

Evaluation by Type of Library

ROSE MARY MAGRILL

THE PURPOSE OF THIS PAPER is to provide an overview of the ways in which collection evaluation may differ from one type of library to another. Although there is often a dissimilarity in the approach to evaluation in libraries of different types, the approach may also vary among libraries of the same type. Some of these variations are due to the diversity of possible motivations for undertaking collection evaluation and to the different benefits expected from such a process.

Whatever the type of library, collection evaluation is usually undertaken because of a specific need for information. The impetus for formal, systematic collection evaluation may arise from a variety of circumstances, some related to long-range planning and policy development and others of a practical, short-term nature. Collection evaluation may be a necessary prerequisite to the development or revision of a written collection development policy or of a materials budget allocation formula. Information generated by collection evaluation may be used to demonstrate how the library contributes to the corporation, institution, agency, or community of which it is a part; to document for the library's funding authority what has been accomplished with the money provided for collection development; and to justify future budget requests. In certain cases, the results of a collection evaluation project may furnish valuable evidence that the library administration is sensitive to the library's assigned purposes, to the special interests of its potential users, and to the limitations of its resources. On a more practical level, library

Rose Mary Magrill is Professor of Library and Information Sciences, North Texas State University, Denton, Texas.

directors often find that they need quantitative—and in some cases even qualitative—data about the collection in order to respond to surveys and requests for statistics, as well as to provide necessary information for directory entries.

Even though a specific, short-term need may force the inauguration of a collection evaluation project, benefits often extend beyond that initial need. Everyone who participates in such an evaluation project becomes more aware of the strengths and weaknesses of the collection; and this fact alone may lead to the development and revision of collection development policies, to better-documented budget requests, and to the collection of additional data useful for the future management of the library.

Collection Evaluation Questions

Dissimilar motives for collection evaluation produce different questions or sets of questions to be answered in the course of the project, although some questions are more likely to be asked in certain types of libraries than in others. Questions about a collection can be strictly quantitative and the answers to them may provide a profile, expressed in numbers, of the collection, of acquisitions over the past year, or of acquisitions over a longer period of time. Quantitative questions may be concerned with the library's present holdings and focus on the formats of materials collected, the subjects collected, the various categories of users to be served, or the specific purposes for which the collection is being built.

Questions such as the following might trigger a collection evaluation: What percentage of the collection is held in a particular format? How is the collection divided among the subjects (expressed in either broad or narrow terms) for which the library is responsible? How do selected subsets of the collection compare with the total number of works published or distributed in that subject or format? How old is the collection? Are some parts of the collection older than others? How many items in the collection can be identified as appropriate for any particular group of users? How well does the collection match (in terms of percentages of the whole) the teaching or research program(s) to be supported by the library?

While some quantitative questions focus on numbers of items held in certain categories, others emphasize the allocation of funds. How much money was spent during the current year on various forms of materials or on particular subjects? How many items were actually

Evaluation by Library Type

purchased in various categories during the past year? What was the average cost per item? How much was spent per user group? How much was spent per teaching area or research program?

In the case of all quantitative questions, figures for the current or most recently-completed year may be compared with previous years. How many monographs in the social sciences or in the humanities were acquired in each of the last five years? How does the number of current journal subscriptions in the sciences, in medicine or in technology compare with the number five years ago? What trends in collecting activity and expenditures can be observed over the past few years? What would be the effect on the collection if these trends continue into the future?

Qualitative, or subjective, questions may also be asked about the collection. Sometimes the expert opinions of outsiders are obtained in person, but often they are gained from selected bibliographies and other published lists. The question, How well does the collection measure up to what experts think is best? may be operationalized as, What percentage of the items listed in a standard bibliography are owned by the library? Qualitative questions may be very broad: How good is the collection overall? Historically, what are the strengths and weaknesses of the collection? Qualitative questions may also be asked in specific terms. For example, the collection may be divided by format, by subject, by materials selected for a particular purpose (e.g., research project or outreach program), or for a particular group of users. Each of these subsets may then be evaluated for strengths and weaknesses. Questions about quality may also focus on the strengths represented by particular sets or individual items that are included in the collection or on weaknesses represented by missing titles. Which sets of importance in a given field have been acquired? Which significant titles are missing?

Other questions about quality concern those closer to the collection. The primary users of a collection may be asked, in a formal way, to give their own expert opinions about the condition of the collection, although potential users express opinions every day about the collection by their use or nonuse of it. How much is the collection used by those for whom it was gathered? Which part is most heavily used? How much is the collection used in terms of what it costs?

Evaluation may also focus on the extent to which the collection is actually available to specified groups of users. In some large libraries with extensive holdings, the questions about the collection are not concerned so much with what the library owns but with the accessibility of those materials to the users. What percentage of the library materials

wanted by users is actually found and checked out? Does the percentage vary from one part of the collection to another?

In addition to questions about quality as perceived by outside experts or by primary users, there are evaluation questions that call for comparisons. Often these are questions with both quantitative and qualitative answers. For certain types of libraries the question of how well the collection meets state or national standards is an important one. Many librarians want to know how their collections compare with those of other libraries. In general, how well does the collection being evaluated compare with collections in peer institutions or communities? More specifically, how does the journal subscription list in a given subject area compare with that of similar-sized libraries, or larger libraries, or libraries supporting comparable academic programs? The emergence of cooperative programs has made comparative collection evaluation questions more important. Which library in the consortium has the strongest collection in a particular format or in a particular subject?

Additional Factors Influencing Collection Evaluation

Beyond the underlying motivation for collection evaluation and the specific question(s) that may trigger such a project, there are other factors that influence collection evaluation. Since these factors may also be distinguishing features between types of libraries, they are related to the differences in evaluation techniques and points of view from one type of library to another.

One of the most obvious differences among types of libraries is the purpose for which the various collections are established and toward which collecting activity is presumably aimed. The traditional division of libraries in the United States has been by public, school, academic, and special. There are major differences among libraries on the basis of their purposes, sizes, and the settings in which they operate. Some libraries—elementary school, high school, community college, liberal arts college—operate in settings that are primarily educational; that is, the library exists principally to support instruction. Other libraries—in corporations, research institutes, certain government agencies—exist primarily to support research and development programs. University libraries, law school libraries, medical school libraries, and other special libraries in academic settings have dual responsibilities—i.e., to support both instruction and research. Public libraries and other libraries not attached directly to another organization may have such a

Evaluation by Library Type

multiplicity of purposes that it is difficult to determine what the focus of the collection—and therefore of a collection evaluation project—should be. The specific question to be emphasized in collection evaluation and the technique(s) to be used to answer it will be different in the library set up to stimulate creative use of leisure time from the situation in an information center organized to support a specific research program.

Variations in the planning and execution of collection evaluation projects are often related to the organization and governance of the library (or system) planning the project. When a library is part of a school, college, university, corporation, government agency, etc., the motivation for collection evaluation and even the questions to be asked may come from outside the library. On the other hand, if the library has an independent status, there will be more freedom to choose the guiding questions and to design the project. Again, if a library or information center is part of a system of libraries or an information network, the direction taken in collection evaluation will be much influenced by the considerations important to that type of organization.

The clientele of a library—their strength in terms of numbers, intensity of use of the collection, activity in making suggestions for additions—may affect the timing and organization of a collection evaluation project. The sophistication and interest of users may be a determining factor in how much weight circulation statistics and user opinions are given in collection evaluation.

The size of a collection, as much as the type of library, has an effect on collection evaluation procedures. The smaller the collection, the more thoroughly it can be scrutinized. The larger the collection, the more likely it is that easily-collected quantitative measures will be allowed to substitute for a time-consuming assessment by outside experts. Also, the larger the collection, the more likely that it will be broken into subsets for evaluation and that the timing, techniques, questions asked, etc. will vary from one part of the collection to another.

Resources available for a collection evaluation project may influence the direction of the project as much as, or more than, the type of library. The size of the library staff and the total number of people available to work on the project will determine how many questions may be studied and what part(s) of the collection may be included in the project. The money available for the project and the presence or absence of a firm deadline will, in a similar way, set limits on the project and restrictions on the techniques that may be used.

The urgency of the need for information generated by the collection evaluation project (which may be related to whether the motivation for

collection evaluation comes from inside or outside the library), as well as the intended applications, determine the extent, direction and intensity of collection evaluation. If one particular item of statistical information is needed to answer a questionnaire or to prepare a budget request, the evaluation of the collection may be limited and sharply-focused. On the other hand, if a general interest in assessing the collection stimulated the project and there is no firm deadline for gathering data, a project may spread in many directions, take up many questions, and extend into the indefinite future.

Public Libraries

Collection evaluation questions in public libraries range from the simple questions that can be answered by gathering statistics on holdings, circulation and expenditures to questions of access or availability. The most important questions seem to be these: How is the collection distributed by subject and by format? How old is the collection? How many items in the collection can be identified as appropriate for any particular group of users? How much money was spent during the current year on various forms of materials or on particular subjects? How many items were purchased in various categories during the past year? How much was spent per user group? How much is the collection used? How much is the collection used in terms of what it costs? What percentage of the library materials wanted by users are actually found and checked out?

A project to improve the book collection at the Windsor (Connecticut) Public Library is a good illustration of the ways in which quantitative data may be used to evaluate a collection. For many public librarians, the first step in evaluating the collection is to develop a profile of it in order to understand what is already in the collection and what is currently being added. The Windsor Public Library project began with analysis of a shelflist sample to determine subject distribution of the collection, average age of materials in various categories, rate of circulation in relation to subject and age of individual items, and the percentage of the collection that was missing.¹ The same study also gathered information on circulation for six, one-week periods, use of the nonfiction reserve list, interlibrary loan requests for one year, and reference questions for one year not satisfactorily answered by the reference staff. With these data in hand, efforts were made to determine relationships between acquisition patterns and circulation and to establish congruence between circulation and budget allocation. (Other

Evaluation by Library Type

results of this collection evaluation were the identification of one purpose of the library—recreation—as very important to its patrons and the attempt to make budget allocations consistent with that priority.)

Questions about who uses the library collection occupy much of the attention of public librarians. Zweizig and Dervin pointed out in a review of the literature on public library use and users that, as financial pressures on municipalities have led to reassessment of the services (unique or otherwise) of all public service agencies, librarians have been encouraged to gather information on the use of all aspects of the public library's services, especially the use of the collection.²

Use of the collection may be studied by analysis of circulation records or through questionnaire or interview surveys of a sample of those who live in the library's taxing district or who come to the library. Circulation statistics may be analyzed for selected groups of users, subjects or formats. Automated circulation systems make the analysis of such statistics much easier, but even circulation data gathered through a manual system can provide some useful information on how well the collection development program is operating. Of course circulation data alone cannot provide information on the needs of nonusers, or even the unmet needs of active users. Surveying users means focusing on individuals, rather than on records, and asking patrons whether, how much, in what way, or why they use the library. Questionnaire and interview surveys are more difficult than many librarians realize and the responses to poorly-planned surveys are relatively worthless.

The need for better guidance on how to obtain patron feedback about collection quality was partially answered by publication of the Public Library Association's *A Planning Process for Public Libraries*. Intended to be the kind of document "needed to guide public library service in the 1980's," *A Planning Process* presents techniques for monitoring and adjusting objectives as community conditions and needs change.³ Since one of the major features of the library that must be monitored and adjusted is the collection, statistics and performance measures relevant to collection evaluation are presented and explained.

According to *A Planning Process*, measuring availability of materials through the library's collection is one of the best ways to evaluate the appropriateness of the collection:

Because each public library is different, we have chosen not to select collection measures which depend on some standard list, or even on the library's shelflist, since even that may not reflect needs of the patrons. Instead, we feel that collection measures should depend on the real demands made on the collection by its users.⁴

To this end, availability analysis, based on specific user requests, is proposed. This kind of analysis applies only to those people who come to the library for specific material needs. All users, or a sample of them, may be studied for a specified period of time. Those who come to the library to obtain known items are asked to provide, through short questionnaires or interviews, information about their success or failure in locating the items they want. Searches that end in failure are analyzed in order to determine the causes of that failure.

In addition to the availability analysis techniques proposed in *A Planning Process*, there are other explanations in the literature of the way in which to conduct material availability studies. Wiemers described an approach to measuring availability of materials in a small- or medium-sized library and illustrated the use of his techniques with a report on a study conducted at the Champaign (Illinois) Public Library and Information Center.⁵

Another indicator of success in providing materials that may be monitored is the amount of time it takes public library patrons to obtain the materials they want. Data-gathering in the course of keeping reserve lists and processing interlibrary loan requests can provide the necessary ingredients for an analysis of time delays. Analysis of this type of data can have implications for collection development and also for circulation and reserve policies.

Although much emphasis is given to use and availability of materials, some public librarians are still interested in the question of how good (by an external standard) are the materials that have been added to the collection. Goldhor has proposed and applied in several situations an "inductive method" of evaluating a book collection.⁶ This method consists of drawing a sample of titles from a library's holdings and searching these titles in each of several retrospective bibliographies, current reviewing journals, or other lists of recommended works. This approach to collection evaluation is based on the assumption that listing in a reviewing source or retrospective bibliography is an indication of quality:

Those titles found in all or most such bibliographies are likely to be valuable and desirable books; those found in only one or two such tools are probably of lesser quality; and those found in none of the lists are of questionable value or are local publications.⁷

School Library Media Centers

The need for evaluation of school library media center collections is recognized officially in the latest set of standards, *Media Programs*:

Evaluation by Library Type

District and School, where, in the section on collections, the statement appears: "Collections are reevaluated continuously to insure that they remain current and responsive to user needs."⁸ Other authorities also remind school library media specialists of the importance of collection evaluation. Mancall, in a review of pertinent studies on the evaluation of media centers, pointed out that media specialists must search for ways to "demonstrate the value of media collections to users."⁹ She continued:

Evaluation permits us to describe what exists in relation to what is needed, and thus sheds light on the effectiveness of current collection management policies. We can test whether collection policy is in line with curricular programs, and target limited monetary resources to areas that need attention.¹⁰

Van Orden, too, noted the media specialist's need for information about the collection, in order to make intelligent decisions.¹¹

In school library media centers (and in other libraries serving institutions where maintaining accreditation is a concern), questions about the collection are frequently asked in terms of state and national standards. Collections can be examined against the quantitative recommendations in *Media Programs: District and School*,¹² as well as against any relevant state standards. Questions are also asked about the size of the collection in comparison to libraries in similar types of schools and the strengths or weaknesses of the collection in comparison to lists of recommended titles. All of the questions about size, growth, and expenditures that are asked in the public library may also be asked in the school library media center; but, in addition, there will also be questions about the relationship of the collection and the school's curriculum. Van Orden included among a list of questions that might be answered by collection evaluation: "Is the collection responsive to changes in the school's program? Does the collection support curricular and instructional needs?"¹³

Examples of techniques used in collection evaluation in school library media centers may be found in Daniel's review of performance measures for school libraries and in Mancall's review of the literature on collection evaluation in school library media centers.¹⁴ In addition, Mancall and Drott have published a detailed description of the results of a study using their methodology for collecting information about the materials students actually use in school-related assignments and about the general information-seeking habits of students.¹⁵

Large Academic Libraries

Collection description, collection analysis and collection assessment are all terms used to cover collection evaluation activities in large university libraries. Collection description is the gathering of statistics to develop a quantitative profile of the collection. Collection assessment typically refers to a judgment of quality, particularly in terms of announced goals or objectives for the collection. Collection analysis can involve a broad range of activities, including determining institutional goals and objectives, reviewing the history of the collection, formulating policy statements, judging quality, and adjusting allocation procedures.

Mosher has outlined the history of formal collection evaluation efforts in university libraries, beginning with a series of surveys in the 1930s and continuing into the 1950s.¹⁶ These surveys were usually descriptive rather than analytical and ordinarily involved the use of faculty members as subject experts or evaluators. Some of the most systematic of these surveys utilized the extensive checking of standard subject bibliographies and other recommended lists. Increased attention to collection evaluation in university libraries since 1960 has, according to Mosher, been largely due to the increasing influence of librarians on all aspects of collection development:

The move of primary collection development responsibility from the faculty to the library, the increase of attention devoted to collection development which resulted, and the common attempt to systematize, rationalize, and improve the planning and procedures of library collection development during the ensuing decade and a half...has been one of the most significant and original contributions to the growth of professional librarianship in the United States during the last generation.¹⁷

In recent years, the Association of Research Libraries (ARL) has taken the lead in helping large university libraries develop techniques for analyzing and evaluating their collection development programs. ARL's Collection Analysis Project (CAP) was initiated in response to the economic and institutional pressures forcing change on large universities during the 1970s. Several assumptions influenced the design of CAP: that limited funding requires closer attention to the management of collections; that evaluation of the success of a collection development program should include consideration of both the institution's goals and objectives and the important research collections already held by the library; that faculty representatives should be involved in establish-

Evaluation by Library Type

ing collection development policy, but not in carrying it out; and that, "collections must be managed with regional, national, and inter-library cooperation and resource-sharing as integral parts of the planning."¹⁸

Descriptions of collection analysis or assessment projects at several university libraries can be found in the literature. ARL published a Systems and Procedures Exchange Center (SPEC) Kit in 1978 with examples of guidelines, procedures, and projects from nine large university libraries.¹⁹ In the same year ARL published an interim report on CAP which included reports from the Massachusetts Institute of Technology, Arizona State University and the University of California at Berkeley.²⁰ Another SPEC Kit was published in 1982, containing eight examples of collection assessment techniques and excerpts from several CAP reports.²¹ In addition to using materials from ARL's Collection Analysis Project, some university libraries have developed their own manuals. An example is the *Collection Assessment Manual* prepared by Hall for Brigham Young University.²²

University librarians must often answer questions about size and growth rate of the collection, the distribution of the collection by subject, the distribution of the collection by format, and the rate of expenditure and distribution of funds by all those categories. The importance of size as a measure of the quality of a university library collection is emphasized by the membership requirements of the Association of Research Libraries, the common practice of ranking university libraries on the basis of size of holdings, and the ARL/ACRL "Standards for University Libraries." In the latter statement, the first standard (B.1) under the section on "Collections" requires that: "A university library's collection shall be of sufficient size and scope to support the university's total instructional needs and to facilitate the university's research programs."²³

Determining the extent of a university library's holdings in various subjects is not always easy. In some large university libraries, evaluators have resorted to measuring shelflist cards to make estimates of volume holdings. Black, for example, outlined procedures used at Southern Illinois University to estimate nonperiodical collection size in a science library.²⁴ Those who are uncomfortable with shelflist counts argue that a high percentage of titles in a given subject may not be classified in the relevant class letters or numbers. Saunders and others proposed two alternatives to shelflist measurement—one based on a modified shelflist count and the other using a random selection from the author/main entry catalog.²⁵

In addition to overall size, growth rate of the university library collection has come to be an important indicator of quality. Leach credited Fremont Rider with asserting, "the truism that there exists a direct correlation between continuous library growth and the educational effectiveness of any university...."²⁶ Voigt suggested a model for determining the minimum annual acquisition rate for a university library.²⁷ Using variables similar to those found in Formula A (for calculating collection size) of the ACRL "Standards for College Libraries," Voigt's model starts with a basic acquisitions rate of 40,000 volumes and adjusts that figure on the basis of such factors as number and type of advanced graduate programs, advanced graduate professional schools, undergraduate students, sponsored research, and lack of access to other research libraries. Taking a different approach and using data from a sample of academic libraries of varying sizes, Hodowanec developed a multiple regression equation to calculate the number of books to be added to a collection per full-time-equivalent enrollment.²⁸ The two best predictors of acquisition rate, according to his analysis, are circulation per student and number of courses offered per student.

Many projects designed to evaluate in depth a selected subject collection in a university library use, as one approach, the procedure of identifying authoritative lists of published materials to check against holdings. Comer described the various ways a library's holdings may be compared with one or more lists of selected titles and discussed the advantages and disadvantages of this collection evaluation technique.²⁹ Reports on projects using checklists at Stanford University, the State University of New York at Binghamton, the University of North Carolina at Charlotte, the State University of New York at Buffalo, and the University of Colorado have all appeared in the literature.³⁰ Evaluation by this technique is based on the assumption that lists can be found that include the most important titles in a given subject field. Since, however, large university libraries tend to have the "core" materials in most areas and need to be evaluated on how well they cover the materials beyond the core, it is often difficult to find appropriate published subject bibliographies. As one university bibliographer who tried the checklist technique noted: "The choice of bibliographies to be sampled was the most difficult and critical task."³¹

When university librarians want to use the checklist method of collection evaluation, they must turn to something far more exhaustive than *Books for College Libraries*. Subject bibliographies can sometimes be identified (Tjarks proposed twenty-nine bibliographies useful for evaluating resources in English and American literature and lan-

Evaluation by Library Type

guages³²); but often special lists must be constructed. McInnis proposed drawing a random sample of works from the research published in a selected discipline and checking the citations in those research works against the library's holdings.³³ Lists of references may be constructed from dissertations recently completed, either at the university being evaluated or at other institutions.³⁴

Attempts to evaluate a research collection at more than a superficial level have led to variations on the traditional checking of standard bibliographies. When those in charge of collection development at the University of Florida wanted to determine the depth of their collections in twenty-eight subject fields, they chose the printed catalogs of the Library of Congress as the external standard.³⁵ Samples were drawn from the Library of Congress catalogs and searched in the university library catalog. Another citation checking procedure, proposed by Lopez, also aims at measuring depth of a collection.³⁶ This technique involves selecting a random sample of references from a subject bibliography, checking for those works in the collection and then taking a new random sample of citations from the works located in the first sample. The evaluator continues checking holdings and drawing new samples of references until the collection fails to supply any of the items drawn in a sample. Each succeeding sample is assumed to represent a level of greater depth (or ability to supply research materials) of the collection. Weighted scores may be assigned for each citation successfully located in the library, with highest scores going to citations found in the last sample (or highest level) searched.³⁷ Nisonger has published reports on the use of this technique in several university libraries.³⁸

Evaluation of the collection through use and user studies is now such a standard procedure that the Resources and Technical Services Division of ALA has issued guidelines on the subject.³⁹ The main types of use and user studies outlined in these guidelines are circulation studies, surveys of user opinion, in-house use studies, document delivery tests, shelf availability studies, and citation studies. Other general discussions of the advantages, disadvantages and techniques of use and user studies have been provided by Broadus, Burns, Lancaster, and Osburn.⁴⁰

University librarians have been actively involved in the debate about the use of circulation studies as a measure of collection value, particularly since the publication of the University of Pittsburgh study in 1979.⁴¹ Proponents of circulation studies argue that the use of any item in a collection is the most valid measure of that item's worth to the library and that the problems of collection development must be consi-

dered in the context of collection evaluation.⁴² Critics generally agree that circulation studies have some place in collection evaluation, but they also contend that too many assumptions are made in such studies and that too much confidence has been placed in the technique. Nevertheless, the presence of automated circulation systems that allow librarians to do detailed and long-term analysis of circulation statistics make it likely that circulation studies increasingly will be used. With studies of their circulation data, university librarians may answer several questions: What parts of the collection are used? How often are materials used? Who uses various types of materials? A report on a statistical analysis of five years of monograph circulation data at Ohio State University lists some of the hypotheses that may be tested by such analysis.⁴³ Axford, speaking from the perspective of a university librarian, predicted in 1980 that, "there is every reason to believe that the long-term collection use study will become widespread and that it will result in fundamental changes in the way library collections are managed in the decade ahead."⁴⁴

Although circulation studies are usually conducted with data representing use of the materials held in the library's own collection, borrowing patterns for materials not owned may also be studied. New and Ott suggested that preliminary identification of weak areas in a collection may be made through an analysis of interlibrary loan requests.⁴⁵

In addition to studies of user's characteristics based on circulation records, questionnaire or interview surveys may be carried out to gain information on users' perceptions of the collection and how well it meets their needs. The Association of Research Libraries, through its Systems and Procedures Exchange Center, has collected and distributed examples of general user satisfaction surveys from several university libraries, and also examples of user surveys on specific issues.⁴⁶ Bonn observed: "Of all the ways in which to evaluate a library's collection, finding out what its users think of it comes closest to an evaluation in terms of the library's objectives or missions."⁴⁷ In spite of the obvious advantages of such a technique, there are limitations. Even in a university library, which serves a relatively sophisticated group of users, respondents may not always be able to state what they need or expect from the collection. Their own reports of their library use patterns may also differ from their observed behavior.

Studies of the use of materials within a library are usually more difficult to conduct than circulation studies, but they provide data needed to form a complete picture of collection use. Periodical use, for

Evaluation by Library Type

example, is often in-house and difficult to assess. Shaw reported on a study at Case Western Reserve University of bound journal volumes in which pressure-sensitive labels were applied to volumes and issues as they were reshelfed.⁴⁸ Data were collected by counting and recording the location of labels at regular intervals. For a study of unrecorded use and "at-the-shelf discovery" of materials from the general collection of two campuses of the University of California, Lawrence and Oja collected data through the use of questionnaires inserted in monographs and bound periodicals.⁴⁹

A fairly recent trend in university library collection evaluation has been to try to assess the library's capability of providing prompt access to the materials users need. This may take the form of studying what is available on the library's shelves at a given time or evaluating total resource adequacy—the holdings of the collection surveyed plus the external resources also available to users of that library through cooperative arrangements. Reports by Kantor, Saracevic and Shaw on availability analysis studies at Case Western Reserve University illustrate how these techniques may be used in university libraries.⁵⁰

Small- and Medium-Sized Academic Libraries

The primary purpose of most small- and medium-sized academic libraries is to support the teaching (and sometimes service) programs of the parent institution. Collection evaluation projects in this type of library usually focus on such questions as these: How large is the collection? How is the collection divided among the subjects represented by the institutions' academic departments? How well does it match the degree programs offered? Have the basic works and important sets in each discipline been acquired? Which significant titles are missing?

In most small- and medium-sized academic institutions it is important for the collection to meet the appropriate standards for accreditation. Both two-year and four-year colleges have guidelines or standards that provide recommended collection sizes. The ACRL "Statement on Quantitative Standards for Two-Year Learning Resources Programs" specifies the size of the collection that should be available in "bibliographical unit equivalents," where a unit (BUE) consists of a specified amount of written material (e.g., one periodical volume, five uncataloged microfiche); recorded material (e.g., one cataloged 35-mm slide program, fifty cataloged 2x2 slides not in sets); or other material (e.g., one cataloged map, one cataloged kit).⁵¹ Recommended collection size is

stated in terms of BEU's by type of material (written, recorded or other) and in relationship to full-time-equivalent enrollment. The ACRL "Standards for College Libraries" provide a formula (Formula A) for calculating the number of volumes that should be readily available to students and faculty.⁵² Formula A begins with a recommended collection (85,000 volumes) and suggests addition to that on the basis of numbers of faculty members, students, major or minor fields, and degree programs.

As their colleagues in other types of libraries, academic librarians need information about the nature of their collections. Goldstein and Sedransk presented a technique for identifying collection characteristics by taking information available on a sample of shelflist cards.⁵³ Summaries of characteristics such as (1) publication date, (2) country of origin, (3) language of text, (4) type of publisher, (5) format, and (6) type of edition (e.g., original, reprint, facsimile) may be obtained in this way. Bolgiano and King reported a project to develop a profile of a periodicals collection in a medium-sized academic library.⁵⁴ Their profile included data on extent of index and abstract coverage of current subscriptions and congruence of the periodical holdings with (1) recommended lists, (2) an analysis of current titles in relation to the academic programs they might be expected to support, (3) interlibrary loan requests for periodicals, and (4) journal citations in theses accepted by the university over a five-year period.

Since cataloging, acquisition, circulation, and other files are automated in many academic libraries, quantitative studies of collection characteristics are relatively easy. Kim described the way in which the University of Lowell used OCLC-MARC tapes to analyze new acquisitions.⁵⁵ At Knox College, a locally-developed automated acquisitions system is used to monitor characteristics of new acquisitions (e.g., publisher, subject).⁵⁶ Townley reported on the procedure, involving manual data collection and computerized analysis, used at a regional campus of the Pennsylvania State University "to address three collection-related concerns: (1) book use, (2) book loss, and (3) duplication with Penn State University Libraries' bibliographic records."⁵⁷

Determining the relationship of the collection to the academic programs of the institution is an important feature of many library collection evaluation projects. A common way to answer the question of how well the collection matches the academic programs of the institution is to assign classification numbers to all courses in the curriculum, based on official catalog descriptions, and then to match this list against a shelflist count of the appropriate classification numbers.⁵⁸ An exam-

Evaluation by Library Type

ple of this approach is a collection evaluation project at Gonzaga University, which involved the typical reviewing of official descriptions for all courses and assigning of Library of Congress class numbers to each.⁵⁹ Class numbers were then matched against a count of the library's holdings as recorded in the shelflist to determine extent of the collection's support in the four major academic divisions: arts and sciences (further subdivided into fine arts and humanities, language and literature, social sciences and history, and natural sciences); engineering; education; and business administration. In other projects, circulation statistics have been analyzed by class number and academic department to determine, first, which volumes bear a subject relationship to each academic department and, second, the circulation-per-volume related to each department and circulation compared with the number of students in each department.⁶⁰ Such comparisons identify departments with smaller relevant holdings, as well as areas of the collection with high and low use.

Using checklists to evaluate the quality of small- and medium-sized academic library collections is fairly common. Shabowich describes the way in which a collection of less than 90,000 volumes was checked against *Books for College Libraries* in order to judge its quality.⁶¹ In the previously-mentioned study at Gonzaga University, a shelflist sample was drawn to develop a profile of the collection; but, in addition to noting date of publication, language of publication, and type of publisher for each card drawn from the shelflist, librarians at Gonzaga also checked each title in the sample to see if it appeared on any of a selected group of recommended lists. The use of lists for evaluation and for development of retrospective collections go hand in hand. Clarke, in a discussion of recommended techniques for strengthening academic collections, listed bibliographies that might be checked.⁶² Schad and Adams also recommended an approach to evaluation that combined quantitative analysis, gathering of reactions from users, and conducting preliminary bibliographic surveys, using basic lists of one sort or another.⁶³

Use by students and by faculty has become an important point of interest in small- and medium-sized academic libraries. A project conducted under the sponsorship of the Associated Colleges of the Midwest and the Council on Library Resources, and based on testing of the procedures at Knox College, Lake Forest College and St. Olaf College, resulted in a manual for measuring circulation use in a small academic library collection.⁶⁴ The manual contains a step-by-step guide to initiating the study, preparing the staff, collecting and analyzing the data, and

applying the results. Questions which such a study is designed to answer include: What proportion of the collection circulates? What is the average age of materials within each discipline? Is there a relationship between the age and use of materials in each discipline (subject area)? Are portions of the collection underused? Are portions of the collection more heavily used than their size would indicate?

Several examples of use studies in small- and medium-sized academic libraries have been published. Last circulation date data were used at the University of Wisconsin—Stout to determine a core collection, based on the percentage of circulation accounted for by given percentages of the collection.⁶⁵ Two types of samples were drawn: one based on items circulating at a given time and the other based on books on the shelves at a certain time. Hardesty, working at DePauw University, chose, “to replicate the University of Pittsburgh study at a college library with a more limited budget, smaller staff, fewer resources, and less comprehensive purpose.”⁶⁶ In a separate study, Hardesty also examined use of the reserve collection at DePauw.⁶⁷ Also inspired by the University of Pittsburgh study, Ettelt reported a book use study at a small community college.⁶⁸ In other studies, Schwartz (Fairleigh Dickinson University) and Maxin (Clarkson College of Technology) examined use of periodicals and reported on the procedures for such a study and the implications for collection development of periodical use data.⁶⁹

Special Libraries In Academic Settings

Collection evaluation in departmental libraries and special research collections of colleges and universities tends to be similar to that in general academic libraries, with the possible exception of more emphasis being placed on meeting the needs of researchers. Kusnerz, writing from the viewpoint of art history libraries, listed these questions as relevant to the evaluation of a special library in an academic setting:

- (1) Are the reference collections adequate to support user needs? (Substitute “serials,” “exhibition catalogs,” or “monographs in a particular subject area” to evaluate other parts of the collection.)
- (2) Which significant titles are lacking? What amount of money is required to purchase these titles retrospectively?
- (3) What are the historical strengths and weaknesses of the collections?
- (4) How does this collection compare to peer libraries?
- (5) Is the library acquiring new publications at a level adequate to support user needs?
- (6) Is the library collection accessible and available to the users?⁷⁰

Evaluation by Library Type

Using quantitative analysis to develop a profile of the collection, identifying strengths and weaknesses through citation checking, obtaining the opinions of outside experts, and surveying the library's own users are all techniques that may be applied in special libraries. Results of projects using primarily one method, such as citation checking, or combining a variety of techniques have been reported in the literature.⁷¹ Most reports of collection evaluation projects, however, indicate that the questions of most interest are these: How much is the collection used? How much is it used in relation to its cost? Which parts of it (subject or formats) are used most? How do the regular users rate the holdings?

When subject departmental librarians gather data about their collections by measuring recorded use, they often focus on a particular form of material, such as maps or government documents. Many special librarians, however, for reasons not difficult to guess, appear to be preoccupied with journal usage. In-house use of journals, out-of-library circulation figures, statistics from the reserve collection, and interlibrary loans are all used to answer questions concerning use of a particular part of the collection.⁷²

Questionnaire and interview surveys conducted with faculty members appear to be almost as popular as circulation studies. At times more informative than circulation studies, these surveys may uncover patterns of nonuse as well as use. Stenstrom and McBride surveyed, by questionnaire, 226 faculty members from thirteen social science departments at the University of Illinois and concluded that, "the majority of faculty surveyed use the library as a supplementary rather than as a primary source of serial information."⁷³

Citation analysis is another popular way to gather information about the ways in which specialists in general use recorded information and the ways in which a special departmental library or special collection may be used. General discussions of citation studies have been published by Subramanyam (science and technology); Fitzgibbons (social sciences); and Koenig (arts and humanities).⁷⁴ In special academic libraries, the citations analyzed are usually those found in faculty publications, master's theses, or doctoral dissertations.⁷⁵ The question implicit in this activity is how well could the local collection have supported the studies in question.

Researchers continue to be interested in comparing the various techniques for gathering information on the value and use patterns of certain types of materials. Satariano took reports by a group of sociolo-

gists on journals they regularly read and compared these with lists of most frequently cited journals in sociology. He concluded that citations show a "cross-disciplinary focus" that is not apparent in the lists of journals regularly read and that citation studies "underestimate the importance of popular social science periodicals and speciality and regional journals in the reading of sociologists."⁷⁶ How useful are "core lists" of journals developed by various methods? Comparisons have been made of the rankings obtained by subjective opinions of experts, citations found in journal articles, and titles cited in online bibliographic services.⁷⁷

Special Libraries In Nonacademic Settings

While librarians in nonacademic settings do not have to be concerned with how well the collection supports a teaching program or, in some cases, even a research program, their other concerns are similar to those of librarians in academic special libraries. Evaluation of government research libraries, professional collections in public or nonprofit agencies, corporate research and professional libraries may start with these questions: What are the strengths and weaknesses of the collection? How much is it used? What can be done to increase the relevance of the holdings? What level of funding will be needed to eliminate weaknesses and continue building on strengths?

Whatever the type of library, collection evaluation projects cannot be planned in detail until a profile of the collection has been developed. An example of this "base-building" step is a report by Craig and Strain on a study of new titles cataloged at the National Library of Medicine over a twelve-year period. These additions to the collection were analyzed by subject, language and processing time.⁷⁸ Byrd and others, working in a much smaller medical library, tested a way to use interlibrary loan and acquisition statistics "to graph the broad and narrow subject fields of strength and potential weakness in a book collection."⁷⁹

Circulation studies are also conducted in research and professional libraries in nonacademic settings. Circulation records of a group of books selected on the basis of a previously established acquisitions policy were studied by Schwartz to determine how much use they received from an industrial research organization's professional staff.⁸⁰ Del Frate reported on the way in which the automated circulation system of NASA Goddard Space Flight Center Library provided information on interest patterns and recent changes in use of staff members there.⁸¹ Drawing data from a monograph collection of the National

Evaluation by Library Type

Oceanic and Atmospheric Administration Environmental Research Laboratories Library in Boulder, Colorado, Wenger and others developed a technique for determining circulation/inventory ratios for each subject in the collection.⁸²

Journals are the most important part of the collection in many special libraries, especially those supporting research and development activities. For that reason usage studies in special libraries often focus on journals.⁸³ Journal use studies at hospital libraries have also been reported in the literature.⁸⁴ In a related area, Thorpe described how a British pharmaceutical research library revised its journal subscription list on the basis of interlibrary loan analysis and in-library use data.⁸⁵

Consortia

Collection evaluation is emerging as a significant feature of cooperative planning for resource sharing and preservation among groups of libraries and information centers. Since successful cooperation usually starts from discussions that are based on thorough knowledge of the assets and liabilities of the individual libraries, it is important that, at the very least, each participating library be able to provide an accurate count of volumes or titles by subject classification number, and/or format.

A "Guide to Coordinated and Cooperative Collection Development," approved in March 1983 by the Resources Section of ALA's Resources and Technical Services Division, notes among "four principal elements" of collection management "evaluation or analysis of the collections."⁸⁶ In the section of the guidelines covering "Suggested Steps in Setting Up Cooperative Agreements for Collections," the following appears:

3.3.4 Define the subjects, areas, or issues of mutual concern or interest, based on your library's mission, goals, and needs, and on your collection's strengths and areas of deliberately small holdings. Draw upon your knowledge of the collection, collection evaluation or analysis results, shelflist measures, and use or user studies, when possible, to inform your judgements.

3.3.4.1 Preliminary discussions may reveal the need for standardized collection description or assessments....⁸⁷

From the resource sharing point of view, one of the first collection evaluation questions to be asked is which library has the strongest collection (usually defined as the largest number of titles or items) in any given subject. The technique for identifying major characteristics

(e.g., subject, age, place, and language of publication) of a collection by sampling the shelflist was used by Goldstein and Sedransk to compare the Jewish history collections in seven university libraries. They concluded that their sample technique was "particularly useful in a comparative evaluation of the holdings in one subject area at a number of similar libraries."⁸⁸ Using the National Shelflist Measurement Project data collected by a number of university libraries as a guide, members of the Research Libraries Group developed the *RLG Conspectus*, which is "an overview, or summary, arranged by subjects, of existing collection strength and future collecting intensities of RLG members."⁸⁹

Another question of interest in cooperative collection planning is how much the collections of participating libraries duplicate one another. Potter, in a critical review of overlap studies, identified the following factors as being important in trying to reach generalizations about the phenomenon of collection overlap: "(1) the role of the size of the library, type of library, and age of library in the extent of collection overlap; (2) the proportion of titles held by a group of libraries that are unique to one library; (3) the range of duplication between pairs of libraries; and (4) the relationship of methodology to the purpose of each study."⁹⁰

Several overlap studies have focused on groups of libraries receiving their primary funding from the same source. Knightly sampled the library holdings of twenty-two state-supported universities in Texas and compared the samples in nineteen subject areas.⁹¹ He concluded that there was extensive overlap, not always related to curricula, but tending to be highest among schools with doctoral programs. At about the same time, Cooper and others conducted a survey to determine duplication of monograph holdings in the University of California Library System.⁹²

The availability of holdings' records in machine-readable form has made overlap studies much easier. Moore and others analyzed OCLC archival tapes of eleven campuses of the University of Wisconsin System for a two-year period and found title overlap of new acquisitions ranging from 18 to 32 percent, with English-language publications from university presses being the most frequently duplicated.⁹³ The duplication of public library holdings has been studied by Shaw and Stockey in Indiana and Davis and Shaw in two Canadian provinces and Indiana, while Doll looked at collection overlap between elementary schools and the public library in four Illinois communities.⁹⁴ Overlap among the collections of similar special libraries has also been studied.⁹⁵

Evaluation by Library Type

As librarians turn more often to cooperative arrangements to provide materials needed locally, the question of how much cooperative schemes actually improve the availability or access becomes one of the most important evaluation questions. What percentage of requested materials are actually provided to a library's users and how long does it take to get those materials? An example of a technique used to answer these questions is the standardized Document Delivery Test, first applied by Orr and his associates to a large group of medical school and biomedical resource libraries.⁹⁶ The "Capability Index" produced by the Document Delivery Test is a quantitative expression of a library's ability to satisfy requests for a list of specific items. It is designed to emphasize the speed with which a library can deliver an item, rather than the size or composition of its own collection. If the list of items chosen for such a test is appropriate, the Capability Index should give an indication of how well resource sharing arrangements are working.

Most collection evaluation projects involving groups of libraries have tended to rely on quantitative techniques such as: collecting statistics on the total collection and size of various subject collections, and percentage of overlap of total collections and of new acquisitions. Quality has usually been equated with quantity; the larger collection is assumed to be the stronger. Although checking of standard bibliographies, assessments by outside experts, and user surveys are most often applied to the evaluation of individual library collections, there is no reason (other than lack of staff to carry out the project) that such techniques could not be used in cooperative collection evaluation. Goldhor, in a 1977 study of the nature and extent of U.S. public library holdings of adult nonfiction books in the humanities, used his "inductive method" of evaluation mentioned previously.⁹⁷ In this case he took a large sample of titles held in one or more of the nineteen cooperative libraries and checked each title against listings in *Public Library Catalog*, *Books for College Libraries*, *Choice*, *Book Review Digest*, *Booklist*, and *Library Journal*.

Conclusion

While standard collection evaluation techniques—e.g., collecting and manipulating statistics on characteristics of the collection, checking standard lists, asking experts, analyzing circulation and citation data, surveying users on their successes, failures, expectations—may be (and are) used in any type of library, they appear to receive varying

amounts of emphasis from one type of library to another. Differences in the choice of technique arise from differing evaluation objectives (or questions to be answered). The choice of questions to guide the evaluation are themselves determined by the purpose(s) of the library and the additional factors—e.g., governance, clientele, size—influencing and motivating the evaluation. For example, librarians in all types of situations have an interest in how much the collection is used, but those who feel great pressure for accountability from governing authorities or who have a high opinion of the work and abilities of their potential users will have a special interest in gathering information on use and users. In libraries connected with academic institutions, meeting accreditation standards can be very important, so the emphasis of evaluation may be on gathering statistics and measuring size of holdings. In cases where outside influences are not great and the evaluation project originates from the librarian's desire to know how well the collection development procedures are operating, the way in which collection evaluation is approached may depend on the librarian's philosophy. A librarian who is primarily concerned with the quality of the materials added to a collection will probably choose collection-centered questions and techniques (e.g., checking of standard lists). One who is more concerned with responding to known demands will plan the project around questions of use and user expectations. Participation or nonparticipation in consortia may affect how collection evaluation is approached. In other words, evaluation can differ from one type of library to another, but differences can also be observed among libraries of the same type. They derive from influences and conditions that transcend simple "type-of-library" distinctions.

References

1. Ruef, Joseph A. "Management by Objectives: Improving the Book Collection." *Connecticut Libraries* 21(Summer 1979):17-18, 33.
2. Zweizig, Douglas, and Dervin, Brenda. "Public Library Use, Users, Uses: Advances in Knowledge of the Characteristics and Needs of the Adult Clientele of American Public Libraries." In *Advances in Librarianship*, vol. 7, edited by Melvin J. Voigt and Michael H. Harris, pp. 231-55. New York: Academic Press, 1977.
3. Palmour, Vernon E., et al. *A Planning Process for Public Libraries*. Chicago: ALA, 1980.
4. *Ibid.*, p. 121.
5. Wiemers, Eugene, Jr. *Materials Availability in Small Libraries: A Survey Handbook* (Occasional Papers No. 149). Urbana-Champaign: University of Illinois Graduate School of Library and Information Science, 1981.

Evaluation by Library Type

6. Goldhor, Herbert. "Analysis of an Inductive Method of Evaluating the Book Collection of a Public Library." *Libri* 23(no. 1, 1973):6-17; and _____. "A Report on an Application of the Inductive Method of Evaluation of Public Library Books." *Libri* 31(Aug. 1981):121-29.
7. Goldhor, Herbert. *A Study of Public Library Collections in the Humanities*. Urbana-Champaign: University of Illinois Graduate School of Library Science, Library Research Center, 1977, p. 2.
8. American Association of School Librarians and Association for Educational Communications and Technology. *Media Programs: District and School*. Chicago: ALA, 1975, p. 63.
9. Mancall, Jacqueline C. "Measurement and Evaluation of the Collection." *School Library Media Quarterly* 10(Winter 1982):185.
10. *Ibid.*, p. 105.
11. Van Orden, Phyllis J. *The Collection Program in Elementary and Middle Schools*. Littleton, Colo.: Libraries Unlimited, 1982, p. 246.
12. AASL and AECT, *Media Programs: District and School*, pp. 70-86.
13. Van Orden, *The Collection Program*, p. 246.
14. Daniel, Evelyn H. "Performance Measures for School Librarians; Complexities and Potential." In *Advances in Librarianship*, vol. 6, edited by Melvin J. Voigt and Michael H. Harris, pp. 1-51. New York: Academic Press, 1976.
15. Mancall, Jacqueline C., and Drott, M. Carl. *Measuring Student Information Use: A Guide for School Library Media Specialists*. Littleton, Colo.: Libraries Unlimited, 1983.
16. Mosher, Paul H. "Collection Evaluation in Research Libraries: The Search for Quality, Consistency, and System in Collection Development." *Library Resources & Technical Services* 23(Winter 1979):16-32.
17. *Ibid.*, p. 20.
18. Webster, Duane E. "A Concept of Collection Analysis and Development." In *Collection Analysis in Research Libraries: An Interim Report on a Self-Study Process*. Washington D.C.: Association of Research Libraries, Office of University Library Management Studies, 1978, p.5.
19. Systems and Procedures Exchange Center. *Collection Assessment* (SPEC Kit no. 41). Washington, D.C.: Office of Management Studies, Systems and Procedures Exchange Center, Association of Research Libraries, 1978.
20. _____, *Collection Analysis in Research Libraries*.
21. Association of Research Libraries. *Collection Description and Assessment in ARL Libraries*. (SPEC Kit no. 87). Washington, D.C.: Office of Management Studies, Systems and Procedures Exchange Center, 1982.
22. Hall, Blaine B. *Collection Assessment Manual*. Provo, Utah: Brigham Young University, Harold B. Lee Library, 1981.
23. Association of Research Libraries. Association of College and Research Libraries. "Standards for University Libraries." *College & Research Libraries News* 40(April 1979):102.
24. Black, George W., Jr. "Estimating Collection Size Using the Shelf List in a Science Library." *Journal of Academic Librarianship* 6(Jan. 1981):339-41.
25. Saunders, Stewart, et al. "Alternatives to the Shelflist Measure for Determining the Size of a Subject Collection." *Library Research* 3(Winter 1981):383-91.
26. Leach, Steven. "The Growth Rates of Major Academic Libraries: Rider and Purdue Reviewed." *College & Research Libraries* 37(Nov. 1976):532.
27. Voigt, Melvin J. "Acquisition Rates in University Libraries." *College & Research Libraries* 36(July 1975):263-71.
28. Hodowanac, George V. "An Acquisition Rate Model for Academic Libraries." *College & Research Libraries* 39(Nov. 1978):439-47.
29. Comer, Cynthia. "List-Checking as Method for Evaluating Library Collections." *Collection Building* 3(no.3, 1981):26-34.

30. Mosher, "Collection Evaluation in Research Libraries"; Whaley, John H., Jr. "An Approach to Collection Analysis." *Library Resources & Technical Services* 25(July/Sept. 1981):330-38; Cassata, Mary B., and Dewey, Gene L. "The Evaluation of a University Library Collection: Some Guidelines." *Library Resources & Technical Services* 13(Fall 1969):450-57; and Webb, William. "Project CoED: A University Library Collection Evaluation and Development Program." *Library Resources and Technical Services* 13(Fall 1969):457-62.
31. Webb, "Project CoED," p. 458.
32. Tjarks, Larry. "Evaluating Literature Collections." *RQ* 12(Winter 1972):183-85.
33. McInnis, R. Marvin. "Research Collections: An Approach to the Assessment of Quality." *IPLO Quarterly* 13(July 1971):13-22.
34. Buzzard, Marion L., and New, Doris E. "An Investigation of Collection Support for Doctoral Research." *College & Research Libraries* 44(Nov. 1983):469-75.
35. Kebabian, Paul. "The Distance to a Star: Subject Measurement of the Library of Congress and University of Florida Collections." *College & Research Libraries* 27(July 1966):267-70.
36. Lopez, Manuel D. "A Guide for Beginning Bibliographers." *Library Resources & Technical Services* 13(Fall 1969):462-70.
37. _____. "The Lopez or Citation Technique of In-Depth Collection Evaluation Explicated." *College & Research Libraries* 44(May 1983):251-55.
38. Nisonger, Thomas E. "An In-Depth Collection Evaluation at the University of Manitoba Library: A Test of the Lopez Method." *Library Resources & Technical Services* 24(Fall 1980):329-38; and _____. "A Test of Two Citation Checking Techniques for Evaluating Political Science Collections in University Libraries." *Library Resources & Technical Services* 27(April/June 1983):163-76.
39. Christiansen, Dorothy E., et al. "Guide to Collection Evaluation through Use and User Studies." *Library Resources & Technical Services* 27(Oct./Dec. 1983):432-40.
40. Broadus, Robert H. "Use Studies of Library Collections." *Library Resources & Technical Services* 24(Fall 1980):317-24; Burns, Robert W., Jr. "Library Use as a Performance Measure: Its Background and Rationale." *Journal of Academic Librarianship* 4(March 1978):4-11; Lancaster, F. Wilfrid. "Evaluating Collections by Their Use." *Collection Management* 4(Spring/Summer 1982):15-43; and Osburn, Charles B. "Non-Use and Loser Studies in Collection Development." *Collection Management* 4(Spring/Summer 1982):45-53.
41. Kent, Allen, et al. *Use of Library Materials: The University of Pittsburgh Study*. New York: Marcel Dekker, 1979.
42. McGrath, William E. "Circulation Studies and Collection Development: Problems of Methodology, Theory and Typology for Research." In *Foundations in Library and Information Science*, vol.10, pt.B, edited by Robert D. Stuart and George B. Miner, Jr., pp. 373-403. Greenwich, Conn.: JAI Press, 1980.
43. Nimmer, Ronald J. "Circulation and Collection Patterns at the Ohio State University Libraries, 1973-1977." *Library Acquisitions: Practice and Theory* 4(no.1, 1980):61-70.
44. Axford, H. William "Collection Management: A New Dimension." *Journal of Academic Librarianship* 6(Jan. 1981):325-26.
45. New, Doris E., and Ott, Retha Zane. "Interlibrary Loan Analysis as a Collection Development Tool." *Library Resources & Technical Services* 18(Summer 1974):275-83.
46. Systems and Procedures Exchange Center. *User Surveys and Evaluation of Library Services* (SPEC Kit no.71). Washington, D.C.: Office of Management Studies, Systems and Procedures Exchange Center, Association of Research Libraries, 1981.
47. Bonn, George S. "Evaluation of the Collection." *Library Trends* 22(Jan. 1974): 279-80.
48. Shaw, W.M., Jr. "A Practical Journal Usage Technique." *College & Research Libraries* 39(Nov. 1978):479-84.

Evaluation by Library Type

49. Lawrence, Gary S., and Oja, Anne R. "The Use of General Collections at the University of California: A Study of Unrecorded Use, At-the-Shelf Discovery, and Immediacy of Need for Materials at the Davis and Santa Cruz Campus Libraries." (Final Report. University of California Systemwide Administration, Office of the Assistant Vice-President—Library Plans and Policies, Library Studies and Research Division, 1980). (ED191490).
50. Kantor, Paul B. "Availability Analysis." *JASIS* 27(Sept.-Oct. 1976):311-19; and Saracevic, T., et al. "Causes and Dynamics of User Frustration in an Academic Library." *College & Research Libraries* 38(Jan. 1977):7-18.
51. Association of College and Research Libraries. "Draft: Statement of Quantitative Standards for Two-Year Learning Resources Programs." *College & Research Libraries News* 40(March 1979):70.
52. _____ . "Standards for College Libraries." *College & Research Libraries News* 36(Oct. 1975):279.
53. Goldstein, Marianne, and Sedransk, Joseph. "Using a Sample Technique to Describe Characteristics of a Collection." *College & Research Libraries* 38(May 1977):195-202.
54. Bolgiano, Christina E., and King, Mary Kathryn. "Profiling a Periodicals Collection." *College & Research Libraries* 39(March 1978):99-104.
55. Kim, David U. "OCLC-MARC Tapes and Collection Management." *Information Technology & Libraries* 1(March 1982):22-27.
56. Calhoun, John C., and Bracken, James K. "Automated Acquisitions and Collection Development in the Knox College Library." *Information Technology & Libraries* 1(Sept. 1982):246-56.
57. Townley, Charles T. "Using SPSS to Analyze Book Collection Data." *Drexel Library Quarterly* 17(Winter 1981):88.
58. Golden, Barbara. "A Method for Quantitatively Evaluating a University Library Collection." *Library Resources & Technical Services* 18(Summer 1974):268-74.
59. Burr, Robert L. "Evaluating Library Collections: A Case Study." *Journal of Academic Librarianship* 5(Nov. 1979):256-60.
60. Jenks, George M. "Circulation and Its Relationship to the Book Collection and Academic Departments." *College & Research Libraries* 37(March 1976):145-52; McGrath, William E. "Measuring Classified Circulation According to Curriculum." *College & Research Libraries* 29(Sept. 1968):347-50; and _____ . "The Significance of Books Used According to a Classified Profile of Academic Departments." *College & Research Libraries* 33(May 1972):212-19.
61. Shabowich, Stanley A. *An Approach to Assessment of Quality of a University Library Collection*. Hammond, Ind.: Purdue University, Calumet Campus Library, 1977.
62. Clarke, Jack A., and Cooklock, Richard M. "Book Selection—From Teachers College to University." *College & Research Libraries* 27(May 1966):222-24, 232.
63. Schad, Jasper G., and Adams, Ruth I. "Book Selection in Academic Libraries: A New Approach." *College & Research Libraries* 30(Sept. 1969):437-42.
64. Trochim, Mary Kane, et al. *Measuring the Circulation Use of a Small Academic Library Collection: A Manual*. Chicago: Associated Colleges of the Midwest, 1980.
65. Schwarz, Philip, and Olson, Linda. *Examination of Potential Management Decisions Based Upon a Core Collection Derived from Last Circulation Date Data*. Menomonie: University of Wisconsin—Stout, 1981.
66. Hardesty, Larry. "Use of Library Materials at a Small Liberal Arts College." *Library Research* 3(Fall 1981):261-82.
67. _____ . *Use of the Library Reserve Collection at DePauw University*. Greencastle, Ind.: DePauw University, 1980.
68. Ettelt, Harold J. "Book Use at a Small (Very) Community College Library." *Library Journal* 103(15 Nov. 1978):2314-15.

69. Schwartz, Ruth. "A Periodical Use Study." *Illinois Libraries* 60(Feb. 1978): 106-09; and Maxin, Jacqueline A. "Periodical Use and Collection Development." *College & Research Libraries* 40(May 1979):248-53.
70. Kusnerz, Peggy Ann. "Collection Evaluation Techniques in the Academic Art Library." *Drexel Library Quarterly* 19(Summer 1983):46.
71. Ferguson, Chris. *Evaluation of the Religion Collection*. Oxford: University of Mississippi, John Davis Williams Library, 1979; and Gallagher, Kathy E. "The Application of Selected Evaluative Measures to the Library's Monographic Ophthalmology Collection." *Bulletin of the Medical Library Association* 69(Jan. 1981):36-39.
72. Perk, Lawrence J., and Pulis, Noelle Van. "Periodical Usage in an Education-Psychology Library." *College & Research Libraries* 38(July 1977):304-08; Wender, Ruth W. "Counting Journal Title Usage in the Health Sciences." *Special Libraries* 70(May/June 1979):219-26; Johnson, Nancy P. "Legal Periodical Usage Survey: Method and Application." *Law Library Journal* 71(Feb. 1978):177-86; and Goehlert, Robert. "Periodical Use in an Academic Library; A Study of Economists and Political Scientists." *Special Libraries* 69(Feb. 1978):51-60.
73. Stenstrom, Patricia, and McBride, Ruth B. "Serial Use by Social Science Faculty: a Survey." *College & Research Libraries* 40(Sept. 1979):430.
74. Subramanyam, Kris. "Citation Studies in Science and Technology," In *Collection Development in Libraries: A Treatise*, edited by Robert D. Stuart and George B. Miller, pp. 345-72. Greenwich, Conn.: JAI Press, 1980; Fitzgibbons, Shirley A. "Citation Analysis in the Social Sciences." In *Collection Development in Libraries*, pp. 291-344; and Koenig, Michael E.D. "Citation Analysis for the Arts and Humanities as a Collection Management Tool." *Collection Management* 2(Fall 1978):247-61.
75. Popovich, Charles J. "The Characteristics of a Collection for Research in Business/Management." *College & Research Libraries* 39(march 1978):110-17; McCain, Katherine W., and Bobick, James E. "Patterns of Journal Use in a Departmental Library: A Citation Analysis." *JASIS* 32(July 1981):257-67; and Griscom, Richard. "Periodical Use in a University Music Library: A Citation Study of Theses and Dissertations Submitted to the Indiana University School of Music from 1975-1980." *Serials Librarian* 7(Spring 1983):35-52.
76. Satariano, William A. "Journal Use in Sociology: Citation Analysis versus Readership Patterns." *Library Quarterly* 48(July 1978):299-300.
77. Rice, Barbara A. "Selection and Evaluation of Chemistry Periodicals." *Science & Technology Libraries* 4(Fall 1983):43-59; Stankus, Tony, and Rice, Barbara. "Handle with Care: Use and Citation Data for Science Journal Management." *Collection Management* 4(Spring/Summer 1982):95-110; Usdin, B. Tommie. "Core Lists of Medical Journals: A Comparison." *Bulletin of the Medical Library Association* 67(April 1979):212-17.
78. Craig, Daza Fox, and Strain, Paula Meise. "Analysis of Collection Development at the National Library of Medicine." *Bulletin of the Medical Library Association* 68(April 1980):197-206.
79. Byrd, Gary D., et al. "Collection Development Using Interlibrary Loan Borrowing and Acquisitions Statistics." *Bulletin of the Medical Library Association* 70(Jan. 1982):1-9.
80. Schwartz, James H. "Technical Books: Appraisal of Selection Policy and Use by Creative Chemists." *Special Libraries* 65(Feb. 1974):58-60.
81. Del Frate, Adelaide A. "Use Statistics: A Planetary View." *Library Acquisitions: Practice and Theory* 4(nos. 3/4, 1980):248-53.
82. Wenger, Charles B., et al. "Monograph Evaluation for Acquisitions in a Large Research Library." *JASIS* 30(March 1979):88-92.
83. Wenger, Charles B., and Childress, Judith. "Journal Evaluation in a Large Research Library." *JASIS* 28(Sept. 1977):293-99.

Evaluation by Library Type

84. Bastille, Jacqueline D., and Mankin, Carole J. "A Simple Objective Method for Determining a Dynamic Journal Collection." *Bulletin of the Medical Library Association* 68(Oct. 1980):357-66; and Kamenoff, Lovisa. "Journal Usage at a Community Hospital Library." *Bulletin of the Medical Library Association* 65(Jan. 1977):58-61.
85. Thorpe, Peter. "Inter-library Loans Analysis for Journals Acquisition." *Aslib Proceedings* 31(July 1979):352-59.
86. Mosher, Paul H., and Pankake, Marcia. "A Guide to Coordinated and Cooperative Collection Development." *Library Resources & Technical Services* 27(Oct./Dec. 1983):418.
87. *Ibid.*, p. 429.
88. Goldstein, and Sedransk, "Using a Sample Technique," p. 201.
89. Gwinn, Nancy E., and Mosher, Paul H. "Coordinating Collection Development: The RLG Conspectus." *College & Research Libraries* 44(March 1983):129.
90. Potter, William Gray. "Studies of Collection Overlap: A Literature Review." *Library Research* 4(Spring 1982):4.
91. Knightly, John J. "Library Collections and Academic Curricula: Quantitative Relationships." *College & Research Libraries* 36(July 1975):295-301.
92. Cooper, William S., et al. "The Duplication of Monograph Holdings in the University of California Library System." *Library Quarterly* 45(July 1975):253-74.
93. Moore, Barbara, et al. "Title Overlap: A Study of Duplication in the University of Wisconsin System Libraries." *College & Research Libraries* 43(Jan. 1982):14-21.
94. Shaw, Debora, and Stockey, Edward A. "Contributions of Small Libraries to State-Wide Resource Sharing: A Study of Collection Overlap Through the INCOLSA Processing Center." *Public Library Quarterly* 1(Fall 1979):281-90; Davis, Charles H., and Shaw, Debora. "Collection Overlap as a Function of Library Size: A Comparison of American and Canadian Public Libraries." *JASIS* 30(Jan. 1979):19-24; Doll, Carol A. "Overlap Studies of Library Collections in Schools and Public Libraries." *Public Libraries* 21(Spring 1982):33-34; and _____. "School and Public Library Collection Overlap and the Implications for Networking." *School Library Media Quarterly* 11(Spring 1983):193-99.
95. Kronick, David A., and Bowden, Virginia M. "Management Data for Collection Analysis and Development." *Bulletin of the Medical Library Association* 66(Oct. 1978):407-13; and Dingle-Cliff, Susan, and Davis, Charles H. "Collection Overlap in Canadian Addictions Libraries." *Special Libraries* 70(Feb. 1979):76-81.
96. Orr, Richard H., et al. "Developments of Methodologic Tools for Planning and Managing Library Services." *Bulletin of the Medical Library Association*, pts. I, II, 56(July 1968):235-67; pt. III, 56(Oct. 1968):380-403; pt. IV, 58(July 1970):350-77; and Orr, Richard H., and Schless, Arthur P. "Document Delivery Capabilities of Major Biomedical Libraries in 1968: Results of a National Survey Employing Standardized Tests." *Bulletin of the Medical Library Association* 60(July 1972):382-422.
97. Goldhor, *A Study of Public Library Collections in the Humanities*.

This Page Intentionally Left Blank