<td>Preservation of library materials</td>
</tr>
<tr>
<td>ILL communication networks</td>
</tr>
<tr>
<td>Machine-readable databases and retrocon</td>
</tr>
<tr>
<td>Union lists and catalogs</td>
</tr>
<tr>
<td>Cooperation with other types of libraries</td>
</tr>
<tr>
<td>Cooperative technical services</td>
</tr>
<tr>
<td>Access to bibliographic information</td>
</tr>
<tr>
<td>Reciprocal borrowing</td>
</tr>
</tbody>
</table>
"Small libraries, for example, were more likely to be interested in direct consultation services, while larger libraries with research and historical collections expressed very high interest in preservation."

review of the needs priorities (see table 2) and unsatisfied needs (see table 3). Participants discussed the information and, in general, confirmed that it reflected their understanding of academic libraries in Pennsylvania. In discussing need priorities, each focus group noted distinctions in interpreting needs data on the basis of size of library and institutional goals. Small libraries, for example, were more likely to be interested in direct consultation services, while larger libraries with research and historical collections expressed very high interest in preservation. The focus groups also pointed out that some needs might best be met by involving other types of libraries to a greater or lesser extent. The following paragraphs summarize comments on the first four unsatisfied needs and for preservation, each of which were considered appropriate and desirable areas for the state library to develop or enhance services. 18

Advocacy of academic library needs within state government is considered to be a broad priority that can be addressed in a number of ways. Within the state library agency, focus groups recommend that the office advocate issues and programs that will benefit academic libraries, such as the interlibrary loan compensation plan proposed in Access Pennsylvania. 19 In other agencies of state government, the office can encourage links with academic libraries through grants and contracts. Concurrently, the office should improve academic library understanding of state government through continuing education on the political and funding processes. The office can also serve an important function by advocating academic libraries and their campus and community roles to chief executive officers and chief academic officers through state government channels and forums. The advocacy of academic libraries should be based on consultative leadership and a strong program of communication between the office, academic libraries, and interlibrary organizations.

Focus groups indicated the office should take a leadership role in working among libraries and networks to develop and implement linked system protocols. Two forms of linking are currently perceived as important. Links among bibliographic utilities, integrated library systems, and gateways will permit enhanced services between libraries. Second, improved ability to link in-house stand-alone library automation systems will result in virtual integrated library systems within academic libraries. Addressing the first part of the need will involve other types of libraries and will be guided by Access Pennsylvania programs of reciprocal borrowing, interlibrary loan compensation, and the statewide union catalog. Addressing individual library needs will be based on evaluation of stand-alone systems, particularly their ability to connect with each other locally and their compatibility with statewide services and criteria.

Telecommunications development for Pennsylvania libraries of all types should be focused in the Office of Resource Sharing and Academic Libraries. The office has already undertaken a study of Pennsylvania telecommunications that is considered a model. New developments in fiber optics, microwave, and cable should continue to be assessed for their ability to meet library needs for voice and data grade communications throughout the commonwealth. The office should plan and help initiate new communication patterns among libraries when appropriate.

Academic libraries would like access to objective information and evaluations of new technology for libraries. They believe this is an appropriate consultative service for the state library agency in that it has an interest in being able to link libraries for resource sharing as well as general library welfare. Academic libraries would like information on both hardware and software for library automation, integrated library systems, and gateways to information in
electronic formats, as well as the telecommunications and linked system protocols previously mentioned.

Academic libraries with research and historical collections and libraries that make use of these collections want the office to undertake a leadership position in preservation. These collections range from nonprint materials in junior colleges to manuscripts and unique holdings in college library special collections and the collections of the major research libraries. Focus group participants first want the office to arrange access to preservation facilities, either by guiding the development of cooperative efforts or by contracting with existing operations. Second, academic libraries want consultative assistance to determine what they should do locally to preserve their collections. They believe the office is an excellent locus for preservation activity throughout the commonwealth.

Finally, focus groups indicate that efforts to implement linked system protocols, telecommunications, and new technologies should be closely coordinated with existing networks and consortia operating in the commonwealth. Efforts to improve bibliographic services, for example, should consider the role of Palinet and PRLC, the regional vendors of OCLC services, as well as the Research Libraries Group and the state library's own CD-ROM union catalog. Similarly, efforts to enhance telecommunications should consider using both commercial and dedicated networks such as those operated by Bell, state government, educational institutions, and bibliographic utilities. Throughout, the state library should maintain a good neighbor policy, encouraging local and regional solutions while setting broad goals and criteria that will facilitate statewide resource sharing and cooperation.

SUMMARY

The purpose of this study has been to identify needs of Pennsylvania academic libraries that can be addressed by the state library's Office of Resource Sharing and Academic Libraries. The questionnaire gathered information on need priorities and levels of satisfaction. The use of focus groups provided guidance to the office on how it might best address unsatisfied, high-priority needs while at the same time building consensus in the academic library community supporting state library actions.

Results of this research suggest that the state library support academic libraries by developing programs and activities that address five high-need priorities that also report high unsatisfied need. Advocacy can be addressed in several ways, in the state library, in other offices of state government, and from state government to academic administrators. The office should continue its pioneering telecommunications efforts and extend them to include the fostering of linked system protocols. The office should develop a consultative role in new technology that would encourage rational implementation of new technologies in the academic library community. Finally, the office should coordinate the development of and access to preservation facilities and should provide guidance for local library preservation activities.

By undertaking these activities the State Library of Pennsylvania will build stronger relationships with academic libraries throughout the commonwealth. As a consequence the state library agency will be better able to coordinate overall library development, especially for those services that depend upon resource sharing among libraries of all types. By using state library services, academic libraries stand to gain assistance on a range of needs that they consider important but undersupported. Carefully designed and implemented initiatives should result in synergistic solutions for issues of concern to both academic libraries and the State Library of Pennsylvania.

The findings of this study may also be helpful to other academic libraries and state library agencies as they work to improve resource sharing and library cooperation. The methodology could be successfully replicated in other states to identify academic library needs that can be appropriately addressed by the state library agency and to build consensus in the
academic library community for such activity. While it is methodologically incorrect to generalize the findings of this population survey or the recommendations of the focus groups, the needs priorities discussed here may be applicable in other states to the extent they are similar to the academic library community in Pennsylvania. Certainly, the results of this study can be used to initiate similar efforts intended to strengthen relationships between academic libraries and state library agencies.

REFERENCES AND NOTES

APPENDIX A. QUESTIONNAIRE AND MARGINAL DATA

I. Access and Sharing of Resources

Listed below are activities for which the state library Office of Resource Sharing and Academic Libraries might encourage to improve access and sharing of resources.

Please Check:
A. Those activities that your library currently needs or anticipates needing this fiscal year.
B. Those activities that your library currently uses.
C. On a scale of 1 to 5, with 1 representing low satisfaction and 5 representing high satisfaction, indicate your library's satisfaction with the activities your library currently uses.

<table>
<thead>
<tr>
<th>Activity</th>
<th>A. Need (R)</th>
<th>B. Use (Address%)</th>
<th>C. Satis. (SatisX)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Union lists (e.g., statewide or regional catalogs, serials lists, manual or automated).</td>
<td>82</td>
<td>100.0</td>
<td>3.72</td>
</tr>
<tr>
<td>2. Preservation of library materials (e.g., deacidification, microform, last copy storage, etc.).</td>
<td>59</td>
<td>30.5</td>
<td>3.16</td>
</tr>
<tr>
<td>3. Cooperative collection development</td>
<td>58</td>
<td>24.1</td>
<td>3.20</td>
</tr>
<tr>
<td>4. Reciprocal borrowing agreements</td>
<td>82</td>
<td>91.5</td>
<td>4.09</td>
</tr>
<tr>
<td>5. Evaluation of automated library systems (e.g., circulation, catalog, acquisitions, ILL, etc.).</td>
<td>72</td>
<td>31.9</td>
<td>3.39</td>
</tr>
<tr>
<td>6. Evaluation of equipment (e.g., furniture, library equipment, microcomputers, etc.).</td>
<td>69</td>
<td>37.7</td>
<td>3.12</td>
</tr>
<tr>
<td>7. Cooperative purchasing (e.g., materials, supplies, equipment, systems, etc.)</td>
<td>53</td>
<td>50.9</td>
<td>3.19</td>
</tr>
<tr>
<td>8. Cooperative collections of nonprint materials (e.g., film, microcomputer software, etc.).</td>
<td>62</td>
<td>43.5</td>
<td>3.43</td>
</tr>
<tr>
<td>9. Cooperative contracting for services (e.g., online databases, service contracts, etc.).</td>
<td>69</td>
<td>56.5</td>
<td>3.55</td>
</tr>
<tr>
<td>10. Development of machine readable bibliographic databases and retrospective conversion.</td>
<td>66</td>
<td>48.5</td>
<td>3.97</td>
</tr>
<tr>
<td>11. Other:</td>
<td>8</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

Priority 1

Now select up to three (3) access and resource sharing activities (numbers 1-11) that represent your greatest needs, whether or not you currently use them. Rank them in priority order, from 1 to 3 with 1 as the highest priority. List only the number (1-11).

1. 2. 3.

II. Provision of Library Services

Listed below are examples of technical assistance that might help you in the operation of your library.

Please Check:
A. Those services which your library currently needs or anticipates needing this fiscal year.
B. Those services your library currently uses.
C. On a scale of 1 to 5, with 1 representing low satisfaction and 5 representing high satisfaction, indicate your library's satisfaction with services your library currently uses.

<table>
<thead>
<tr>
<th>Activity</th>
<th>A. Need (R)</th>
<th>B. Use (Address%)</th>
<th>C. Satis. (SatisX)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. Cooperative technical services (e.g., joint acquisitions, cataloging, periodicals, etc.).</td>
<td>50</td>
<td>58.0</td>
<td>4.13</td>
</tr>
</tbody>
</table>
13. Guidance in technical services (e.g., consulting). 47 40.4 4.05
14. Access to bibliographic information (e.g., MARC, NUC, etc.). 64 93.7 4.05
15. Cooperative reference services (e.g., reference referral, joint online searching, etc.). 52 55.8 3.50
16. Guidance in reference services (e.g., consulting). 40 30.0 3.85
17. Cooperative access services (e.g., shared circulation, reserve, etc.). 28 25.0 3.30
18. Guidance in access services (e.g., consulting). 34 5.9 3.50
19. Guidance in administrative services (e.g., consulting). 40 22.5 4.27
20. Guidance in facility design and development (e.g., consulting). 56 23.2 4.07
21. Clearinghouse (e.g., exemplary models, policies, consultant lists, etc.). 64 18.7 3.14
22. Other: _______ 3 NA NA

Priority 2

Now select up to three library services (Numbers 12-22) which represent your greatest needs, whether or not you currently use them. Rank in priority order, from 1 to 3 with 1 as the highest priority. List only the number (12-22).

1. _______ 2. _______ 3. _______

III. Issues Affecting Academic Libraries

Listed below are some general issues affecting academic libraries that might be addressed by the State Library Office of Resource Sharing and Academic Libraries.

Please Check:

A. Those issues which are important to your library or which you expect to be important to your library this fiscal year.
B. Those issues which your library currently addresses.
C. On a scale of 1 to 5, with 1 representing low satisfaction and 5 representing high satisfaction with your library's efforts to address each issue.

<table>
<thead>
<tr>
<th>Priority</th>
<th>A. Impt. (R)</th>
<th>B. Address % (Address%)</th>
<th>C. Satis. (Satis$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>23. Intellectual freedom</td>
<td>54</td>
<td>68.5</td>
<td>3.78</td>
</tr>
<tr>
<td>24. Electronic information (e.g., statistical data files, digitized test, etc.)</td>
<td>62</td>
<td>43.5</td>
<td>3.78</td>
</tr>
<tr>
<td>25. Linked online system protocols</td>
<td>53</td>
<td>17.0</td>
<td>2.64</td>
</tr>
<tr>
<td>26. Advocacy of academic library needs</td>
<td>65</td>
<td>16.9</td>
<td>2.00</td>
</tr>
<tr>
<td>27. Institutional contracting for library services (e.g., new federal policy).</td>
<td>28</td>
<td>14.3</td>
<td>3.63</td>
</tr>
<tr>
<td>28. Interlibrary loan communication (e.g., IDS, electronic bulletin boards, telefacsimile, etc.).</td>
<td>74</td>
<td>70.3</td>
<td>3.39</td>
</tr>
<tr>
<td>29. Telecommunications (e.g., fiber optics, wired campus, microwave, etc.).</td>
<td>58</td>
<td>34.5</td>
<td>2.64</td>
</tr>
<tr>
<td>30. New technology (e.g., CD-ROM, laser disks, micros, etc.).</td>
<td>80</td>
<td>43.7</td>
<td>3.60</td>
</tr>
<tr>
<td>31. Cooperative relations with other types of libraries.</td>
<td>76</td>
<td>80.3</td>
<td>4.08</td>
</tr>
<tr>
<td>32. Library personnel development and status.</td>
<td>74</td>
<td>62.2</td>
<td>3.37</td>
</tr>
<tr>
<td>33. Other: _______</td>
<td>1</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>
Priority 3

Now select up to three issues (numbers 23-33) that are most important to your library, whether or not you currently address them. Rank in priority order from 1 to 3 with 1 as the highest priority. List only the number (23-33).

1. _______ 2. _______ 3. _______

IV. Composite Priority Ranking

Priority 4

To further refine the specific needs of your library, please select up to five (5) items that you consider to be your highest needs, whether or not they are currently addressed. Rank them from 1 to 5 with 1 as the highest priority. List only the number (1-33).

1. _______ 2. _______ 3. _______ 4. _______ 5. _______

---

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Responses of 100 librarians to a questionnaire revealed a profile of the educational background and attitudes of science librarians involved in bibliographic instruction. A follow-up survey explored the degree to which library school curricula prepare librarians for bibliographic instruction.

Several years ago the University Library of California State University, Long Beach (CSULB), experienced an apparent shortage of science-educated librarians simultaneous with a need to introduce hundreds of science majors each semester to library research. New librarians without science backgrounds, of whom I was one, were assigned to what was then the science and technology department. While some had academic library experience, bibliographic lecturing was a new and unnerving duty. Neither education nor experience had prepared these librarians to deal with what was perceived as the exotic, highly technical literature of the sciences. The only orientation for most had been a dimly remembered course in science bibliography in library school.¹ Later, as CSULB’s library instruction coordinator, I undertook a statewide survey of science librarians involved in bibliographic instruction in an effort to determine how training for librarians to give instruction had been accomplished at other libraries. The results did not solve our dilemma, but did reveal an interesting profile of bibliographic instruction librarians. Librarian response to the questionnaire precipitated an additional, albeit brief, survey of library school education in bibliographic instruction techniques. The literature, though rife with articles on familiarizing students with the bibliography of a specific discipline, lacked information on exactly how librarians are trained to render bibliographic instruction, especially in unfamiliar fields.

METHODOLOGY

Purpose

Some of the survey goals were similar to those previously reported by Barbara Smith; others were more qualitative.² My purposes were:

1. To determine whether other institu-
tions had trained their science librarians in bibliographic instruction techniques in a more systematic way than had CSULB.

2. To determine by what means, in addition to formal training, librarians had developed instructional skills.

3. To determine whether other institutions limited scientific bibliographic instruction to librarians with an appropriate educational background.

4. To determine whether enjoyment of bibliographic instruction in the sciences was influenced by possession of an educational background in the sciences and/or specialized training in bibliographic instruction skills.

5. To determine the degree to which library school curricula have prepared and are currently preparing information professionals to meet the challenge of instructing library users.

The Sample

A preliminary version of the survey was pretested on all seventeen of my colleagues who participated in bibliographic instruction at the time. Their responses and comments helped clarify some questions. They were not surveyed further, nor were they included in the final results. See figure 1 for survey instrument and raw responses.

Surveys, along with self-addressed stamped envelopes, were mailed to 144 California science librarians believed to be engaged in bibliographic instruction. The basis of this sample was a directory of science librarians compiled by an officer of SEAL (Science & Engineering Academic Librarians), an interest group of CARL (California Academic & Research Librarians, an ACRL chapter). Individuals in this directory were indexed not only by name and institution but also by job responsibilities. Twelve questionnaires were returned with only the first box checked, indicating that the respondent was not involved in bibliographic instruction. Excluding these 12, a 77.7% response rate was attained, with exactly 100 completed questionnaires returned.

Results

Academic librarians (two- and four-year schools) accounted for 98 of the respondents. Of these, 57 had been librarians for ten years or more; and 43 had a bachelor’s, master’s and/or a doctorate in a scientific or technical discipline. Given CSULB’s earlier difficulty in recruiting science librarians, this high percentage was surprising. The survey showed that most (n = 37) of the librarians giving bibliographic instruction in biology, medicine, chemistry, or engineering had a degree in a scientific discipline.

Enjoyment level was high. On a five-point scale, the majority of librarians giving bibliographic instruction in each discipline rated their enjoyment 1 or 2. In the sciences, the percentages varied from all four of the librarians giving instruction in astronomy (100%) to 65% of those giving instruction in unspecified scientific fields. Though the numbers are too small to draw conclusions, respondents expressed a high degree of satisfaction even in the nonscientific fields: 100% of the science librarians giving instruction in applied arts and in fine arts rated their enjoyment 1 or 2. The least enjoyed nonscience field was “Other,” with only 62.5% rating their enjoyment 1 or 2. Table 1 shows responses and enjoyment level for each discipline questioned.

“Nearly half of the respondents gave library use instruction only in disciplines in which they themselves had had course work.”

The instruction given by a majority of respondents (n = 57) was limited to scientific fields. The most often taught nonscience bibliographic instruction subjects were in the social sciences, but this involved less than a quarter of those completing the questionnaire. Contrary to CSULB’s expectations at the time, nearly half of the respondents gave library use instruction only in disciplines in which they themselves had had course work. Slightly more than half of the respondents gave instruction in an average of four courses in which they had not had formal education.
Dear Colleague:

I would like to develop a profile of librarians who give bibliographic instruction in science and technology and would appreciate a few minutes of your time to complete this questionnaire. I recognize that reference work is a form of bibliographic instruction, but my present interest is in more formal instructional efforts. Please return in the enclosed self-addressed, postage-paid envelope. Thank you.

Joy Thomas
California State University, Long Beach

If bibliographic instruction is not one of your responsibilities, please check here __ and return the questionnaire. If it is, please continue.

1. How long have you been a librarian? less than 3 years = 3; 3-9 years = 39; 10+ = 57
2. If you have had another career, please specify: 33 (27 in some form of education)
3. Excluding your library degree, what is your educational background?
   36 BA/BS in scientific or technical field
   16 MA/NS in scientific or technical field
   6 doctorate in (3 in sci or tech) 7 certificate in (4 in educational field)
4. In what type library are you presently employed?
   89 college/university 9 community college 1 special 1 public 0 other
5. Approximately what percentage of time do you spend on bibliographic instruction, including preparation?
   48 less that 10% 44 10-25% 4 25-50% 0 51-75% 1 over 75%
6. In what areas of science and technology do you give bibliographic instruction?
   4 astronomy 25 engineering 13 microbiology
   48 biology 15 geology 7 oceanography
   26 chemistry 10 mathematics 8 physics
   10 computer studies 39 medicine 43 other
7. If you give bibliographic instruction in other disciplines, which ones?
   6 applied arts 10 business 9 education 7 fine arts
   14 humanities 23 social & behavioral sciences 16 other
8. If you give bibliographic instruction in disciplines in which you yourself have not had coursework, please list the disciplines.
   average = 2
   48 answered zero 72 answered 1 or less
   94 answered 2 or less
   11 answered 3 or less
   2 answered 10+

FIGURE 1
Bibliographic Instruction in Library Schools Questionnaire Sample
9. How did you learn to give bibliographic instruction? Check all that apply.

- library school    70
- on-the-job training (including in-house workshops) 8
- national, state, or regional workshop 37
- observation 53
- trial-and-error 71
- other

10. If you have had training or experience as a teacher, did it help you in bibliographic instruction?

- yes 43
- no 1
- not applicable 56

11. How long have you been giving bibliographic instruction? less than 3 yrs = 6; 3-9 yrs = 62; 10+ yrs = 29

12. Compared to your other duties, what is your attitude about giving bibliographic instruction?

- strong preference
- strong aversion

13. What is your opinion about the value of bibliographic instruction to students?

- valuable
- worthless

14. Please characterize the bibliographic instruction program with which you are involved. Check all that apply.

- one-time lectures initiated by library 74
- one-time lectures requested by professor 95
- quarter or semester courses 30
- courses shorter than the quarter or the semester 15
- other (please specify) 

Please use the space below for comments.

- 22 respondents commented

Thank you for your time. Please return by June 30, 1985, in the enclosed self-addressed, postage-paid envelope.

FIGURE 1

Continued
TABLE 1

BIBLIOGRAPHIC INSTRUCTION BY FIELD—RAW RESPONSES WITH PERCENTAGE INDICATING SATISFACTION LEVELS OF 1 OR 2

<table>
<thead>
<tr>
<th>Field</th>
<th>Responses</th>
<th>Satisfaction Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Astronomy</td>
<td>4 (100)</td>
<td></td>
</tr>
<tr>
<td>Biology</td>
<td>48 (77)</td>
<td></td>
</tr>
<tr>
<td>Chemistry</td>
<td>26 (73)</td>
<td></td>
</tr>
<tr>
<td>Computer Studies</td>
<td>10 (90)</td>
<td></td>
</tr>
<tr>
<td>Engineering</td>
<td>25 (84)</td>
<td></td>
</tr>
<tr>
<td>Geology</td>
<td>15 (73)</td>
<td></td>
</tr>
<tr>
<td>Mathematics</td>
<td>10 (70)</td>
<td></td>
</tr>
<tr>
<td>Medicine</td>
<td>39 (76.9)</td>
<td></td>
</tr>
<tr>
<td>Microbiology</td>
<td>13 (76.9)</td>
<td></td>
</tr>
<tr>
<td>Oceanography</td>
<td>7 (85.7)</td>
<td></td>
</tr>
<tr>
<td>Physics</td>
<td>8 (75)</td>
<td></td>
</tr>
<tr>
<td>Other Science</td>
<td>43 (65)</td>
<td></td>
</tr>
<tr>
<td>Applied Arts</td>
<td>6 (100)</td>
<td></td>
</tr>
<tr>
<td>Humanities</td>
<td>14 (85)</td>
<td></td>
</tr>
<tr>
<td>Business</td>
<td>10 (90)</td>
<td></td>
</tr>
<tr>
<td>Social &amp; Behavioral</td>
<td>23 (86.9)</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>9 (77.7)</td>
<td></td>
</tr>
<tr>
<td>Fine Arts</td>
<td>7 (100)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>16 (62.5)</td>
<td></td>
</tr>
</tbody>
</table>

By far the most common methods by which respondents were trained for bibliographic instruction (question 9) were trial and error and on-the-job training (71 and 70 responses, respectively). Stabler’s recent study indicated that most newly hired reference librarians believe their on-the-job-training, including training for bibliographic instruction, was inadequate; but 69.9% of my respondents who got on-the-job-training rated their enjoyment of giving instruction 1 or 2 satisfaction level by type of training is shown in table 2. All 57 respondents with ten or more years of experience indicated that they had received more than one method of training. Most frequently cited by these respondents were trial and error (77.2%; \( n = 44 \)) and on-the-job training (63.1%; \( n = 36 \)).

Library school had not instilled instructional skills in these librarians. Of the eight librarians who had some library school course work in bibliographic instruction, half had been in the field less than a decade; but library use instruction was simply not a part of the curriculum when most respondents would have been attending library school, an experience which paralleled mine and that of my colleagues. However, even those few with some library school exposure supplemented it with other training methods. Of those eight respondents who had had some library school training in bibliographic instruction, six reported that they had been given on-the-job training, and five had observed bibliographic instruction. Three librarians indicated that they had availed themselves of opportunities provided by library school, on-the-job training and observation, but still found themselves engaged in trial and error. My findings paralleled Galloway’s; most of her respondents in 1975 had previous teaching experience. A large minority of respondents \( (n = 44) \) had training or experience as teachers; all but one found this helpful.

LIBRARY SCHOOLS

In 1976, Sue Galloway criticized the absence of library instruction courses at library schools; in 1982, Marilyn Lutzker recommended that this ongoing lack be remedied; and in 1983, Howarth and Kenney’s syllabi project found that bibliographic instruction was at least a portion of a course in thirty-three library schools. They did not specify how many schools offered a separate course in bibliographic instruction.

Two years later, there is evidence that a modicum of bibliographic instruction training is offered by library schools. Having discovered from long-term practitioners in the field that their library school training had not included bibliographic instruction, I sent letters to sixty ALA-accredited library schools in the United States and Canada to find out if the situation had changed. Most \( (n = 48; 80\%) \) responded. Even though I had not requested them, many included catalogs, course descriptions, and/or syllabi. I asked general, factual questions, less detailed and much less quantifiable than those asked by Maureen Pastine and Karen Seibert in their study. Did the school teach bibliographic instructional methods/techniques? In the context of what class(es)? For how long had they been do-
TABLE 2
SATISFACTION LEVELS OF RESPONDENTS BY TYPE OF TRAINING RECEIVED

<table>
<thead>
<tr>
<th>Satisfaction Level</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of Training</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Library school</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>On-the-job training</td>
<td>21</td>
<td>30</td>
<td>14</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Workshops</td>
<td>14</td>
<td>15</td>
<td>5</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Observation</td>
<td>16</td>
<td>22</td>
<td>10</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>20</td>
<td>30</td>
<td>15</td>
<td>4</td>
<td>0</td>
</tr>
</tbody>
</table>

ing this? Responses are summarized in figure 2 and seem to indicate a rosier picture than Robert Brundin found in 1985. Techniques or theories of library use instruction are gradually finding a place in curricula. All except one of the forty-eight responding library schools offer at least a few hours of discussion (indicated in figure 2 as “portion”), most in the context of a reference course. Only three schools mentioned teaching bibliographic instruction as part of subject bibliography courses. Fifteen teach an entire course devoted exclusively to library use instruction, although many of those bewailed low enrollment or infrequent offering. In all cases, this course was elective. Five schools had internships or teaching assistantships available to a few students (indicated in figure 2 as “Other”). One school said that it placed less emphasis on library use instruction now than in the heyday of the early 1970s.

“Since bibliographic instruction has been established long enough to lose the aura of trendiness, it is distressing that many library school programs continue to give the field short shrift.”

Library School Curricula: Preparing Librarians to Teach?

The value of teaching bibliographic instruction skills and the point at which they should be taught has long been argued. But since even a cursory examination of advertisements for public service (especially academic) librarians shows the desirability of instructional experience, and since bibliographic instruction has been established long enough to lose the aura of trendiness, it is distressing that many library school programs continue to give the field short shrift. Several schools provided enough details of their curricula to indicate that user instruction is passed over in only a few hours of a larger course, usually beginning reference. Several remarked that since students did not realize the importance that bibliographic instruction would have in their careers, elective courses were plagued by lack of enrollment or had lapsed for that reason. No one seemed to connect unenthusiastic student reception with lack of encouragement by counselors or faculty, which I suspect may be an element. One school official commented that bibliographic instruction was more properly taught on the job. On the more positive side, another response suggested that since practicing librarians recognized the value of bibliographic instruction while students didn’t, the school was contemplating a series of short-term courses for the experienced librarian.

ATTITUDES

Science librarians responding to the main survey had positive attitudes about bibliographic instruction and its value to students. Nearly three-quarters checked either 1 or 2 on a five-point scale indicating their preference for bibliographic instruction when compared to their other duties; no one indicated a strong aversion. A slightly smaller percentage of the respondents with an educational background in a scientific field found instruction professionally satisfying: 29 of the 43 (67.4%) rated their satisfaction as 1 or 2 on a five-point scale. Likewise, a strong majority (n = 86) indicated that bibliographic instruc-
<table>
<thead>
<tr>
<th>Name of School</th>
<th>Entire/portion</th>
<th>Name of Course</th>
<th>Taught Since</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brigham Young University</td>
<td>portions</td>
<td>1) Reference Theory &amp; Services</td>
<td>1985</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) Advanced Reference</td>
<td>1986</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3) 1 assistantship</td>
<td>1985</td>
</tr>
<tr>
<td>Catholic University of America</td>
<td>portion</td>
<td>Information Sources &amp; Services</td>
<td>1984</td>
</tr>
<tr>
<td>Clarion</td>
<td>portions</td>
<td>&quot;many courses&quot;</td>
<td>--</td>
</tr>
<tr>
<td>Columbia University</td>
<td>portions</td>
<td>1) Online Bibliographic Databases</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) Special Libraries</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3) Science Literature</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4) Academic &amp; Research Libraries</td>
<td>--</td>
</tr>
<tr>
<td>Dalhousie University</td>
<td>entire</td>
<td>Bibliographic Instruction</td>
<td>1983</td>
</tr>
<tr>
<td>Drexel</td>
<td>entire</td>
<td>User Education Programs</td>
<td>1982</td>
</tr>
<tr>
<td>Emporia State University</td>
<td>portions</td>
<td>1) Educational Functions of Libraries &amp; Information Agencies</td>
<td>1983</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) Applications of Communication Theory</td>
<td>--</td>
</tr>
<tr>
<td>Florida State University</td>
<td>entire</td>
<td>1) Instructional Services of Information Professionals</td>
<td>1982</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) Advanced Reference</td>
<td>--</td>
</tr>
<tr>
<td>Indiana University</td>
<td>portion</td>
<td>Information Sources &amp; Services</td>
<td>Inception</td>
</tr>
<tr>
<td>Long Island University</td>
<td>portions</td>
<td>&quot;academic library courses&quot;</td>
<td>--</td>
</tr>
<tr>
<td>Louisiana State University</td>
<td>entire</td>
<td>Seminar in Bibliographic</td>
<td>1985</td>
</tr>
<tr>
<td>McGill University</td>
<td>portion</td>
<td>College and University Libraries</td>
<td>--</td>
</tr>
<tr>
<td>Northern Illinois University</td>
<td>portions</td>
<td>&quot;reference and resource courses&quot;</td>
<td>--</td>
</tr>
<tr>
<td>Pratt Institute</td>
<td>entire</td>
<td>1) Library Use Instruction</td>
<td>1982, 1987</td>
</tr>
<tr>
<td></td>
<td>portion</td>
<td>2) Fundamentals of Information Handling</td>
<td>1950's</td>
</tr>
<tr>
<td>Queens College</td>
<td>portions</td>
<td>1) &quot;basic reference&quot;</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) &quot;social science reference&quot;</td>
<td>--</td>
</tr>
<tr>
<td>Rosary College</td>
<td>portions</td>
<td>1) &quot;Introductory reference and bibliography&quot;</td>
<td>1970</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) &quot;academic libraries&quot;</td>
<td>--</td>
</tr>
<tr>
<td>Rutgers University</td>
<td>entire</td>
<td>1) Professional Development</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>portion</td>
<td>2) &quot;academic libraries&quot;</td>
<td>--</td>
</tr>
</tbody>
</table>

FIGURE 2
Responses to Bibliographic Instruction in Library Schools Questionnaire
<table>
<thead>
<tr>
<th>Institution</th>
<th>Portions</th>
<th>Content Description</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>St. John's University</td>
<td>portions</td>
<td>1) &quot;Introductory&quot; 2) &quot;Science bibliography&quot; 3) &quot;Social science bibliography&quot; 4) &quot;Humanities bibliography&quot; 5) &quot;Advanced reference&quot; 6) &quot;Internship&quot;</td>
<td>late 1970s</td>
</tr>
<tr>
<td>San Jose State University</td>
<td>entire</td>
<td>Library &amp; Information Research Instruction</td>
<td>rarely</td>
</tr>
<tr>
<td>Simmons College</td>
<td>portions</td>
<td>1) &quot;Basic reference&quot; 2) Bibliographic Instruction &amp; Methods</td>
<td>years</td>
</tr>
<tr>
<td>S. Connecticut State Univ.</td>
<td>entire</td>
<td>1) Library Instruction 2) Advanced Reference</td>
<td>--</td>
</tr>
<tr>
<td>State U. of New York, Buffalo</td>
<td>entire</td>
<td>Bibliographic Instruction</td>
<td>1987</td>
</tr>
<tr>
<td>Texas Women's University</td>
<td>portions</td>
<td>1) &quot;Academic Libraries&quot; 2) Information Sources &amp; Services 3) Educating for Librarianship 4) Health Science Libraries</td>
<td>1982</td>
</tr>
<tr>
<td>University of Alabama</td>
<td></td>
<td>Bibliographic Instruction assistantships</td>
<td>1976</td>
</tr>
<tr>
<td>University of Alberta</td>
<td>portions</td>
<td>1) Library Material &amp; Information Services 2) Advanced Information Services 3) Academic Libraries 4) Practicum</td>
<td>1978</td>
</tr>
<tr>
<td>University of British Columbia</td>
<td>portion</td>
<td>&quot;Advanced reference&quot;</td>
<td>1975</td>
</tr>
<tr>
<td>U. of California, Berkeley</td>
<td>portions</td>
<td>1) Introduction to Information 2) Advanced Reference 3) Health Sciences 4) Law 5) Internship</td>
<td>--</td>
</tr>
<tr>
<td>U. of California, Los Angeles</td>
<td>portions</td>
<td>1) Information Resources &amp; Services 2) Internship</td>
<td>1976</td>
</tr>
<tr>
<td></td>
<td>entire</td>
<td>3) Training &amp; Supervision of Teaching Assistants</td>
<td></td>
</tr>
<tr>
<td></td>
<td>other</td>
<td>4) Teaching assistantships</td>
<td></td>
</tr>
</tbody>
</table>

FIGURE 2

Continued
| University of Hawaii | portions | 1) Introduction to Reference | 1965 |
| University of Illinois | entire | 1) Library Use Instruction | 1983 |
| University of Iowa | portions | 1) Beginning Reference | 1985 |
| University of Kentucky | none | 2) Advanced Reference |  |
| University of Maryland | entire | 1) Instructional Role of Libraries | 1981 |
| University of Michigan | entire | 2) Library/Media Center User Instruction | 1980 |
| University of Missouri | portion | 3) Introduction to Reference |  |
| Université de Montréal | portion | Bibliographic Instruction | 1976 |
| University of North Carolina, Chapel Hill | portions | "general reference" | |
| University of Pittsburgh | portions | 1) Academic Libraries |  |
| University of South Carolina | portion | 2) Teaching & Academic Life |  |
| University of Southern Florida | entire | 1) Collection Development & Use | 1977 |
| University of S. Mississippi | portion | 2) Information Sources & Services |  |
| U. of Tennessee, Knoxville | portion | Educational Services in Libraries | 1979 |
| University of Texas, Austin | portions | Administration of Media Centers | 1977 |
| University of Toronto | portion | --- |  |
| University of Washington | entire | Learning Resources Programs | 1976 |
| University of Wisconsin, Madison | portion | Reference Services: Organization & Administration | 1983 |
| | | Librarianship 600 | 1982 |
| | | Information Sources & Services | 1983 |
| | | Basic Reference | 1976 |
| | | Advanced Reference |  |
| | | Academic Libraries |  |
| | | School Librarianship |  |

**FIGURE 2**
Continued
tion was valuable to students at a 1 or 2 level on a five-point scale. Two-thirds \(n = 66\) responded 1 or 2 to both five-point scales (work satisfaction attitudes; perceptions of the value of bibliographic instruction to students).

Not surprisingly, the large majority of respondents was engaged in fairly traditional bibliographic instruction, the "one-hour" stand, ninety-five giving one-time lectures requested by teaching faculty, and seventy-four engaged in one-time library-initiated lectures. A sizable minority \(n = 30\) of librarians taught quarter- or semester-length courses, while fifteen gave shorter courses. Regardless of the type of instruction with which they were involved, tables 3 and 4 show that librarians believed instruction to be valuable to students; and most enjoyed their instructional duties.

**CONCLUSIONS**

Answers to the questions that led to my survey of science librarians can be summarized:

1. Most respondents had not received systematic training from their institutions. Karen Stabler's study indicates that this is neither a new condition nor limited to California.\(^\text{11}\)

2. Instructional librarians pursue various means of improving their skills.

3. The question of librarians giving bibliographic instruction only in areas congruent with their own subject backgrounds was split: about half of the librarians surveyed gave library use instruction only in areas in which they themselves had some education; about half were not limited in this manner.

4. Enjoyment level was high. The majority of librarians giving bibliographic instruction in each discipline rated their enjoyment at the 1 or 2 level.

5. Library schools are slowly increasing their offerings in bibliographic instruction, but the situation is not ideal.

Respondents to this survey were an experienced and highly motivated group with very positive attitudes about the need for and the value of library use instruction. A majority of both very experienced and less experienced librarians took advantage of diverse training methods to hone their instructional skills. This interest in professional development is especially laudable in light of the cursory treatment still given bibliographic instruction by library schools. For the foreseeable future, it must be recognized that newly minted librarians are unlikely to have been taught bibliographic instruction techniques in school. Because a library cannot expect that new graduates will meet its instructional standards, each library must create its own program or find other means of developing new professionals.

**TABLE 3**

<table>
<thead>
<tr>
<th>Satisfaction Levels of Respondents by Type of Instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of Instruction</td>
</tr>
<tr>
<td>Library initiated</td>
</tr>
<tr>
<td>Professor requested</td>
</tr>
<tr>
<td>Full course</td>
</tr>
<tr>
<td>Brief</td>
</tr>
<tr>
<td>Other</td>
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<tr>
<td>Satisfaction Level</td>
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<td>22</td>
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<tr>
<td>30</td>
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<tr>
<td>11</td>
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<tr>
<td>4</td>
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</table>

**TABLE 4**

<table>
<thead>
<tr>
<th>Opinion Levels of Respondents About Value of Instruction to Students by Type of Instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of Instruction</td>
</tr>
<tr>
<td>Library initiated</td>
</tr>
<tr>
<td>Professor requested</td>
</tr>
<tr>
<td>Full course</td>
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<td>Brief</td>
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<tr>
<td>Other</td>
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<td>Opinion Level</td>
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<td>56</td>
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<tr>
<td>8</td>
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<td>14</td>
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REFERENCES AND NOTES


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BIOLGICAL ABSTRACTS IN MICROFORM

BIOSIS is a not-for-profit organization serving the biological community since 1926.
Teaching Search Techniques on the Computerized Catalog and on the Traditional Card Catalog: A Comparative Study

Opritsa D. Popa, Deborah A. Metzger, and James A. Singleton

Libraries establishing online catalogs often retain their card catalogs until complete retroactive online conversion can be achieved; consequently, bibliographic instruction (BI) librarians teach search strategies on both systems. This study measures students' grasp of library concepts taught on- and offline and preferences for one system over the other. Results show that students prefer the online catalog. When students are taught search strategies online first, followed by lectures on the card catalog, their test scores increase more than for those taught in the reverse order. Performance and preference are similar in American and international students. If incorporated in BI programs, these findings will improve teaching effectiveness.

As in numerous libraries across the nation, at the University of California–Davis Shields Library, the Melvyl online catalog coexists with the traditional card catalog. Both catalogs will be maintained for many years until a complete online conversion occurs. Most students find the online card catalog an attractive library feature. Online catalog user studies indicate that regardless of the degree of knowledge in using the computerized catalog, students overwhelmingly prefer this system to the manual card catalog. Of those who try the online catalog "almost all change over to use it more often than the card catalog." Furthermore, for reasons that are not yet apparent, "OPAC (Online Public Access Catalog) users visit the library more frequently than do OPAC nonusers."

In contrast, the library literature abounds with recriminations regarding the difficulties in using and teaching the traditional card catalog. It has been called "complicated," "esoteric," the "greatest obstacle of library research for all but the most experienced patrons," and has even been branded "3 x 5 and full of holes."

Because of the problems associated with using the card catalog, bibliographic instruction (BI) librarians have had difficulty motivating students to learn systematic search techniques. The reason is simple: the majority of students does not demand comprehensiveness or precision from the card catalog. Familiar with its setup and comfortable using it, students believe that they are fairly successful in their searching. This belief is reinforced when they find at least some useful references. Any attempt to expand this superficial knowledge by teaching tracings, subject headings, cross-references, and filing rules is met with a complete lack of interest.

At Shields Library the main card catalog is a union catalog for the University of California–Davis main library and its branches. It is divided into author/title and subject catalogs with access points by

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personal and corporate author, title, sub-
ject (LC authorized subject headings), and
series title. Main entries display full bibli-
ographic information with call number and
location. Periodicals are accessible not
only through the card catalog, but also by
using a periodicals list on microfiche or a
separate periodicals database, the Califor-
nia Academic Libraries List of Serials
(CALLS), loaded into the online catalog.

The UC Melvyl online catalog has been
available since 1981. It primarily contains
records for the holdings of the nine Uni-
versity of California campus libraries. As
of October 1987 the catalog featured ap-
proximately 6,500,000 records; of these
787,000 belong to the Davis campus.
CALLS was added online in 1984. The
Melvyl online catalog functions in parallel
with the main card catalog. It comple-
ments the latter by being more current:
records are entered online months before
cards are filed in the main card catalog.
Melvyl is available for patron use wher-
ever the library is open, or it can be ac-
cessed at any time by an outside personal
computer and modem. Several library ter-
minals have printers attached. Points of
access parallel those of the card catalog
and feature personal and corporate au-
thor, title, LC subject headings, and series
title. Additionally Melvyl permits access
by subtitle, title keywords, and series key-
words. Records can be displayed in a re-
view format (author, fraction of title, and
year of publication), an abbreviated for-
mat (bibliographic entry, call number, and
campus location), or a long format (com-
plete bibliographic record). As previously
mentioned, periodical titles in complete or
abbreviated form may be searched in the
separate periodicals file. The online cata-
log is "user-friendly," allowing a menu-
search approach as well as a more flexible,
rapid command mode for experienced
searchers.

Because the card catalog offers full retro-
spective coverage but lacks currency,
while the Melvyl catalog (as of this date)
ofers currency without complete retro-
spective coverage, at times it is necessary
to use both catalogs. This situation has
prompted us to test the following hypoth-
eses:

1. Similar search concepts can be taught
on the Melvyl online catalog and on the
traditional card catalog.

Since the online catalog features the
same access points as the card catalog—
author, corporate author, title, subject,
series, periodical titles—it can accommodate
search techniques traditionally taught on
the card catalog. Furthermore, the "long
display" lists the same elements as the
main entry on a catalog card, allowing BI
librarians to show and explain online such
fields as title/authorship statement, edi-
tion, imprint, collation, series, notes, trac-
ings, and call number. The first hypothe-
sis is critical to the study as all following
hypotheses are dependent upon the dem-
onation that search concepts can be
taught by using the online catalog.

If the first hypothesis is true, then the
potential advantage of teaching on the on-
line catalog versus the card catalog needs
to be demonstrated:

2. Teaching search concepts online is
more effective than teaching the same
concepts using the card catalog.

Once the online catalog has been estab-
lished as an effective bibliographic in-
struction tool, the sequence in which the
two systems are taught needs to be stud-
ied:

3. The sequence in which the two sys-

tems are taught plays a role in how well
the concepts are understood.

The student population of the Univer-
sity of California-Davis is made up of in-
ternational as well as American students.
The fourth hypothesis compares the
results of bibliographic instruction for
these two groups:

4. Conceptual understanding and pref-
erence of one system over the other are
similar in American and international stu-
dents.

We also considered some general ques-
tions about both catalogs and their use:

After being exposed to both online and
traditional card catalog searching, if the
students are free to choose, which method
will they prefer? Are usage, time spent on
a system, and correct answers related?
Which concepts are the most difficult to
understand?
METHODOLOGY AND DESIGN

Subjects

The subjects were selected from the UC-Davis student body according to the following criteria: they had to be incoming students with no formal library training or experience with an online catalog and be willing to participate. American students were contacted at the first meeting of an introductory library credit course while international students were recruited at the annual introductory library lecture offered during their fall orientation week. Both the American and international students were invited to register for one of two sessions teaching library skills. Although 30 American and 30 international students registered for the sessions, only 29 American and 22 international students actually attended.

As much as we wanted to recruit subjects representative of these two student populations, the constraints of using library "illiterate" students limited our choice to those willing to take the library training. Therefore both the American and international students were part of a select rather than random group.

Study Design

A cross-over design with a baseline (pretest) and a posttest was used for the study (see figure 1). The pretest sought to determine the initial level of the students' knowledge. After the pretest, the American and international students were separated into two subgroups. The students who registered for the first session were assigned to the subgroup that was taught search techniques in the card catalog and then online, while the students who registered for the second session were taught in the reverse order. Because some students who had registered failed to attend the sessions, the subgroups had uneven numbers of participants.

Each subgroup was taught search strategies using either the card catalog (Off subgroup with 13 American and 6 international students) or Melvyl (On subgroup with 16 American and 16 international students). This first level of teaching consisted of a lecture and practice exercise followed by a test. A second level of teaching followed with the groups "crossing over": the On subgroup that had been exposed to searching on Melvyl was taught searching in the card catalog while the Off subgroup, which first learned to use the card catalog, was instructed in the use of the online catalog. A second test concluded this stage of teaching. A posttest was then given to both On and Off groups allowing students to apply their newly acquired search knowledge by using the system of their choice. Finally, an opinion survey gave students an opportunity to express their views about searching in the card catalog versus searching in the online catalog.

Unlike a single group linear design, the cross-over design permits valid intergroup comparisons. It offers the possibility of comparing test results of On and Off subgroups on the same level of teaching; it permits the analysis of whether teaching online first, followed by offline, facilitates the understanding of concepts. This design also allows a comparison of On and Off subgroups in the preference for one system over another.

Methods of Teaching

The study was conducted in the first week of the fall quarter before students started using Shields Library. For both the online and card catalog lectures, identical teaching tools and lecture outlines were used. A slide presentation and a discussion covered the following topics:

- Definition of the catalog
- Coverage (types of publications and publication dates)
- Access points
- Record information (based on main entry in the card catalog and the long display on Melvyl)
- Interpreting and locating material by call number
- Filing rules (importance in the card catalog versus online)

The session concluded with practical searching exercises in the card catalog and on the Melvyl catalog. A test consisting of simple and multiple-choice questions followed. The tests included comparable
AT ONSET, IS KNOWLEDGE OF GROUP MEMBERS COMPARABLE?

CAN SAME CONCEPTS BE TAUGHT WITH BOTH METHODS?

HYPOTHESIS 9

IS TEACHING ONLINE MORE EFFECTIVE THAN TEACHING OFFLINE?

HYPOTHESIS 2

DOES SEQUENCE IN WHICH CONCEPTS ARE TAUGHT PLAY A ROLE IN UNDERSTANDING AND RETENTION?

HYPOTHESIS 3

WHICH CONCEPTS ARE THE MOST DIFFICULT?

WILL STUDENTS ANSWER POST-TEST QUESTIONS USING THEIR FAVORITE CATALOG?

ARE USAGE, TIME SPENT, AND CORRECT ANSWERS RELATED?

ARE CONCEPTUAL UNDERSTANDING AND PREFERENCES SIMILAR FOR AMERICAN AND INTERNATIONAL STUDENTS?

HYPOTHESIS 4

At every stage of the analysis, the distribution of the data was assessed to determine the appropriate statistical method. If the distribution seemed normal, the t-test or ANOVA was applied. If the distribution was skewed or irregular, nonparametric methods that relax the assumptions to either symmetric distributions (i.e., Mann-Whitney, Wilcoxin) or no restrictions (sign-procedures) were selected. Proportions of students with correct responses were evaluated with 95% confidence intervals, based on the binomial distribution. Improvements in proportions were also evaluated with the binomial distribution. The pretest (baseline) scores were used: (1) to compare library skills at the beginning of the study; (2) to provide a reference level for change in knowledge; and (3) to decrease the bias due to differing amounts of knowledge.

QUESTIONS:

At onset, is knowledge of group members comparable?

Can same concepts be taught with both methods?

Hypothesis 9

Is teaching online more effective than teaching offline?

Hypothesis 2

Does sequence in which concepts are taught play a role in understanding and retention?

Hypothesis 3

Which concepts are the most difficult?

WILL STUDENTS ANSWER POST-TEST QUESTIONS USING THEIR FAVORITE CATALOG?

Are usage, time spent, and correct answers related?

Are conceptual understanding and preferences similar for American and international students?

Hypothesis 4

At every stage of the analysis, the distribution of the data was assessed to determine the appropriate statistical method. If the distribution seemed normal, the t-test or ANOVA was applied. If the distribution was skewed or irregular, nonparametric methods that relax the assumptions to either symmetric distributions (i.e., Mann-Whitney, Wilcoxin) or no restrictions (sign-procedures) were selected. Proportions of students with correct responses were evaluated with 95% confidence intervals, based on the binomial distribution. Improvements in proportions were also evaluated with the binomial distribution. The pretest (baseline) scores were used: (1) to compare library skills at the beginning of the study; (2) to provide a reference level for change in knowledge; and (3) to decrease the bias due to differing amounts of knowledge.

STATISTICAL ANALYSIS

Descriptive statistical methods included the calculation of mean, standard deviation, and when required by comparison of groups, a 95% confidence interval. At each step, overall test scores for each student (expressed as a percentage of items answered correctly) as well as key concept scores (percentage of students in a group answering correctly) on author, corporate author, title, series title, subject, LC subject headings, and periodicals were recorded.
RESULTS
Pretest Analysis: Determining the amount of library knowledge at the baseline.

The initial level of library skills assessed by pretest scores (see figure 2) was similar in American and international students in both the On and Off subgroups. Confidence intervals (73% to 79%) for median pretest score based on the sign test all overlapped.

Hypothesis 1: Similar search concepts can be taught using both the online catalog and the card catalog.

This hypothesis was analyzed by comparing the results of the pretest and the level-one test. For concepts, the improvement from the pretest was expressed as \( (p_2 - p_1) = (b - c)/n \) where \( n = a + b + c + d \); \( p_1 \) and \( p_2 \) are the proportion of students answering correctly on the pretest and first-level test, respectively; \( a \) is the number of subjects in the group answering correctly on both the pretest and first-

![Figure 2](image-url)

The Initial Level of Library Skills Assessed by Pretest Scores
level test; $b$ is the number of subjects in the group improving from the pretest; $c$ is the number of subjects in the group who answered correctly on the pretest but not on the first-level test; and $d$ is the number of students who were incorrect in both tests. In the sign test that was used a significant improvement is indicated by improvements from wrong on the pretest to correct on the first-level test occurring in more than 50% of the subjects that changed responses for pretest to first-level test.¹¹

We found that compared to the pretest, at the first-level test both the American and international students had significantly higher scores (see table 1), and with an exception for author and title, a better grasp of concepts (see table 2). The two concepts on which no significant improvement was observed were the easier ones—author and title. The small number of subjects in the international Off subgroup makes the assessment of their changes very difficult. However, when American and international students were combined across study groups, all concepts except author showed an improvement ($p < .05$); there was a small but nonsignificant betterment on author (10%; $b = 8$, $c = 3$, $p = .11$). For other concepts the improvement ranged from 43 percentage points (subject: $b = 23$, $c = 1$, $p < .05$) to 72 percentage points (LC subject headings: $b = 37$, $c = 0$, $p < .05$). The overall first test scores of the On subgroup in both American and international students were uncorrelated with the overall pretest scores (Pearson product-moment correlation $r = .14$ to .35, $p > .05$). However, in the international Off subgroup, the higher the initial score, the higher the level-one test score ($r = .80$, .05 < $p < .10$).

**Hypothesis 2:** Teaching search strategies using the online catalog is more effective than teaching search strategies on the card catalog.

This hypothesis was evaluated by comparing the improvement between the pretest and the level-one test in the American and international On and Off subgroups. As shown in tables 1 and 2 there was a large spread of values around fairly similar means yielding wide, overlapping confidence intervals. Thus evidence is insufficient to conclude that teaching online is more effective than teaching offline.

**Hypothesis 3:** The sequence in which the systems are taught plays a role in the understanding of concepts.

This third hypothesis was addressed by cross-over analysis of the first- and second-level tests and by analysis of the posttest results. The cross-over analysis was based on a modified ANOVA model. Briefly, it consisted of summing the level-one and level-two test scores for each participant and expressing the sequence effect as the difference in mean sums between On and Off groups (see Appendix A). Table 3 indicates that the level of performance (means of correct answers) was very similar for either method of search in both American and international students. The slightly higher mean observed in the On groups compared to that of the Off groups was not statistically significant since 95% confidence intervals for differences in mean sums covered 0. Thus there is a tendency favoring online teach-

<table>
<thead>
<tr>
<th>TABLE 1</th>
<th>OVERALL PERCENT CORRECT ANSWERS IN THE TESTS ADMINISTERED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test/Group</td>
<td>On American Group</td>
</tr>
<tr>
<td>Number of subjects</td>
<td>16</td>
</tr>
<tr>
<td>Pretest</td>
<td>44.5 ± 15.1</td>
</tr>
<tr>
<td>Level 1</td>
<td>75.5 ± 9.8</td>
</tr>
<tr>
<td>Level 2</td>
<td>83.3 ± 4.6</td>
</tr>
<tr>
<td>Posttest</td>
<td>85.1 ± 16.5</td>
</tr>
</tbody>
</table>

Legend: On = group taught online searching first. Off = group taught manual card catalog first. The numbers corresponding to the different tests administered represent mean and standard deviation of percent correct answers.

Explanation: When level 1, level 2, or posttest are compared to pretest, $p$ is less than .05 paired t-test for either group, regardless of teaching method (On or Off). When level 1, level 2, or posttest are compared among themselves, $p$ is larger than .05 paired t-test for either group taught (On or Off). When American and international groups are compared, $p$ is larger than .05 (two-sample t-test).
ing, though it is too small to be supported by statistical analysis.

The sequence effect on concepts taught is presented in table 4. For each concept we calculated the percentage of the total number of students who gave correct answers on both the first- and second-level tests (left column, table 4). The advantage of teaching On first versus Off first (right column, table 4) was assessed for each concept by calculating the difference in the correct answers between On and Off groups: the larger the difference, the more convincing the advantage of the On group. However, since the number of students responding correctly on both tests was rather small, ranging from 6 for CA (corporate author) in the Off group to 30 for AU (author) in the On group (data not shown), no statistical analysis was performed. Thus table 4 indicates a variable advantage in teaching the concepts online first. The difficult concepts (i.e., those with the lowest percentage of correct answers) seem to have benefited the most from exposure first to online teaching (concepts CA, LC). The easy concepts (SE, TI, AU) show the least benefit.

Hypothesis 4: Conceptual understanding and preference were similar in American and international students.

In general, there appears to be no real differences between international On and American On subgroups (table 1, \( p < .05 \); figure 3). The international On subgroup was the predominant user of the card catalog for posttest questions; however, compared to the other subgroup, this neither hampered nor improved their performance. Additionally, the American and international On subgroups performed at comparable levels in the pretest and in the opinion survey and displayed a similar sequence effect.

The international Off subgroup was two to three times smaller than all other

### TABLE 2

**IMPROVEMENT FROM PRETEST TO FIRST TEST BY CONCEPT**

<table>
<thead>
<tr>
<th>Subject</th>
<th>American</th>
<th>International</th>
<th>All Subjects</th>
<th>All Am.</th>
<th>All Intl.</th>
<th>Overall</th>
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<tbody>
<tr>
<td></td>
<td>On Off</td>
<td>On Off</td>
<td>On Off</td>
<td>On Off</td>
<td>On Off</td>
<td>On Off</td>
</tr>
<tr>
<td>Author</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improvement (%)</td>
<td>0% 15%</td>
<td>25% -17%</td>
<td>13% 5%</td>
<td>7% 14%</td>
<td>10% 8%</td>
<td></td>
</tr>
<tr>
<td>no. improving (b)</td>
<td>1 2</td>
<td>4 1</td>
<td>1 5</td>
<td>3 3</td>
<td>5 8</td>
<td></td>
</tr>
<tr>
<td>no. declining (c)</td>
<td>1 0</td>
<td>0 2</td>
<td>1 2</td>
<td>1 2</td>
<td>3 3</td>
<td></td>
</tr>
<tr>
<td>no. not changing (a + d)</td>
<td>14 11</td>
<td>12 3</td>
<td>26 14</td>
<td>15 25</td>
<td>40 10</td>
<td></td>
</tr>
<tr>
<td>LC Subject Headings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improvement (%)</td>
<td>88% 77%</td>
<td>62% 50%</td>
<td>75% 68%</td>
<td>83% 59%</td>
<td>72% 72%</td>
<td></td>
</tr>
<tr>
<td>no. improving (b)</td>
<td>14 10</td>
<td>10 3</td>
<td>24 13</td>
<td>24 13</td>
<td>37 37</td>
<td></td>
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<tr>
<td>no. declining (c)</td>
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<td>0 0</td>
<td>0 0</td>
<td>0 0</td>
<td>0 0</td>
<td></td>
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<tr>
<td>no. not changing (a + d)</td>
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<td>6 3</td>
<td>8 6</td>
<td>5 9</td>
<td>14 14</td>
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<td>Title</td>
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<td></td>
<td></td>
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<tr>
<td>Improvement (%)</td>
<td>32% 23%</td>
<td>0 0</td>
<td>15 16</td>
<td>27 0</td>
<td>15 15</td>
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<td>no. improving (b)</td>
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<td>2 1</td>
<td>8 4</td>
<td>9 3</td>
<td>12 12</td>
<td></td>
</tr>
<tr>
<td>no. declining (c)</td>
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<td>2 1</td>
<td>3 1</td>
<td>1 1</td>
<td>3 3</td>
<td></td>
</tr>
<tr>
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<td>9 10</td>
<td>12 4</td>
<td>21 14</td>
<td>19 16</td>
<td>35 35</td>
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<td>Periodical</td>
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<tr>
<td>Improvement (%)</td>
<td>81% 54%</td>
<td>81% 0</td>
<td>81 37</td>
<td>69 59</td>
<td>64 64</td>
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<tr>
<td>no. improving (b)</td>
<td>13 7</td>
<td>13 1</td>
<td>26 8</td>
<td>20 14</td>
<td>34 34</td>
<td></td>
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<tr>
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<td>1 1</td>
<td>1 1</td>
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<td>no. not changing (a + d)</td>
<td>3 6</td>
<td>3 4</td>
<td>6 10</td>
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</tr>
<tr>
<td>Improvement (%)</td>
<td>43% 54%</td>
<td>50 0</td>
<td>46 37</td>
<td>49 37</td>
<td>43 43</td>
<td></td>
</tr>
<tr>
<td>no. improving (b)</td>
<td>8 7</td>
<td>8 0</td>
<td>16 7</td>
<td>15 8</td>
<td>23 23</td>
<td></td>
</tr>
<tr>
<td>no. declining (c)</td>
<td>1 0</td>
<td>0 0</td>
<td>1 0</td>
<td>1 0</td>
<td>1 1</td>
<td></td>
</tr>
<tr>
<td>no. not changing (a + d)</td>
<td>7 6</td>
<td>8 6</td>
<td>15 12</td>
<td>13 14</td>
<td>27 27</td>
<td></td>
</tr>
</tbody>
</table>

Legend: On = Group taught online searching first. Off = Group taught manual card catalog first. No. = Number of students. Improvement (%) = \((p_2 - p_1)\) where \(p_1\) and \(p_2\) are the proportion of students answering correctly on the pretest and first-level test, respectively.

Explanation: Improvements are statistically significant for LC subject headings, periodical, and subject concepts in all groups except international Off \((p < .05)\). Statistical significance was evaluated by comparing proportions \(\frac{b - c}{b + c}\) to .5 using the binomial distribution (sign test).
TABLE 3
SEQUENCE EFFECT OF TEACHING

<table>
<thead>
<tr>
<th>Concept</th>
<th>American On 16 Students</th>
<th>American Off 13 Students</th>
<th>International On 16 Students</th>
<th>International Off 6 Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1: mean</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>of correct answer</td>
<td>75.5</td>
<td>79.3</td>
<td>74.7</td>
<td>65.7</td>
</tr>
<tr>
<td>Level 2: mean</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>of correct answer</td>
<td>83.3</td>
<td>73.0</td>
<td>81.8</td>
<td>76.8</td>
</tr>
<tr>
<td>Mean of sum</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>± standard deviation</td>
<td>158.8 ± 11.3</td>
<td>152.3 ± 16.1</td>
<td>156.5 ± 21.4</td>
<td>142.5 ± 28.6</td>
</tr>
<tr>
<td>Difference (On - Off)</td>
<td>6.5</td>
<td>14.0</td>
<td>14.0</td>
<td>14.0</td>
</tr>
<tr>
<td>(95% confidence interval based on t-test)</td>
<td>(-4.5, 17.6)</td>
<td>(-16.4, 44.4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combined differences</td>
<td></td>
<td>8.5 (-2.9, 19.9)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Explanation: Although the means obtained by students taught online first are higher than the means of students taught on the card catalog first, the differences are not statistically significant.

TABLE 4
SEQUENCE EFFECT ON CONCEPTS TAUGHT: COMPARISON OF STUDENTS' CORRECT ANSWERS AT THE FIRST AND SECOND TEST*

<table>
<thead>
<tr>
<th>Concept</th>
<th>% of Students with Correct Answers on Both Tests Overall</th>
<th>Difference Between On and Off Groups (% On-% Off Students American and International Combined)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA - Corporate author</td>
<td>51</td>
<td>30</td>
</tr>
<tr>
<td>PE - Periodical</td>
<td>72</td>
<td>23</td>
</tr>
<tr>
<td>LC - LC Subject headings</td>
<td>72</td>
<td>23</td>
</tr>
<tr>
<td>SE - Series</td>
<td>74</td>
<td>1</td>
</tr>
<tr>
<td>SU - Subject</td>
<td>76</td>
<td>13</td>
</tr>
<tr>
<td>TI - Title</td>
<td>82</td>
<td>5</td>
</tr>
<tr>
<td>AU - Author</td>
<td>92</td>
<td>5</td>
</tr>
</tbody>
</table>

Legend: On = Group taught online first. Off = Group taught card catalog first.

*Percentages of total number of students in the group answering correctly on both tests.

groups and therefore displayed the largest variability. With such a small sample size, one or two people may have a large impact on the group's summary statistics.

GENERAL OBSERVATIONS CONCERNING THE CATALOGS AND THEIR USE

Students' Favored Method
Out of 51 subjects, only 3 (all in the international On subgroup) preferred the card catalog; these 3 also answered most of the posttest questions by using the card catalog. Thus for all groups usage was related to preference with all but 3 students preferring and using the Melvyl catalog.

Time versus Correct Answer
Regardless of concept and group (American or international), most questions were reported as answered within 5 minutes (93% of posttest questions). Out of the 51 subjects, those taking 6 or more minutes to answer a question ranged from one (author and corporate author concepts) to 12 (subject concept). For 5 of the 7 concepts the percent of correct answers was higher for those taking 0-5 minutes to answer than for those taking 6 minutes or longer, i.e., LC subject headings (87% versus 50%, p > .05), title (86% versus 50%, p > .05), subject (62% versus 42%, p > .05), corporate author (86% versus 0%, p > .05), and series (87% versus 75%, p > .05). This suggests that the longer it took to answer a question, the less likely the answer was correct, although the observed differences may have arisen by chance.

Difficulty of Concepts
Within and between groups (On and
Off) the concepts were ranked according to the percent of overall correct answers in decreasing order. The most difficult pretest concepts were LC subject headings, periodicals, and subjects (figure 3). On the combined first- and second-level of teaching, corporate author ranked number one (table 4). Table 4 also suggests that in the first- and second-level tests the On group performed better than the Off group for the 3 most difficult concepts. For international students, subjects remained the most difficult concept on the posttest, followed in descending order of difficulty by series, corporate author, LC subject headings, title, and periodical. For American students, on the posttest subject was the most difficult concept as well, followed by LC subject headings, title, corporate author, periodical, and series (figure 3).

### Opinion Survey Analysis

Since the results of the opinion survey did not show any evidence of sequence or nationality effects, results on survey questions were pooled. All but 3 of 48 responding students felt that Melvyl was easier to use.

"82% of all students considered Melvyl a 'lot of fun' or 'some fun' to use."

---

### FIGURE 3

<table>
<thead>
<tr>
<th>Key Concept Scores of Different Tests: Percentage of Group Answering Correctly by Concept</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off</td>
</tr>
<tr>
<td>Pretest</td>
</tr>
<tr>
<td>On: 94</td>
</tr>
<tr>
<td>OFF: 65</td>
</tr>
<tr>
<td>First Test</td>
</tr>
<tr>
<td>100: 94</td>
</tr>
<tr>
<td>100: 67</td>
</tr>
<tr>
<td>Second Test</td>
</tr>
<tr>
<td>100: 94</td>
</tr>
<tr>
<td>100: 96</td>
</tr>
<tr>
<td>Post-Test</td>
</tr>
<tr>
<td>100: 94</td>
</tr>
<tr>
<td>100: 97</td>
</tr>
<tr>
<td>Library of Congress</td>
</tr>
<tr>
<td>Pretest</td>
</tr>
<tr>
<td>0: 15</td>
</tr>
<tr>
<td>13: 33</td>
</tr>
<tr>
<td>16: 6</td>
</tr>
<tr>
<td>Subject</td>
</tr>
<tr>
<td>Pretest</td>
</tr>
<tr>
<td>56: 77</td>
</tr>
<tr>
<td>81: 83</td>
</tr>
<tr>
<td>100: 84</td>
</tr>
<tr>
<td>Subject</td>
</tr>
<tr>
<td>Pretest</td>
</tr>
<tr>
<td>36: 31</td>
</tr>
<tr>
<td>38: 67</td>
</tr>
<tr>
<td>100: 84</td>
</tr>
<tr>
<td>Corporate Author</td>
</tr>
<tr>
<td>Pretest</td>
</tr>
<tr>
<td>50: 77</td>
</tr>
<tr>
<td>94: 90</td>
</tr>
<tr>
<td>Series</td>
</tr>
<tr>
<td>Pretest</td>
</tr>
<tr>
<td>81: 100</td>
</tr>
<tr>
<td>81: 67</td>
</tr>
<tr>
<td>100: 84</td>
</tr>
<tr>
<td>American students</td>
</tr>
<tr>
<td>no. 16</td>
</tr>
<tr>
<td>13: 16</td>
</tr>
<tr>
<td>16: 6</td>
</tr>
<tr>
<td>All Subjects</td>
</tr>
<tr>
<td>Pretest</td>
</tr>
<tr>
<td>32: 19</td>
</tr>
<tr>
<td>19: 29</td>
</tr>
<tr>
<td>22: 51</td>
</tr>
<tr>
<td>All Overall</td>
</tr>
<tr>
<td>Pretest</td>
</tr>
<tr>
<td>29: 22</td>
</tr>
<tr>
<td>22: 51</td>
</tr>
</tbody>
</table>

---

Am. = American students  
Int'l = International students  
On = group taught online searching first  
OFF = group taught manual card catalog first  
no. = number of students

---

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students felt that they were "somewhat" in control when using Melvyl, and 55% had the same response for the card catalog. This pattern was the same for all groups except for students in the American On subgroup. Fifty percent of these students felt in "total control" on Melvyl. Overall 18% felt unsure when using Melvyl, while 15% felt unsure when using the card catalog.

Finally, we probed the degree of satisfaction with each system. Overall, 59% of the responding students were satisfied with Melvyl compared with only 21% satisfied with the card catalog (62% were partially satisfied with the results found using the card catalog). The majority of the American On subgroup (73%), American Off subgroup (62%), and international On subgroup (53%), were very satisfied with Melvyl. When using the card catalog, the majority was only "somewhat satisfied" with its use (64% of the American On subgroup, 75% of the American Off subgroup, 47% of the international On subgroup, and 67% of the international Off subgroup).

"An important finding of this study is that similar search concepts can be taught equally well on the online catalog and on the traditional card catalog."

DISCUSSION

An important finding of this study is that similar search concepts can be taught equally well on the online catalog and on the traditional card catalog (see hypothesis 1, tables 1 and 2). Since published user studies stress repeatedly the fascination of students with the computerized card catalog, bibliographic instruction librarians can capitalize on this interest and teach search strategies online first, followed by a review of the same concepts in the card catalog.

Due to small sample sizes, the study falls short of concluding that teaching library skills on the online catalog is more effective than teaching on the traditional card catalog (see hypothesis 2, table 1, and figure 3). By looking at the differences between On and Off scores, it appears that there is no advantage to On versus Off teaching. One explanation could be that the Melvyl test was more difficult because the students struggled with two new elements—learning the search techniques and the search concepts. Conceivably this additional degree of difficulty could lower the scores. However, if online teaching is indeed more effective than offline teaching, it would result in higher scores. Consequently, these two factors would cancel each other, resulting in no observable On versus Off differences. Such a possibility although not tested formally is supported by the overwhelming satisfaction with Melvyl training.

The third hypothesis addressed the importance of teaching the systems in a sequence that leads to optimum results in understanding of search concepts. Observation convinced us that students showed increased interest and more active participation during the lecture dealing with online searching, despite the fact that both card catalog and Melvyl lectures used slide presentations to avoid a teaching advantage created by the natural curiosity of students about an interactive system. Teaching concepts on the online catalog followed by teaching concepts on the card catalog leads to better understanding of search concepts than instruction in the reverse order. For American students there was a 6.5% advantage of being taught online first. For international students, this advantage was even higher, 14.0%. The combined advantage was 8.5% (table 3). The scores for concepts also suggest a sequence effect although this was a trend rather than a statistically significant conclusion. This sequence effect appears to be more evident in the most difficult concepts (table 4).

Regardless of nationality the most difficult concepts to grasp were subject and LC subject headings (figure 3). Librarians have long known that author and title searching are immediately understood while LC subject headings are harder to
Our data reinforces these findings through statistical observation.

The overwhelming use of the online catalog during the posttest represents an implicit vote for this method of searching. The online catalog was viewed as easier to use and "more fun" than the card catalog. Surprisingly, after a relatively short initiation to online searching, students felt "somewhat" in control on Melvyl (51%). They had a similar (55%) response for control of the card catalog, a method presumably used throughout their high school years. Finally, most students were "satisfied" with the results regardless of method. Melvyl received more "very satisfied" comments than the card catalog.

Due to the rigorous admission criteria at the UC-Davis, international students have relatively few language difficulties. Their library knowledge is comparable to that of their American counterparts. During the study, conceptual understanding, sequence effect, and preference for the online system were similar in the American and international subgroups (hypothesis 4). The only difference was the use and preference for the card catalog by the international On subgroup. This might be due to cultural differences, previous familiarity with the card catalog, weariness of computers, or simply a "copy cat" effect while being tested.

The small group size and the lack of random selection in the study groups were the major limitations of the study. Small groups created problems of low power and large variability that did not permit conclusive data in hypotheses 2 and 3. It would take approximately thirty-six students per group (two to three times this study's group size) to have an 80% chance of detecting (reaching statistical significance) a true difference of ten percentage points from zero for a sequence effect.

Unfortunately for these two hypotheses we could not secure the necessary number of volunteers required by this poststudy analysis to reach a level of statistical significance. Our conclusions are based on the use of a select rather than random group of students. Thus, more research is needed to determine whether these conclusions can be applied to students with library skills and precollege background that is different from that of our study group.

Despite these limitations, several conclusions are suggested by the data:

1. The online catalog is an excellent bibliographic instruction tool that can accommodate search concepts originally taught only for the card catalog.
2. Explaining search strategies with the use of the online catalog, followed by a review of concepts in the card catalog, is the suggested sequence for teaching search concepts.
3. Bibliographic instruction librarians ought to devote special time and attention to the concepts of subject and LC subject headings as methods of accessing the catalog regardless of the type of catalog being taught.
4. The online system is well liked and thus students will use it more often and more effectively than the traditional card catalog.

REFERENCES

9. C. J. Clopper and E. S. Pearson, "The Use of Confidence or Fiducial Limits Illustrated in the Case of the Binomial," *Biometrika* 26:404-13 (1934).
11. Ibid.

---

**APPENDIX A: CROSS-OVER ANALYSIS**

Considering the unequal group sizes, unequal variances, and skewed distributions (table 1), we did not use a cross-over analysis of variance. We expressed the observed score as the sum of the four effects studied including random variation: score (stg) = \( u + M + L + S + e (stg) \), where:

- \( u \) = Overall mean effect common to all scores
- \( M \) = Melvyl effect, i.e., the advantage of Melvyl teaching and test; this is a composite of actual teaching mode effects and test difficulty differences. They are not separable with the design used. This effect is zero for card catalog test scores.
- \( L \) = Learning improvement effect due to second level of teaching; it is zero for a first-level test.
- \( S \) = Sequence effect, the advantage of having the online first instead of the offline teaching. This can be interpreted as an interaction between teaching mode and level or as carryover or residual effects from the level. It is zero in the first level tests and in the offline tests.
- \( e(stg) \) = Random deviation of the score from the sum of the above effects due to chance and individual variability. It is assumed that these average to zero within each teaching mode \((t)\) and group \((g)\) combination. They are unique for each student(s), and assumed independent of other student(s) scores.

Since the \( e(stg) \) average to zero for each \((t,g)\), we can express the true mean score as: \( u + M(\text{if }M \text{ test}) + L(\text{if second test}) + S(\text{if On group second test}) \). The true mean score for each \((t,g)\) combination is shown below. Thus the difference of sums across teaching level \((\text{Sum})\) represents the sequence effect. If the difference in mean sums deviates significantly from zero, we may conclude that a sequence effect exists. Note that this is independent of teaching mode, test difficulty, and level of teaching effects.

<table>
<thead>
<tr>
<th>Level</th>
<th>On</th>
<th>Off</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>( u + M )</td>
<td>( u )</td>
</tr>
<tr>
<td>2</td>
<td>( u + L + S )</td>
<td>( u + M + L )</td>
</tr>
<tr>
<td>Sum</td>
<td>( 2u + M + L + S )</td>
<td>( 2u + M + L )</td>
</tr>
</tbody>
</table>

\[ \text{Sum (On)} - \text{Sum (Off)} = S \]

Where: On = group taught on Melvyl first. Off = group taught on the card catalog first.
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It is with dismay that I read your editorial, "The Best Librarians: Who Are They?" (College & Research Libraries, V.48, November 1987). Although I agree with your apparent intention to identify excellent academic librarians, your stated control group, "direct patron contact and services," perpetuates classist attitudes about types of positions often present in academic libraries. As a longtime member of ACRL, I believe that excluding any academic librarian from being recognized for excellent service to the campus community does not serve the division well. Why not let the nominator argue the case for the nominee rather than being so initially restrictive? Excellent service to our academic communities exists in many forms in our libraries and assuming that one type of service is best does not conform at least to my interpretation of the "due process and equality of opportunity" section of the 1981 ALA "Statement on Professional Ethics."

Secondly, what are we saying about service to our patrons when we speak and write about excelling "in the trenches"? Is our "Best Librarian" to be a warrior? In the interest of ACRL, I urge you to reconsider your restrictions about academic library "superstars."

CHARLOTTA C. HENSLEY
University of Colorado

To the Editor:

What a superb thing to do! Kudos! [November editorial: "The Best Librarians: Who Are They?"]

REBECCA KELLOGG
University of Arizona

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Recent Publications

FEATURED BOOK REVIEW ESSAY

The Call to Reform Liberal Education: Great Books of 1987

Susan Klingberg


A remarkable number of titles was published in 1987 analyzing college teaching and learning and the educational achievement of college students. Four of the most significant titles are discussed here. Since academic preparation for college is a closely related topic, What Do Our 17-Year-Olds Know? is also reviewed. This clustering of titles on undergraduate education signals a strong trend toward assessing student literacy levels and improving college-level instruction. This reform movement is not taking place solely within academe. These serious works, published in trade presses, are reaching a very wide popular audience. Both Closing of the American Mind and Cultural Literacy have enjoyed a number of weeks on the New York Times best-seller list.

Susan Klingberg is Education and Social Science Librarian at the University of Illinois, Urbana, Illinois 61801.
Many striking similarities exist among these five titles. First, with the exception of Wolf’s book, a collection of essays spanning twenty years, the views expressed are conservative. The current educational reform movement is a conservative, back-to-basics movement, and these books are representative of it. The politics of education swing back and forth, like a pendulum, left to right. The reform movement of the eighties is a right-of-center response to the university reforms of the sixties, which grew out of leftist student activism.

This essay aims to explore the following important themes these works have in common:

1. Literate Americans share a core body of knowledge.
2. What an educated person should know is definable.
3. Teaching should emphasize mastery of content over skills development.
4. Knowledge has an important cultural component (cultural literacy).
5. A return to a structured curriculum is needed.
6. Good assessment programs are essential to the quality of teaching and learning.
7. College success or failure is dependent on solid academic preparation (preschool to high school).

THE CLOSING OF THE AMERICAN MIND

The Closing of the American Mind is a strong, personal indictment of the current moral, social, and intellectual orders prevailing in the U.S. According to author Allan Bloom, liberal education is in crisis, reflecting nationwide decay. Bloom’s description of the decline of liberal education draws heavily on his long career teaching classics at Cornell and the University of Chicago.

The author views the four years of liberal-arts education as a charmed opportunity for the privileged young Americans who enjoy them. The college years are a grace period following the intellectual and cultural wasteland of adolescence and preceding the likelihood of dreary professional training. During those years, students have the unique opportunity to expand experience, explore alternatives, and engage in self-discovery. They can begin to fulfill their human potential by exploring such central philosophical questions as, What is man? (p.21).

Bloom observes that entering freshmen are ill prepared to answer these questions because of weak educational backgrounds. Instead of concentrating on mastery of content, their previous education has emphasized methods and approaches such as openness and tolerance. Students are taught the wrongheaded notion of cultural relativism, which contends that all cultures and values are equal. Bloom, who has a marked preference for European culture, insists that they are not; in seeking what is true and good, students should be encouraged to examine alternatives, weigh differences, and make distinctions based on relative value. Bloom also finds students ignorant of their political heritage and lacking in the moral education that previous generations received through religion and the family, two institutions now in decline. Students do not bring to college strong beliefs that they can then challenge and question. He comments “One has to have the experience of really believing before one can have the thrill of liberation” (p.43).

Bloom prescribes a remedy addressing the ills of the liberal education curriculum. He believes that the university needs to develop a vision of what constitutes an educated person. He is in favor of the core curriculum concept because it represents the unity of knowledge and because it implies that “there are some things one must know about if one is to be educated” (p.320).

He advocates designing a curriculum that will appeal to and nourish the student who is undecided on a concentration or major, who might say “I am a whole human being. Help me to form myself in my wholeness and let me develop my real potential” (p.339). Currently universities unwittingly encourage lower-division students to specialize early because they have nothing to offer the undecided major.

Bloom points out that the curriculum reform movement of the eighties is part of a cycle, a reaction to the dismantling of cur-
curriculum requirements during the sixties campus unrest. The current university reform movement advocates a core curriculum. The author describes three possible approaches: a general education curriculum, in which students take introductory courses in general divisions of knowledge; interdisciplinary composite courses that are specially developed for general education purposes, such as "Man in Nature" and "War and Moral Responsibility"; and the "great books" approach. The third alternative, favored by Bloom, is the reading of classic texts, which themselves dictate key questions and the methods of analysis. He would center the curriculum on these texts and would also open up students' minds to the important European philosophers (Rousseau, Kant, Hegel, and Nietzsche).

In spite of his clear preference for this "great books/great thinkers" approach, Bloom provides an evenhanded analysis and acknowledges its weaknesses: the problems of determining and selecting the great books; the impossibility of reading and studying all of them carefully; the notion that the books are the ends rather than the means; and the reputation of the movement as amateurish, evangelistic, and lacking in good taste.

Based on his own teaching, Bloom describes the engagement and intellectual excitement experienced by students reading the great texts. From these works, they learn about the key philosophical questions as well as the process and methods for analyzing and responding to them.

Bloom is most astute and credible when he analyzes and attempts to resolve educational issues and problems. However he also devotes several lengthy chapters to analyzing the American student soul, including youth culture and politics. Unfortunately this analysis suffers from a profound generation gap. Bloom demonstrates a narrow, crabbed point of view and a lofty, professorial tone, providing little evidence of understanding or empathy with youth culture. He is dismayed by liberated sexual relationships and believes that rock music is addictive and dangerous. His exaggerated and priggish responses are sometimes humorous. For example he observes that rock music has "the beat of sexual intercourse" (p.73) and the strange power to ruin the imaginations of young people. The author has an unfortunate tendency to turn personal observations into social theories that are more anecdotal than scientific. For example, from his own teaching he concludes that students of divorced parents exhibit "a slight deformity of the spirit" and "are not as open to the serious study of philosophy and literature as some other students are" (p.120).

COLLEGE: THE UNDERGRADUATE EXPERIENCE IN AMERICA

While Bloom writes from personal experience and in his own voice, College is a study of undergraduate education funded by the Carnegie Foundation for the Advancement of Teaching, headed by Ernest L. Boyer. Boyer's prose is grander in tone than Bloom's, befitting the book's venerable sponsor. To conduct this study, observers were sent to twenty-nine colleges and universities to get firsthand accounts of campus life. In addition, a national survey of undergraduates and faculty members, representative of different institutions, was undertaken.

Like Bloom, the Carnegie report expresses concern about the conflict in the undergraduate curriculum between specialized majors and the need to provide "a coherent view of the human condition" (p.4). The study reviewed the distribution requirements of general education programs at several colleges, but the report rejects this approach as ineffective because of the enormous number of humanities, natural sciences, and social science courses available. Choosing several from each division with no established connections is more likely to be a smorgasboard than a well-coordinated, nourishing meal.

To achieve general education goals, the report recommends the integrated core approach, capable of imparting essential knowledge, linking knowledge to life beyond campus, and making connections across disciplines. The core approach relates the curriculum to the universal experiences and activities shared by all people. It consists of seven areas of inquiry that cut across disciplines:
This approach to curriculum development is based on several firmly held beliefs. The report asserts that it is possible to define a basic core of knowledge that all students should be taught and should master to become educated persons. This core knowledge, which is not explicitly outlined in the report, is called “common learning.” Common learning is not just an end in itself, but a way to discover and understand oneself and to develop a capacity for sound judgment. The implicit challenge to individual colleges is to define common learning, with its emphasis on breadth, and to integrate it successfully with the specialized knowledge acquired through academic majors.

Developing a strong sense of community in students is also recommended. The integrated core is designed not only to promote self-understanding but also to make students aware that they are part of the human community and that their existence has meaning because of others. Building community can be furthered through the academic program. Students should be encouraged to participate in collaborative activities such as group projects and in small sections within large lecture classes.

In this assessment of liberal arts programs, reforming the curriculum is a central theme. Seven other problem areas are also identified as undermining the success of the liberal arts program: the discontinuity between high schools and colleges, including poor academic preparation; the conflicting faculty priorities of research, teaching, and service; a lack of vigor and commitment in teaching and learning; governing of the college; evaluating educational outcomes; the quality of campus life; and the relationship between the campus and the world.

The site visits to campuses pinpointed another weakness in the undergraduate program: the gap between the classroom and the library. Observers noted that textbooks were the primary teaching resources. Students viewed the library primarily as a quiet place to study and to read materials on reserve. The study’s written survey of undergraduates revealed that one in four does not use the library at all during a normal week, and 65 percent spend four hours or less in the library. The report also notes that college libraries are not adequately supported. With reference to previous studies using ACRL standards, it notes that only half of four-year college libraries meet the minimum standards for collections, staff, budgets, and services.

In spite of these serious criticisms of undergraduate education, the report’s outlook is not gloomy. The prologue gives a very balanced summary of the strengths and weaknesses of the American college. It is presented as a vital but troubled institution, in need of renewal. To quote from the prologue, “It is not that the failure of the undergraduate college is so large but that institutional expectations often are too small” (p.2).

**CULTURAL LITERACY**

Unlike the first two books, which primarily critique the college experience, *Cultural Literacy* is not limited to one particular educational level. E. D. Hirsch is concerned with all levels of schooling and focuses on the process of teaching the specific knowledge that each of us needs to know. He believes in an identifiable body of knowledge (factual information and traditional lore) that Americans must master to read well, function in the modern world, and participate in a democracy. He coins the term *cultural literacy* to represent “the information, attitudes, and assumptions that literate Americans share” (p.127).

Hirsch argues that the well-documented achievement decline of American students is due to the faulty educational theories and values underlying the curriculum. The modern school curriculum is based on a theory of “educational formalism,” a developmental approach traced back to Jean Jacques Rousseau. Formalism views literacy as a set of techniques or skills mastered through practice. In teach-
ing, it has emphasized acquiring skills, while mastery of content has been seriously neglected. For example, in formalism reading is primarily a decoding process that pays little attention to reading for meaning.

Hirsch cites several reading research studies showing that, far from merely decoding, readers supply a good deal of background information not in the text but essential to their understanding. Based on his review of twenty years of reading research, he concludes: "The explicit meanings of a piece of writing are the tip of an iceberg of meaning; the larger part lies below the surface of the text and is composed of the reader's own relevant knowledge" (p.33-34). Hirsch demonstrates convincingly that reading and writing are dependent on background knowledge and are cumulative activities; the more students read, the more information they learn to apply to future reading.

Hirsch attributes the failures of modern schooling to its developmental curriculum that teaches reading, writing, and critical thinking as general skills. However, much evidence suggests that this approach is misguided. The author cites recent research showing that cognitive skills depend on models or schemata specific to a particular task. Hirsch concludes that the educational programs that now teach general skills are ineffective. Instead, the schools should teach a curriculum strong in traditional information and culture.

In Cultural Literacy, Hirsch convincingly demonstrates that modern curriculum designers have taken a wrong path, ignoring the important research of the last twenty years on language, memory, and cognitive skills. Although he argues strongly and persuasively, he concludes with a balanced and conciliatory statement. He advocates that all educators work together to promote literacy: "Facts and skills are inseparable. There is no insurmountable reason why those who advocate the teaching of higher order skills and those who advocate the teaching of common traditional content should not join forces" (p.133).

Following the book's text is a sixty-four-page appendix that is engaging, tantalizing, and frustrating and should not be skipped over. Entitled "What Literate Americans Know," it is a list of names, terms, dates, events, literary works, and sayings intended as a guide to our literate culture. Unless you know the significance of Diana (Artemis), comme il faut, Fresno (California), op art, Planck's constant, and vestal virgin, you will begin to wonder how well you were educated. The list is challenging, even though it was developed to correspond to a high school literacy level. Hirsch plans a follow-up publication to give the associations that the terms should evoke in the mind of a literate person.

Several of Hirsch's theses are similar to those of Bloom and Boyer. Bloom is also critical of developmental approaches that emphasize personal growth over mastery of content. Hirsch and Boyer share a deep concern over the incoherence and fragmentation of the curriculum. All three authors grapple with the important question of what an educated person should know.

WHAT DO OUR 17-YEAR-OLDS KNOW?

In their respective works, Allan Bloom and Ernest Boyer comment on the failure of high schools to educate and prepare students adequately for college. Their views are supported by the results of the First National Assessment of History and Literature (NAHL), administered to high school juniors in 1986. The test, consisting of multiple-choice questions, was designed to measure basic information in history and literature. The questions were not designed to be difficult; it was assumed that the students would be able to answer most of them. In describing their expectations in What Do Our 17-Year-Olds Know?, the developers of NAHL, Diane Ravitch and Chester Finn, state "there are some things almost all students should know by the time they are juniors in high school" (p.200-201). According to the scale adopted, 100 is a perfect score and below 60 is failing. In the history portion, the national average was 54.5, while in literature, the average was 51.8; thus, the average student failed both parts. The history score is especially disappointing since most of the questions were on American
history and 78.4 percent of the students tested were enrolled in U.S. history classes at the time. Most of the others had taken U.S. history in the ninth or tenth grade.

The authors planned a history and literature assessment because recent efforts to strengthen the curriculum had largely ignored these two subjects. As the educational reform movement swept the states, additional science and mathematics courses were most often mandated. The authors believed that courses of substance in history and literature are no longer an integral part of the high school curriculum, having been replaced by amorphous courses under the umbrellas of “social studies” and “language arts.”

Both authors are prominent educators, which undoubtedly helped them develop the resources needed for this important assessment. Diane Ravitch is adjunct professor of History and Education at Teachers College, Columbia University, and author of several important works on education. Chester E. Finn is professor of education and public policy at Vanderbilt University and currently serves as assistant secretary of the U.S. Department of Education. Funding for the project was secured from the National Endowment for the Humanities. An agreement was reached with the National Assessment of Educational Progress to develop and administer the test.

The philosophical basis of the assessment is cultural literacy. NAHL was designed to test the background knowledge eleventh graders should possess and to elicit information on the cultural content offered and learned in American classrooms. The authors quote E. D. Hirsch, Jr., and agree with his views on reading and background information as well as the importance of cultural content and traditional lore in the curriculum. The process of developing the questions revealed differences in assessing knowledge of history versus literature. The task force developing history questions agreed on a common body of historical knowledge that all students should know. However, since there is no standard or authoritative curriculum for high school English, the literature questions were difficult to develop; the literature task force could not assume that all students had read certain authors or works. Therefore the literature test assessed a number of different elements: the curriculum (what is taught); student knowledge (what is retained); and inherited and popular culture.

In the concluding chapter, the authors make more than twenty specific recommendations to improve the teaching and learning of history and literature. The recommendations are closely related to the preceding discussion of test results, so many seem obvious. For example, it is recommended that (1) a coherent literature curriculum be developed for all grades through high school, and that (2) more time be devoted to teaching literature in all grades. Although few of the recommendations are innovative, they are solid, well argued, consistent with the recommendations of other reform reports, and likely to be supported by educators prominent in the movement.

THE EDUCATION OF A TEACHER

Howard Wolf’s collection of essays spans his long career as a college English professor, spent primarily at the State University of New York at Buffalo. The essays reveal a man who has a unique sense of history and the ability to discern and analyze new social and political trends at their outset. Wolf gives lively and vivid accounts of his teaching experiences, skillfully relating them to current social, political, and cultural events. In his essays covering the cold war, the Vietnam War and student activism, the human potential movement, and the current climate of student careerism, he explores the connections between higher education and American culture.

He shares with Bloom and Hirsch an interest in the debate over content versus process in the classroom:

As I have tried to make sense of my own teaching experience, it has become clear to me that most teachers and students either uphold content and cognition at the expense of interpersonal and intrapsychic dynamics, or they promote the expressive implications of humanistic psychology at the expense of rationality (p. 64).

Although Wolf acknowledges a commit-
ment to what is taught (content), he speaks on behalf of process. The most interesting and provocative essays are those describing the use of encounter group techniques to teach literature. Writing in 1969, Wolf describes the rather radical evolution of a new course he developed called "Literature of Mental Crisis and Madness." The twenty-five students responded with hostility to the readings that included Freud, Jung, and Dostoevsky. They suggested abandoning the readings and analyzing the personal crises of class members instead. Wolf agreed to this and allowed the class to meet several times in a student's apartment instead of the assigned classroom. Wolf concluded that, although the group had successfully built feelings of trust and closeness, it was not possible to teach a traditional course and at the same time respond to the developmental needs of students. Traditional courses are closed systems with a beginning and an end. However, Wolf does believe that teachers have the power to alter the vision of a class from being fragmented and course-conscious to being open to experience and self-discovery.

Wolf's philosophy of teaching is essentially developmental; he encourages students to be expressive, imaginative, and to integrate thought and feeling. His approach to teaching has been influenced by the human potential movement and psychoanalytic theory. He has a strong interest in analyzing the interpersonal and affective dimension of the classroom, which he views as "a laboratory for human development" (p.74). Wolf's commitment to the developmental theory is contrary to the conclusions reached in Cultural Literacy; Hirsch criticizes it for not recognizing the importance of transmitting to students specific cultural information.

Wolf's teaching philosophy is grounded in the 1960s, when he believes significant gains were made on personal, social, and political fronts. During that decade, Wolf experimented and took risks, enriching his teaching by borrowing from other disciplines. He developed new courses on unusual topics (mental crisis and madness) and sometimes substituted student journals and essays for the assigned literature readings. In his evolution as a teacher, the sixties and early seventies appear to have been a creative and productive period.

In The Closing of the American Mind, Allan Bloom also devotes a chapter to the transformation of education in the sixties, viewing this period as a disaster for universities, largely because curriculum requirements were dropped and the whole idea of a core curriculum was abandoned. According to Bloom, the resulting elective curriculum was very weak on substantive content, and there was no longer any standard for what knowledge constitutes a university education.

Although Bloom's views are conservative and Wolf's are liberal, their works can be compared through their many common elements, including the university setting, the period covered (1950-80), and the interwoven themes of education, politics, and culture. On specific issues, they are often diametrically opposed. Wolf looks with wonder at the educational transformation in universities in the sixties. However, for Bloom this period was characterized by self-indulgent teaching and learning, when students were not held to rigorous studies in philosophy, history, and literature. In conclusion, both authors engage the reader by demonstrating their commitment to teaching and involvement with their students. Both authors also describe the university in its social and political context, as an institution that mirrors contemporary culture.
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