DOCUMENT RESUME

ED 290 498 IR 052 270

AUTHOR Powell, Ronald R.
TITLE The Relationship of Library User Studies to Performance Measures: A Review of the Literature. Occasional Papers Number 181.
INSTITUTION Illinois Univ., Urbana. Graduate School of Library and Information Science.
PUB DATE Jan 88
NOTE 45p.
AVAILABLE FROM Occasional Papers, Graduate School of Library and Information Science, Publications Office, University of Illinois, 249 Armory Building, 505 E. Armory Street, Champaign, IL 61820 ($3.50 prepaid. Make checks payable to University of Illinois).
PUB TYPE Information Analyses (070) -- Viewpoints (120)

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS *Accountability; Evaluation Criteria; *Evaluation Methods; *Library Services; Literature Reviews; Performance Factors; *Program Effectiveness; User Satisfaction (Information); *Use Studies
IDENTIFIERS *Performance Measures

ABSTRACT

Arguing that user studies and performance measures provide two major approaches to evaluating the effectiveness of library services, this occasional paper presents an overview of the literature, examines the goals and approaches in user studies and performance measures, and provides suggestions for increasing the potential benefits of both by combining the two techniques. The resulting approach--performance measures based on user studies--is then discussed in terms of data collection, possible benefits, and limitations. It is concluded that: (1) valid procedures, i.e., measures that actually measure what they purport to measure, must be utilized by libraries to adequately evaluate their services; (2) libraries should be most concerned with measuring their ultimate product, performance or effectiveness, based on user data such as satisfaction; (3) a real need exists for libraries to be accountable for the effectiveness of their services; and (4) user-oriented performance measures provide a valid evaluation technique. (A 181-item reference list concludes the document.) (CGD)

University of Illinois
Graduate School of Library and Information Science

OCCASIONAL PAPERS

ISSN 0276 1769

Number 181
January 1988

The Relationship of Library User Studies to Performance Measures: A Review of the Literature

by

Ronald R. Powell

The Relationship of Library User Studies to Performance Measures: A Review of the Literature

by

Ronald R. Powell

Contents

INTRODUCTION

In 1980, Mary Jo Lynch, director of the Office for Research of the American Library Association, wrote: "For at least 10 years the public library community has been struggling to find practical methods of evaluating the effectiveness of public libraries."[1] But as Beeler stated in his work on the measurement of library service, "There is probably no measurement task which public servants face which is more difficult than that of measuring the quality of service."[2]

Within recent years, efforts to determine the quality of library services and or their effectiveness have taken at least two major approaches. One approach has focused on user studies. According to D'Elia, "public librarians have recognized that the planning and evaluation of library services must be predicated upon an understanding of the behavior of the library's constituencies."[3]

A second important approach to measuring the quality of library services has concentrated on measuring library performance. Efforts in this area were given a major boost in the 1970s by the work of DeProspo, Altman, and Beasley[4] and there has continued to be considerable support within the library profession for the consideration of performance. In 1982 the American Library Association published its *Output Measures for Public Libraries*;[5] and a second edition was published in June 1987. (Mary Jo Lynch, in a 1983 article,[6] discussed the relationship between DeProspo's *Performance Measures for Public Libraries* and *Output Measures for Public Libraries*.) In 1984, the Association of Research Libraries published a manual of performance measures for academic and research libraries,[7] and in 1985, an occasional paper focused on performance measurement for public services in academic and research libraries.[8] The Committee on Performance Measures of the Association for College and Research Libraries is currently developing plans for a performance measures manual for academic libraries.

At least one crucial question remains, however. What, if any, is or should be the relationship between user studies and performance measures? A review of the literature suggests that one important source of performance data is the library user. In other words, the performance of a library, measured in terms of how well it is meeting the needs of its users (and nonusers), is one of the most meaningful ways of judging the quality and effectiveness of a library's services. As Burns stated: "Users are essential to the basic mission of libraries and are the only data sets that contain both input [resource] and output [performance] measures of system activity."[9]

Therefore, what follows are overviews of user studies and performance measures and suggestions for maximizing the potential benefits of both by combining the two techniques.

USER STUDIES

"The literature of user studies is large and varied. It ranges in complexity from detailed research investigations, which model how a user gathers information, to the most elementary, inhouse, descriptive studies of a single library."[10] One of the best known, and still most important, of the national user studies was conducted by Campbell and Metzner and was published in 1950.[11] In 1978 the Gallup organization reported the results of a national survey of library users[12] and it has conducted another survey of library use more recently. In addition to the various national studies, many user studies have been conducted for states, regions, and local communities.

Identification of the many user studies has been aided by the availability of several bibliographies. Among them are publications by Albright, Atkin, Bates, Davis and Barley, Ford, The International Federation for Documentation, Lubans, Slater, and Wood.[13] In addition, the *Annual Review of Information Science and Technology* has included a summary and bibliography of the previous year's activities relating to user studies. A useful summary of the findings of several major user studies was published by Zweizig and Dervin in the 1977 volume of *Advances in Librarianship*.[14]

Further confirmation of the growing interest in library user studies was provided by Lancaster in his book on the measurement and evaluation of library services. He pointed out that library surveys are shifting their emphasis toward the library user, patterns of library use, and the degree to which user needs are being met.[15] In an *Occasional Papers* published by the University of Illinois in 1983, Clark identified new approaches to the measurement of public library use and presented a "model for public librarians who wish to study the patterns of use by individuals in their libraries."[16]

Evidence that libraries other than public libraries are becoming increasingly interested in their users was provided by 1976 and 1981 SPEC Kits published by the Association of Research Libraries.[17] Both publications were devoted to user studies of university libraries, and the 1976 kit noted that a fairly large percentage of user surveys had been employed, in part, "to evaluate library services in terms of user response to those services."[18] In

addition, there have been several articles published within the last few years discussing academic library user studies.[19] Nor are special libraries an exception to this trend. The previously mentioned summary of user studies appearing in the *Annual Review of Information Science and Technology* is generally concerned with the information needs and uses of scientists and technologists in special library settings.

Unfortunately, as Line has noted, "The literature on 'user needs' has been confused by imprecise use of terms."[20] Not only have various authors provided, or at least implied, different meanings for the same terms, but some writers have tended to use, interchangeably, terms that in fact have different meanings. Two of the terms most commonly confused have been "use" and "user." Zweizig, in a 1977 article, outlined three conceptual approaches to the measurement of library use.[21] The first concept he defined as *use*—i.e., internal library activities such as circulation. The second concept he identified as the *user*, representing a shift in focus from the library activity to the library patron. He defined the third concept as *uses*, suggesting a shift in emphasis from the patron to the external use that the patron makes of the library's resources. In the same article, Zweizig pointed out that there had been relatively few studies that had restricted their attention to the actual user, as opposed to considering use as well.[22] D'Elia, in an article published in 1980, also shed some light on the distinction between user studies and use studies.[23] He defined user studies as those studies concerned with the characteristics of users (and nonusers). He defined use studies as investigations of the nature and extent of the library materials and services used by patrons.

At this point, it appears reasonable to define library *use* as those activities which occur primarily within the library and which reflect rather traditional library functions such as circulating books and answering reference questions. According to D'Elia, it might be useful to categorize the basic types of use as (1) frequency of use, (2) intensity of use, and (3) in-house use.[24] And it would no doubt be profitable to heed the advice of Dervin, who suggested that librarians consider the types of situations that result in people using libraries and their resources.[25]

However, this paper is more concerned with *user* studies than with *use* studies. As Ford has written: "Of more use [than library use surveys] are the studies of people's information needs and information seeking behavior, particularly where these are based on what actually happens rather than on people's opinions of what might happen."[26] In other words, "user" studies should focus not on what *libraries* do, but on what *people* do, or wish they could do if they could obtain the necessary information.[27] It is important

"that user studies distinguish between an evaluation or measurement of the success of a service and any analysis or measurement of the use of that service."[28] In attempting to place user studies in perspective, one might consider the scheme outlined by Ford. He referred to: (1) information transfer, (2) information need, (3) information use, (4) information relevance, and (5) information users.[29] It is this fifth component that most concerns us here.

User studies generally have fallen into one of two categories—in-house surveys of users and community analyses, which usually consider both library users and nonusers. While the emphasis here is on the latter type of "user" study, there is considerable support within the library profession for studies which concentrate on actual users. In 1981, Thomas Ballard was arguing in *American Libraries* that public libraries should focus on users, not nonusers. He contended that: "When suggestions for improvement have been offered [by nonusers], they are not the innovative suggestions librarians seek but rather more of traditional library services—more books, longer hours, or better parking."[30] Others have argued for many years that public libraries, with their limited budgets, cannot possibly serve well all members of their communities, so they should concentrate their resources on current users.

The purpose of in-house surveys of users received attention in the Public Library Association's *A Planning Process for Public Libraries*. Its authors stated: "The primary purpose of an in-library or user survey is to determine who uses the library, how much, and for what, and to ask users about their attitudes toward and perceptions of the library."[31] Burns, in effect, categorized this information as demographic data, preferential data (e.g., reading preferences), and behavioral data (time and length of library visit, etc.).[32] He also proposed several measures of user satisfaction, including: the proportion of "hits," the users' perception of the library, circulations per type of user, success in having reference questions answered, and document delivery time.[33] *A Planning Process for Public Libraries* suggested collecting user data on: characteristics of the users, their purposes for using the library, services used and subsequent level of satisfaction, reasons for any dissatisfaction, materials used and their availability, users' search patterns, additional library services needed as perceived by users, and priorities assigned to services by users. According to *A Planning Process for Public Libraries*, the information generally derived from a community analysis tends to provide two basic profiles—one of the library's environment and one of the library's population—and this information can be quite diverse

in nature. For example, some of the basic types of data that can be obtained from a citizen survey include:

1. attitudes toward the public library and its role,
2. individuals' satisfaction with library services,
3. information regarding nonusers,
4. identification of library materials used, and
5. demographic characteristics of users and nonusers

Additional information potentially gatherable includes

1. citizens' perceptions of their information needs,
2. citizens' perceptions and attitudes regarding their public library,
3. their awareness of library services,
4. citizens' evaluations of their access to the library,
5. their perceived reasons for not using their library,
6. alternative sources of information,
7. reactions to library policy changes, and
8. the geographical locations of both users and nonusers.[34]

Ford, in his work on user studies, identified "systems" to which users tend to belong. He labeled these as cultural systems, political systems, membership groups, reference groups, invisible colleges, formal organizations, project teams, the individual, legal economic systems, and information marketplaces.[35] Some of the best known community analyses were directed by Lowell Martin.[36] Other analyses reported in the literature include studies conducted by Carpenter, Chen, and Joyce.[37]

Data Collection

Both types of user studies discussed thus far have employed a variety of data collection techniques and tools, but "the questionnaire and interview are still predominant. . ."[38] On the other hand, newer techniques, such as modeling, are beginning to have some impact on the design of user studies. D'Elia, for example, maintained the importance of a priori model building in user behavior research.[39] He pointed out the need for an understanding of the complex behaviors associated with use. He also stated that models might suggest possible courses of action that a library could take to try to influence user behavior.

Additional techniques applicable to user studies have been identified by Burns as including the RAM device, field studies involving direct observation, the critical incident technique, and citation counting.[40] Ford proposed measuring the use of documents by collecting data on loans, requests, citation analyses, solution records (a type of diary), social and

demographic characteristics, past research, holdings, diaries, and content analyses. In addition to records relating to documents, he suggested utilizing observation, questionnaires, and interviews to collect data.[41]

Lancaster noted that the various library survey techniques have included the utilization of diaries, operations research, questionnaires, interviews, documentary analysis, checklists, evaluation visits by experts, statistics, records, and standards.[42] Basically two types of methods were put forth by PLA's *A Planning Process for Public Libraries*; they involve the use of interviews (particularly exit interviews) and questionnaires (either self-administered or distributed and collected by library staff members).

Regardless of the specific techniques or tools employed, user studies have tended to reflect certain basic assumptions. Burns's assumptions included the following.

1. Users and their reactions to the library are the key to high quality service.
2. A user study should consider users both in the aggregate as statistics and in the particular as individuals.
3. A user study should consider both users and nonusers.
4. A user study should be an ongoing process.
5. The particular instruments or tools used should describe user response in a variety of ways in one or more formats (descriptive narratives, scaled responses, etc.)
6. A detailed analysis of the library's community or environment is essential.
7. It is particularly difficult to determine causal relationships.
8. It is feasible to measure and quantify the impact of libraries on the educational process.
9. An indication of quality can be derived from quantitative measurement.[43]

Possible Benefits

But what of the goals and objectives of user studies? What are the benefits that librarians hope to realize? Quoting Burns once again,

> The goal of use/user studies is the discovery, articulation, understanding, influencing, and, when appropriate, the elimination or at least minimization of those obstacles between a user and his information goals. These obstacles are found in the social, institutional, geographical, temporal, and organizational or procedural space separating a user from the item or information that will satisfy his need.[44]

Or as stated succinctly by Zweizig and Dervin: "User-oriented program planning is required to provide more responsive, accountable service. But user-oriented program planning requires understanding of the subpopulations to be served."[45]

Ford argued that the major aim of user studies is to assist in the design and improvement of information systems and proceeded to identify the following specific objectives and benefits:

1. greater understanding of the processes of information transfer;
2. improvement of information transfer and the organization of communication;
3. modification of circulation services;
4. more information about print readability;
5. determination of the relationship between user performance and various types of catalogs, etc.;
6. more information regarding users' work habits; and
7. more awareness of the possible applications of user information to administrative problems and decisions relating to budgeting, staffing, etc.[46]

Busha and Harter, in their text on research methods, noted that user studies are needed to justify and expand library services and usage and to learn more about how people communicate. More specifically, they stated that user studies are needed to: predict library usage; determine why people do or do not use libraries; identify what groups borrow which kinds of materials; identify what groups use which services; suggest how use can be encouraged; explore how urban, suburban, and rural use patterns differ; measure the effects of mass media on library use; and identify actual needs.[47] *A Planning Process for Public Libraries* indicated that user surveys can provide information about the proportion of the total population using the library, the proportions of population subgroups using the library, user/nonuser awareness of services, the levels of and reasons for user dissatisfaction, unmet needs, types of materials used, and the reasons why individuals use various resources.[48] And last, but not least, as implied by some of the many benefits just itemized, user studies can measure, at least to some extent, user satisfaction with existing library services. The potential importance of this kind of information was emphasized by Kantor in a 1976 article in which he argued that one of the strongest indicators of the transmission and growth of knowledge is the library users' judgment or satisfaction.[49] Experts do not agree, however, on the validity of user satisfaction as a criterion for measuring library performance, and this issue will be discussed further later.

While the list of potential benefits is no doubt greater than the actual benefits gained thus far from user studies, librarians and others have made substantial additions to their knowledge of library users. Some of this information might well be considered to be [illegible]ial to various local situations, other information seems to repre[illegible]ier broad principles

Ford, for example, summarized some basic principles of user behavior as follows:

1. Users of information belong to identifiable groups with characteristic patterns of information requirements.
2. The role of the user is an important determinant of his or her information need.
3. Accessibility is a key factor affecting the use of an information source.
4. User awareness of, and ability to use, information sources is often imperfect.
5. Interpersonal communication is one of the most important means of transmitting information
6. The amount of information required varies considerably among individuals.
7. Users often require information to be supplied on short notice, regardless of the availability of such information [50]

On the other hand, there is still much that we do not know about library users and their information seeking behavior. User studies have not yet answered all of our questions. Most of the research concerning users has tended to be descriptive in nature and has not measured adequately concepts such as user satisfaction [illegible]ect: "It is clear that, with the exception of education, demographic variables have proven of little value in predicting why adults use libraries."[51] Zweizig and Dervin also pointed out the inadequacy of purely descriptive measures in stating that: "The number of users in the library is a measure of library activity, but it is questionable whether it is a measure of library effectiveness."[52] In Altman's book on public library administration, Zweizig pointed out that: "Community analysis will not result in direct identification of community information needs."[53]

Limitations

What are the problems that, thus far at least, have resulted in the inability of user studies to fully measure library effectiveness? No doubt there are several, but some of the concerns raised by Burns are worth considering:

1. It is unlikely that contemporary public libraries can meet adequately all of the demands being placed upon them, but how to measure this

shortfall and how to determine an acceptable level of shortfall are difficult problems to resolve.
2. Different classes of users tend to place different demands on the public library.
3. A small percentage of a library's potential clientele accounts for most of its use.
4. The degree of similarity between information-seeking behavior and their relationship to the process of communication have not been fully determined
5. Further exploration of the effect of the principle of least effort on the user and his/her information-gathering behavior is needed
6. More research is needed on institutional differences and similarities and their effect on user activities and behavior.[54]

Other potential limitations of user studies have been identified in the literature as well. The DuMonts pointed out the importance of measuring the impact of a changing environment in that the library must "interact with individuals and its communities in a variety of ways over time."[55] White noted that "user studies that simply ask patrons what they want or how well they like what has been provided evoke only a self-fulfilling prophecy. People state an expectation for what they have gotten in the past and for what they think is reasonable to expect in the future."[56] Ford stated that: "There has been a strong tendency in all user studies to equate use with value. There are a number of objections to this ..."[57] Wilson commented that one of the most neglected areas is the study of information use and exchange.[58]

Zweizig pointed out that user studies have been limited by the fact that they have not measured the library's actual contribution—i.e., how the patron uses the library's resources and services and what their value is to him or her.[59] Similarly, Harris and Sodt concluded that traditional user studies have accomplished about as much as they can and we need, for example, to try to determine the value users derive from library use.[60]

PERFORMANCE MEASURES

In light of the apparent limitations of user studies in evaluating the real effectiveness of public libraries, some librarians in recent years have turned to other evaluative techniques. In fact, Knightly identified five classes of evaluation—(1) effort evaluation (inputs), (2) process evaluation, (3) effectiveness evaluation (outputs), (4) impact evaluation, and (5) cost-effectiveness and cost-benefit.[61] The third mentioned category, effectiveness evaluation, has received considerable attention and has often been referred to as performance measurement or output measurement.

But what exactly is meant by performance measurement or measures and how do they differ from other types of evaluation? In a letter to Robert Burns, Maryann K. Brown pointed to one important distinction between measures of performance or outcomes and measures of activity: "Activity measures indicate the level or amount of various kinds of activities within the library (e.g., counts of the numbers of items produced, of the numbers of reference questions received, numbers of patrons served, etc.). On the other hand, outcome measures serve to indicate what was accomplished (what purpose or objectives were achieved) as a result of this programmatic activity."[62]

However, as has been pointed out by Philip Morgan: "Output can only be achieved by some input of resources,"[63] and he defines input as "the volume of resources of labour, land, time, finance, etc. that contribute to the achievement of outputs."[6] Yet, "performance measures focus on indicators of library effectiveness and output rather than input alone, and are closely related to the impact of the library on the community."[65] Or as was similarly stated in *A Planning Process for Public Libraries*: "Performance measures are distinguished from library statistics in that the former focus on library effectiveness, that is, adequacy of performance, and on the impact of the library on its community."[66] Elsewhere, output measurements have been defined as indicators of:

1. the degree to which an organization meets the needs of its community,
2. the extent to which an organization achieves its objectives,
3. the effectiveness of an organization, and
4. the impact of the activities of an organization on its community.[67]

Schrader defined performance measures as a type of consumer or market research with the emphasis on performance for the user.[68] Blasingame and Lynch indicated that output simply represents what the user gets from a library.[69] Hamburg and others stated that: "The real outputs of library service are the stimulated student or teacher, the scientific discovery, the informed voter, the successful businessman, etc."[70] Others have pointed out that the concept of "need" is implicit in performance measurement and have emphasized the importance of evaluating how well it is being met.[71] This concept raises the issue of user satisfaction once again.

A term quite similar in concept to performance, as used by Orr, is *goodness*. He considered goodness to have two basic aspects which are represented by two questions: "How good is the service?" and "How much good does it do?"[72] Or in other words, what are the quality and value of the library's services?

Previous Studies

Unfortunately, as noted by Lowell Martin "Studies of how libraries are used, and with what success, have been less frequent than the who, what, when, and where variety."[73] Parker wrote that: "Most of the substantive research has been conducted and the results reported in the literature since 1968."[74] She went on to comment that most of the research studies ha not been cumulative—i.e., they had not built on previous studies. Rather, most of them had been project-oriented. Much of the reported research indicated a tendency to treat the library as an isolated entity and to ignore its relationship to the larger information complex in terms of its ability to provide information and documents.

On the other hand, there has been considerable support for, and activity related to, performance measures within the last several years. The *Public Library Mission Statement...* emphasized the importance of measuring output, as well as input, but at the same time acknowledged that: "The social indicators to measure library output have yet to be defined."[75] *A Planning Process for Public Libraries* also devoted considerable attention to performance measures.

But as was noted earlier, the major impetus for the growth of interest in performance measures was the work done by DeProspo, Altman, and Beasley resulting in the publication of *Performance Measures for Public Libraries* in 1973. With regard to the rationale for the research resulting in this work, DeProspo stated: "Few antecedent approaches [studies] exist which the public library can utilize fruitfully in developing innovative approaches to measuring the performance of the services it offers its public."[76] He also noted that a survey of public librarians had revealed that many of them distrusted statistics as measures of effectiveness, and that they wanted more data that were people or user-oriented. Or as Gerald Born stated in the introduction: "New measures recognizing the satisfaction of the user and a more adequate evaluation of library service were needed."[77]

This need was recognized by the authors who stated that the primary purpose of their study was "to develop meaningful indicators of performance which could be used by library administrators to assess the effectiveness of their operations."[78] The three basic areas that they considered were collection availability, activity level of library services, and characteristics and satisfaction of users.

The research that resulted in the DeProspo publication was conducted at the Bureau of Library and Information Science of Rutgers University and

was supported by a grant from the U. S. Office of Education. The Rutgers group conducted a review of the related literature and analyzed the then current library statistical reporting systems. The rest of the project consisted of: (1) the development of public library effectiveness criteria, (2) the design of a methodology for the collection of appropriate criteria data, (3) the collection of data in a group of pilot study libraries, (4) the establishment of tentative ranges of performance, (5) the testing of the criteria and methodology in a national sample of public libraries, and (6) the preparation of a "profile" for each of the sample libraries.

Following the initial Rutgers project, a performance measures study was conducted by the North Suburban Library System of Illinois. This study used the same basic methods of data collection as were used by DeProspo, but the group of libraries participating in the Illinois project included a greater percentage of small libraries.

In 1974, the Library Research Center of the University of Illinois was funded by the Illinois State Library for the purpose of testing the data collection techniques which had been developed at Rutgers and which had been incorporated into a performance measures manual—*Performance Measures for Public Libraries: A Procedures Manual for the Collection and Tabulation of Data.*[79]

The Illinois project involved a sample of 78 public libraries representing major budget categories and geographical areas within the state. The Library Research Center conducted several workshops for the purpose of instructing participating librarians in the use of the performance measures manual. Participating libraries carried out three-day performance evaluations, tabulated and summarized their data, and returned their results to the Library Research Center for further analysis. The center subsequently analyzed the data, prepared profiles for the libraries, and submitted a final report to the state library describing its experiences with the project and evaluating the performance measures manual.[80] Other observations based on the Illinois study were reported by Goldhor in a 1978 article.[81]

In the meantime, a revised version of the Rutgers performance measures manual was used by Ellen Altman in an evaluation of the St. Petersburg, Florida, public libraries.[82] (Altman later published a performance measures manual which represented a revision of the original Rutgers manual.)[83]

During this same period, the Bureau of Library and Information Science was funded by the New Jersey State Library for the purpose of testing the

reliability of the measurement techniques developed for the initial manual, developing additional measures of library service availability in New Jersey, implementing a program to train New Jersey library personnel in the use of performance measures, and investigating the feasibility of incorporating the measures into a statewide statistical reporting system.[84]

Since then, several public libraries have conducted performance evaluations utilizing, to some degree, the techniques presented in the DeProspo and Altman manuals. Examples of such studies cited in the literature include ones reported by Fairfield, Gregory, McKenzie, Crane, and Ramsden.[85] These evaluations, as a result of being based on the original DeProspo work, tended to concentrate on measuring materials availability, circulation statistics, building usage, patterns of reference usage, facilities usage, public service personnel, and user satisfaction. As this listing indicates, DeProspo's measures tended to emphasize levels of activity rather than the users themselves. On the other hand, DeProspo's manual did provide for collecting to some extent all of the types of "user" data identified by Morgan. These included type of user, type of use, frequency or intensity of use, and quality of or satisfaction with service.[86]

But given the types of information that performance or output evaluations could measure, these earlier studies did not incorporate all of them by any means. For example, the authors of *A Planning Process for Public Libraries* stated that: "Three kinds of information contribute to the evaluation of the library's current performance: the statistics that most libraries keep routinely; responses on the citizen, user, staff, and student surveys; and measures of the library's achievements relative to specific objectives or services, that is, performance measures."[87] The authors then specified these measures of performance as:

1. overall citizen satisfaction with the library's services,
2. perceptions of nonusers regarding the library,
3. numbers of registered borrowers or users,
4. service area penetration (proportion of citizens who use the library),
5. user satisfaction,
6. user service hours,
7. level of use of facilities and materials,
8. in-library circulation statistics,
9. circulation outside the library,
10. availability of materials,
11. time delays in obtaining materials,
12. reference service use,
13. the attractiveness and accessibility of facilities,

14. staff availability, and
15. staff attitudes

In contrast, Schlukbier identified those areas which can be explored by performance measurement as including staff evaluation, space utilization, collection evaluation, growth projections, measurement of advertising impact, utilization of staff, effectiveness of scheduled operating hours, and cost-benefit analysis.[88] (At a glance, Schlukbier's criteria appear to be less user-oriented than do those presented in the PLA work.) Grayson and Wingate, in an article on performance measurement in libraries, argued that user satisfaction is the key to measuring the effectiveness of a library and contended that circulation is the single best measure. They did note, however, that circulation figures must be related to the population served in order to be meaningful—that is, the best measure is the percentage of the population using the library.[89]

An additional approach to performance measurement was espoused by Hamburg, and others, who argued that the most meaningful type of performance measure is user exposure to documents. Hamburg identified three types of document exposure measures: exposure counts, item-use days, and exposure time.[90]

A 1975 publication of the Library Association provided yet another classification of output measures. This work first defined depth, or breadth, of service as the impact of the library service in the community. It then divided this impact into intermediate output (service currently provided) and final output (the effectiveness of the service, possibly measured in use), and finally, it identified various output measures, including:

1. the number of users,
2. community survey data (who is using the library and why or why not, user awareness of library services, patron attitudes, etc.),
3. quantitative analysis of circulation,
4. qualitative analysis of circulation,
5. reference use,
6. reader satisfaction (materials availability, attitudes toward staff and facilities, retention of registered borrowers),
7. extramural activities (lectures, concerts, etc.),
8. service to housebound readers, and
9. staff output.[91]

Kantor, in his manual of performance measures for academic and research libraries,[92] described three measures—availability of library materials, accessibility of library materials, and delay analysis of specific activities. A

fourth measure, analysis of patron activity, was tested but not included in the manual. Zweizig and Rodger's *Output Measures for Public Libraries*[93] included twelve performance measures identified as: (1) circulation per capita, (2) in-library materials use per capita, (3) library visits per capita, (4) program attendance per capita, (5) reference transactions per capita, (6) reference fill rate, (7) title fill rate, (8) subject and author fill rate, (9) browsers' fill rate, (10) registration as a percentage of population, (11) turnover rate, and (12) document delivery.

Data Collection

A variety of techniques and tools have been employed to measure the various performance indicators. Among the methods of measurement discussed in the literature is the collection of statistics.[94] Statistics have been used to compare past and present use of a library, to compare one library's situation with another's, and to measure performance with regard to predetermined standards.

Other studies have utilized questionnaires and or interviews. These tools are particularly useful for measuring final output or impact and are often used in conjunction with a community analysis to assess the impact of particular library services. A few studies have used formulas or models that can consider the variables that influence performance.

The DeProspo study employed a "user ticket" which was in effect a short questionnaire. It queried the library user regarding his or her gender, student status, occupation, whether or not he or she requested staff assistance and was a registered borrower, and general satisfaction with the library's materials. However, Schlukbier wrote in 1978 that: "Any library that decides to change its library hours or staffing ratio based on data gathered from a six-question 'user ticket' is asking for problems."[95]

Other performance measurement techniques which have been used, or at least proposed, include: (1) measuring the time required to respond to inquiries in relation to the appropriateness of the information found; (2) tape recording telephone reference interviews;[96] (3) observing patrons in their use of the library; (4) making tallies of reference and circulation activities; and (5) surveying library users, the entire community, and the library staff.[97]

Measuring the Quality of Library Service has a lengthy section devoted to "measuring techniques."[98] Some of the techniques illustrated there include interviews, questionnaires, critical-incident techniques, consumer

panels, unobtrusive reference questions, diary surveys, turnstile counts, self-evaluations, document delivery tests, operations research, and measurement of materials availability.

With regard to criteria for selecting and using appropriate performance measurement techniques, *A Planning Process for Public Libraries* recommended that all objectives must first be measurable and then suggested certain criteria as an aid in designing methods of measurement. The authors indicated that they were most interested in methods that were flexible, fairly simple, applicable for both one-time use and periodic evaluations, and preferably already tested.[99] Schlukbier contended that: "Both quantitative and qualitative measuring techniques are required to concretely express a library's performance."[100] With regard to quantitative measures, Howard and Norman noted that statistics must be analyzed regularly and must be used as an integral part of the decision-making process in order to be effective.[101] Mary Jo Lynch, in discussing the original DeProspo study, noted the desirability of developing criteria which appear descriptive of the effectiveness of a public library program.[102] And finally, Orr provided several desiderata for measures of his "goodness of library services" concept. These were: (1) appropriateness of the measure, (2) informativeness, (3) validity, (4) reproducibility, (5) comparability, and (6) practicality.[103]

On the surface, the variety of criteria for effective performance measures seems to be almost as great as the variety of measures themselves. On the other hand, a closer examination of the criteria just discussed seems to indicate considerable overlap in terms of what the criteria suggest is desired of performance measures. The major requirements of the measures apparently can be summarized as reliability, validity, and utility

Possible Benefits

But what of the benefits to be gained from measuring the performance of a library? Why are more and more librarians, as well as other public service personnel, interested in performance measures? The term that has surfaced most frequently in connection with measuring performance has been *output*. It has been pointed out by many that for evaluation purposes it is not adequate merely to measure input or the resources such as books, personnel, and equipment that are funneled into a library. Rather, in order to obtain a meaningful evaluation of a library's resources and services, it is necessary to evaluate or measure how well the library performs with these resources. Or in other words, how effectively does the library serve its community?

Just as there is no consensus on what activities can be evaluated with performance measures nor on what techniques and tools can be used to measure performance, there is a lack of agreement over potential benefits of performance measurement. Yet there is little disagreement with those who contend that performance measures do have much to offer the library administrator. DeProspo, for example, wrote: "Armed with such information [performance measures], the administrator should be able to make more judicious use of time and materials and have a factual basis on which to plan and make budget allocations."[104]

Howard and Norman, in their article on measuring public library performance, described their Complete Service Statistics (CSS) as an inventory of all output reflecting user contact such as lending services, facilities services, information services, production services, and staff services. They then identified some of the benefits that they expected to realize from collecting CSS, or output measures, as follows:

1. Decision-making can now be based not only on past experience, intuition, and guesswork but also on accumulated performance measures.
2. Complete Service Statistics can provide data for cost-benefit analysis.
3. Performance-type data can reveal trends, changes, and directions in the system or in the community; objectives can be reviewed in light of any changes, and appropriate administrative action can then be taken.
4. Accountability to the funding source and the community at large can be improved by such data.
5. Having output-type information tends to improve the administrator's ability to predict future trends, needs, etc.[105]

Schrader expanded on the benefits to be gained by decision-makers in pointing out that they should: (1) have more quantitative knowledge of library use and users at their disposal; (2) be in a better position to compare their library with others; (3) be better able to interpret their library's performance in terms of quantified library objectives; (4) be better equipped to develop an effective public relations program; (5) have available the type of data often needed for "political purposes"; (6) be more effective in designing library instruction aids such as signage; (7) be able to improve their acquisitions decisions and timing by making seasonal comparisons; (8) have a greater chance of scheduling equipment repairs, etc. at times when they should cause the least disruption in services; (9) be in a more insightful position for developing new library services; (10) be able to schedule staff most effectively; and (11) have available library performance

measures which to some extent should reflect library management performance.[106] Other reasons given for measuring output or performance have related to:

1. gauging the effectiveness of alternative strategies,
2. monitoring the consequences of varying the allocation of resources,
3. charting progress toward the achievement of objectives,
4. assessing needs not being met,
5. providing information which leads to better use of input,
6. providing the rationale for changes,
7. identifying social benefits that may accrue, and
8. analyzing the impact of public issues.[107]

Oddly enough, none of the just cited lists directly referred to the determination of user satisfaction as an important benefit to be gained from measuring performance. Perhaps it was considered to be implicit in many of the specific benefits identified, however, for Schrader stated that: "From a conceptual standpoint the new methodology considers user satisfaction to be both the ultimate test of library effectiveness and, hence, the main predictor of the extent of future library use."[108] Zweizig and Dervin, citing an earlier work by Paisley and Parker, argued that user satisfaction is an important criterion for the evaluation of a system.[109]

Limitations

Yet, in spite of the fact that performance evaluations often consider user satisfaction, and in spite of the fact that DeProspo felt justified in saying that performance measurement "comes much closer than present statistical reporting systems to providing user-oriented indicators,"[110] some critics believe that many, if not most, performance measures have not placed enough emphasis on the user but rather continue to emphasize the measurement of input and or level of activity. Powell, for example, following the Illinois test of the original Rutgers manual, wrote that, "the performance measures manual.. took a rather traditional approach to the evaluation of public library services."[111] Goldhor later wrote. "In regard to content, one can only be impressed by the richness of these measures in comparison with the traditional counts of total circulation, attendance at library programs, number of registered borrowers, etc."[112] "At the same time one can only hope that there will be explorations of new and different measures, particularly in regard to user satisfaction."[113]

In fact, the ability to measure user satisfaction accurately continues to be elusive. In 1977, the techniques presented in *Performance Measures for Public Libraries* were used in the evaluation of the public library of

Brampton, Ontario. Schrader, in discussing this application of DeProspo's performance measures, indicated that some meaningful results were achieved, but he also noted that the performance measures basically measured use and only indirectly measured user satisfaction. Or stated differently, most of the performance measures "describe and quantify the usage of materials and services by patrons, and it is from these indicators of usage that we can make inferences (cautiously) about overall user attitudes."[114]

Why has it proven so difficult to measure user satisfaction? According to Evans and others, there are certain problems with employing user satisfaction criteria to measure library performance. Among these problems is the fact that a strong subjective element is always present when one asks a library user to judge his or her satisfaction with library services. They also pointed out that measuring user satisfaction requires extensive testing of measures, training of personnel, etc. In addition, we have not yet determined what we actually mean by "relevant" with regard to the patron's use of the library. And we are still plagued by the old problem which we so often have to deal with in survey research—low response rates. Yet they continued to argue that, "user satisfaction must be considered one of the primary measures of library effectiveness."[115]

Researchers also continue to be faced with a lack of knowledge regarding the variables that affect and indicate user satisfaction. For example, Crane found in his study, and others, that the larger the library, the lower the level of user satisfaction. He hypothesized that users probably expect more of a large library than they do of a small one.[116] Other research similarly has concluded that library users tend to be more satisfied with smaller collections, as opposed to very large ones, probably because of lower expectations and because they find smaller collections easier to work with

D'Elia and Walsh, in a 1983 article,[117] concluded that user satisfaction is potentially useful for evaluating the performances of services within a library but is not valid for comparing libraries unless demographic characteristics of the users can be controlled. In a report of a follow-up study, they noted that changes in the collections and services in a library may not be perceived by patrons and the use of data collected from patrons for assessing the performance of libraries may be of questionable value. On the other hand, as the authors concluded, it could be that "we have not been asking the right questions, or user behavior is so idiosyncratic that there very well may not be a parsimonious explanation."[118]

D'Elia, in a 1985 issue of *Public Libraries*, reported "that the data obtained from the materials availability surveys of *Output Measures for Public*

Libraries are apparently useless indicators of library performance."[119] He based this conclusion, in part, on his finding that none of the patron search success rates and none of the fill rates was significantly correlated with any of the available per capita measures of library resources for the St. Paul Public Library system—his test site. On the other hand, in an article in the same journal, Van House stated that *Output Measures for Public Libraries* is a useful tool for library management. "It provides library managers with measures and methods that, while imperfect, are practical and useful."[120] In another article published the next year she concluded "The measures defined in *OMPL* that are being used do seem to be valid measures of library performance."[121]

As was indicated earlier, a measure which has been used for some time to evaluate library performance has been library use. Yet Evans and others contended that "the units measured have not been very precise or meaningful."[122] They stated that there are problems in employing "use" criteria in that: (1) they fail to distinguish between significant and insignificant use, (2) they seldom measure in-house use, (3) they are susceptible to radical variations, and (4) they fail to reflect the needs of potential users.[123]

Another problem with relying on use as a performance measure is related to the fact that use often is measured in terms of volume only. "Measures which tell us that fewer people are using the library service but which do not indicate a need for such things as more books, different books or more libraries, are of little use to the decision-maker."[124] Or in other words, performance measures too often do not provide the kind of information needed to evaluate and improve services. Grayson and Wingate, for example, concluded that "As a measure of effectiveness, a gross circulation figure gives little indication of how well the 'information' function is being performed."[125] (And the same holds true for the recreational and educational functions.)

Other limitations in employing use statistics as performance measures have included the fact that too little information is gathered on library use in relation to the full potential and on library use which lies outside the primary service area. In addition, use data often have not been broken down into meaningful categories.[126] In a paper presented at the 1985 IFLA Conference, O'Connor went so far as to say that since output measures are beyond library control, their use as a measure of library performance may be questioned.[127] Yet he also stated that output measures result from characteristics of the user population (rather than library activity) and that library output is influenced more by user characteristics than library input. Once again, a theme that seems to appear is that if output measures are

going to be valid indicators of library performance, they must adequately incorporate appropriate user data. That issue will be addressed in the next section.

PERFORMANCE MEASURES BASED ON USER STUDIES

Before dealing with the relationship between user data and output measures, the question of what we want performance indicators to measure should be resolved. In other words, what concept best represents a library's performance? The answer may be "library effectiveness." As has been stated in the literature, it may well be that "the final output of a library system is the effectiveness of the service."[128] But what is meant by "library effectiveness?" Redfern stated that: "Effectiveness may be defined as the extent to which a service can be said to meet the needs of the community, that is, both expressed and unexpressed needs that relate to library purpose."[129]

The DuMonts contended that, "Librarians have yet to arrive at a clear meaning for the phrase 'library effectiveness.' Although many library researchers write of evaluation and performance measures, they generally don't equate such concepts with a discussion of library effectiveness...."[130] They said that it would be more meaningful to define library effectiveness as being related to the achievement of library goals which may "take the form of useful outputs which are consumed by those outside of the library system."[131]

More specifically, the authors considered library effectiveness to include consideration of: (1) goal achievement (admittedly difficult to measure), (2) efficiency, (3) user satisfaction, (4) personnel input, and (5) system goals. They pointed out that Rosenberg, in 1969, argued "that the only criterion of effectiveness is 'value received.' "[132] They summarized by stating that "library effectiveness can be viewed as the successful interaction between the library and its environment."[133] In a 1981 *Occasional Papers*, the DuMonts discussed library effectiveness and goals and how the two can be related.[134]

Assuming that there is a reasonable consensus regarding the definition of library effectiveness, at least one more crucial question remains. Upon what source of information should the librarian base his or her determination of library effectiveness? It is being argued here that at least one logical source of this sort of information is the user study. In other words, user studies can provide the researcher with the kind of output or performance measures that he or she needs to evaluate library effectiveness as defined earlier.

In fact, there is considerable support in the literature for utilizing user studies for performance measures and, more specifically, for evaluating library effectiveness. As Beeler stated: "If we want to know how well libraries are serving the population we must turn to users of the service for answers, bearing in mind the purposes intended by the services."[135] Or as Chen and Hernon wrote: "Library effectiveness must be viewed within the context of people's information needs, the strategies by which they gather information, and the role of source providers in supplying information."[136] Schultz went so far as to state that, "There is considerable agreement among investigators that any performance measure worthy of the name is user-oriented if it measures a service from the client's viewpoint."[137]

Lancaster, citing Tauber and Stephens, noted that "the basic aims of a survey should be evaluation of the effectiveness of the services provided, determination of the extent to which user needs are satisfied, and identification of ways in which service might be improved."[138] Busha and Harter argued for the relationship between measuring library effectiveness and gathering user related information when they stated: "Among the questions that librarians have a distinct obligation to answer are those relating to library effectiveness, including such factors as...the use and non-use of library materials and services ..the degree of awareness about library collections and services among clientele or potential clientele of libraries...and user satisfaction or dissatisfaction with libraries."[139] Or, as they later stated, "librarians should be concerned with the performance of their institutions."[140] Rodwell wrote: "There is a general recognition that measures of effectiveness should adequately reflect the satisfaction of user needs."[141] Similar emphasis on the importance of measuring user satisfaction in order to determine the library's contribution to its community can be found in Hoadley and Clark's work on quantitative methods.[142]

All twelve of the measures in *Output Measures for Public Libraries* reflect user activities to one degree or another.[143] Kantor's four performance measures for academic and research libraries are patron oriented.[144] Cronin's model for assessing public services in academic and research libraries suggests that four factors should be considered when setting a standard for quality of service.[145] One of those factors is "user expectations of the service." McClure, in a consideration of performance measures for corporate libraries, stated: "Performance measurement involves the establishment of library objectives based on user needs, the expression of these objectives in quantifiable units, the measurement of the units, and the assessment of library performance vis á-vis its stated objectives."[146] In a review of research on reference service effectiveness, Powell noted that the

major emphasis had been on output measures and that quite a few of the measures had to do with the satisfaction of users' needs.[147]

A Planning Process for Public Libraries stated that performance measures can be categorized in a number of ways, including by the population groups considered.[148] Schlukbier also stressed the importance of having adequate information about the library's community when he stated that the "ultimate evaluation" of any library must be based on the use being made by the community, and argued that performance cannot be measured without knowledge of the community.[149] Schlukbier concluded, "We as professionals have an obligation to produce constructive research that will give us vital information concerning the needs, desires, and individual characteristics of users and non-users. Performance measurement is the only vehicle to adequately explore that neglected area of librarianship, while providing a relatively simple design for effectively managing libraries."[150] Daniel Gore, writing about his use of DeProspo's performance measures, said that "the only trustworthy measure of Holdings and Availability Rates are those which are applied directly to the actual users of any given library, whether it be public, academic, or special."[151] And finally, Lowell Martin succinctly stated: "User information is a key component in measurement and evaluation."[152]

Others have contended that in order to evaluate more fully the ultimate output or effectiveness of a public library, we must learn more about how and why library users *use* the library. Zweizig and Dervin, for example, stated that "more might be gained by moving from user studies to studies of the uses to which public libraries are put."[153] The DuMonts wrote that librarians need to measure uses, as well as users.[154] Ford, in his work on user studies, wrote: "Key factors in studies of information transfer are thus the purpose for which information is sought, and the use which is made of it. These factors are often neglected, or treated only superficially in many user studies."[155] Totterdell argued that final output, or the effectiveness of a library service, should be measured in terms of use, including total use of the library and the degree of use by different age groups, social classes, occupational groups, and different geographical areas within the total service area.[156]

Whether the emphasis is on the user and his or her characteristics or on how the user uses the library, there can be little doubt that the professional literature evidences substantial support among librarians for relating user information to the evaluation of library effectiveness. In addition, there is considerable endorsement for viewing library effectiveness as perhaps the most important element of library performance. But does the literature

provide much evidence that librarians practice what they preach? Have librarians in fact attempted to measure the performance or effectiveness of their libraries by studying their libraries' users?

Speaking of library effectiveness in general, the DuMonts wrote that "relatively little is known about the effectiveness of many library programs" and that there is a "lack of objective empirical evaluations" of library services.[157] With regard to the use of user studies in measuring performance, Knightly analyzed the 1977 and 1978 annual reports of 62 selected libraries of various types and found only 1.1% of the performance criteria being used were user studies.[158] DeProspo reported in 1976 that there was almost no literature discussing the ways in which community analysis and the library measurement process can or should be brought together. He pointed out that: "The situation is further complicated by the typical problem, that the library's existing measurement process has generated an information base largely unsuitable for comparing results with existing community information data bases."[159]

There have been some library evaluation studies that have taken into account the library user. However, "most of our current library effectiveness studies, particularly those from academic libraries, equate library effectiveness with user satisfaction."[160] (As was noted earlier, this limitation was reflected in a criticism of the original DeProspo study, in that his major direct measurement of users was related to user satisfaction.)

As was reported earlier, the Rutgers manual on public library performance measures was tested by the University of Illinois Library Research Center. Following the Illinois study, the Research Center sent a questionnaire to a sample of the participating librarians asking them about the anticipated usefulness of the data obtained as a result of their having conducted a performance measures study. User information was the response most frequently cited as the type of data from which they expected to benefit.[161] As a result, the Library Research Center recommended expanding the user ticket (questionnaire) and distributing longer user questionnaires to a larger sample of patrons.

In a study reported in 1980, Detweiler investigated the relationship between library effectiveness and the availability of materials sought by the library patron.[162] Howard and Norman designed their Complete Service Statistics to inventory all library output reflecting user contact including: lending services, facilities services, information services, production services, and staff services.[163] Jones stated that: "It is often convenient to attempt to assess the adequacy of a library service in relation to the

population served,"[164] though he seemed to take a basically input-oriented approach in his study.

Ford, reporting on his survey of user studies, indicated that several factors affecting user information needs had been identified. These included, among others: (1) the background, motivation, professional orientation, etc. of the user; (2) the social, political, economic, and other systems that affect the user and his work; (3) the uses to which information is put; and (4) the consequences of information use—for example, the productivity of the user.[165]

Data Collection

But what of the techniques used to apply user information to performance measurement in these studies and others? What are the variables deemed important enough to measure? A survey of the literature identified a considerable number of techniques and variables, but the distinction between the variable or characteristics to be measured and the measurement technique was not always apparent. However, what follows is at least a partial listing of the terms that appear to have been used to identify or represent user-oriented variables worth considering in performance measurement. Following that is a list of techniques proposed or used to measure one or more performance variables. User variables related to library performance include:

1. user needs,
2. user use,
3. user satisfaction,
4. patron's expectations,
5. efficiency,
6. process,
7. demographic-type data,
8. community satisfaction with its library services,
9. information-seeking behavior,
10. purposes for seeking information,
11. user's personality,
12. user's interests,
13. user's attitudes,
14. user's "total-life situation,"
15. user demands,
16. user "factors," and
17. citizen awareness of library services.

User-related techniques used to measure library performance include

1. mathematical models describing library use,
2. proxy goals—e.g., substituting exposure time for value of documents to users,
3. systems approach,
4. community analysis,
5. library response time,
6. document delivery,
7. provision of citations,
8. total library contact time per potential user,
9. "item-use-day,"
10. extent of reader self-service,
11. cost benefit ratio,
12. library effort (input),
13. library performance (output),
14. search success rate,
15. total library use,
16. percentage of total population being served by the library,
17. percentage of materials used according to type of user,
18. ratio of a given service to the total number of library users,
19. ratio of the number of documents circulated to types of users,
20. ratio of total use to total holdings,
21. user access,
22. return visits,
23. use log, and
24. program attendance log

As is evident from a reading of the two preceding lists, not all of the items mentioned appear to be based entirely on the library user. As was noted earlier, many "performance" measures are in fact more concerned with library activities than with library users (or measures). Yet one measure that is surely user-oriented, user satisfaction, is probably cited more frequently than any other measure as an important, if not essential, indicator of library performance.

Lancaster, for example, identified several important factors that affect library performance and indicated that they should be judged in terms of user satisfaction.[166] Parker stated that in order to measure library performance one needs information about, among others, user satisfaction.[167] The PLA's recent work charged the library planning committee with providing periodic information on changes in users' satisfaction with the library.[168] The PLA's work on output measurement also suggested the importance of user satisfaction.[169] Burns recommended a set of indexes of

effectiveness to measure the relationships between levels of library performance, resource allocation, and user satisfaction.[170] Evans and others reviewed the criteria that have been used to measure library effectiveness, and they included, among others: general user satisfaction and user satisfaction with existing library services and materials.[171]

Zweizig concluded that user satisfaction is the best measure available for measuring library use, but he did point out that it does not reveal how the library's resources actually help the user.[172] (This issue will be considered again at a later point.) White cautioned that such terms as user needs and user demands are sometimes used interchangeably, but he noted that needs are more difficult to determine than are demands.[173] The DuMonts, in their work on measuring library effectiveness, contended that it is best to take an integrated approach to evaluating library effectiveness. They suggested considering elements such as the employee, the library as an organization, and the total environment. They also emphasized the importance of utilizing measurement that is relevant or meaningful.[174] Or in other words, regardless of the variables or techniques selected for measuring library performance, they should be approrpriate for the task and capable of providing useful data and ultimately substantive benefits.

Possible Benefits

Having discussed already the many benefits potentially obtainable from utilizing performance measures and user studies, it probably is not necessary to reiterate the benefits to be gained from employing them separately. The major point to be made here is that by basing performance measures on data gathered in user studies, the librarian is more likely to have at his or her disposal truly meaningful data. Rather than having available data that merely describe library activities or do nothing more than characterize library users, the librarian should be able to acquire information about how library users and library services interact. Or in short, the application of user studies to performance measures should result in a more accurate assessment of a library's effectiveness.

There has been some discussion of the benefits to be gained from employing user studies as performance measures and of measures of effectiveness. The DuMonts, having pointed out that user satisfaction is one element of the definition of library effectiveness, stated that "the primary purpose of measurement procedures is to obtain information about the library in order to provide decision makers with a clearer understanding of what the library is doing. An accurate and objective evaluation of the effectiveness of the library can then be attempted."[175] Similarly, Lynch wrote: "The results

of measurement can be used to evaluate the performance of a library and thereby determine whether or not it is effective."[176] Schlukbier argued that:

> Performance measurement is a research tool capable of clarifying objectives of library services, and indicating directions for growth and techniques for increasing the efficiency of their implementation. The ultimate evaluation of any library must be made in terms of the use being made by the community. Therefore, finding out how a specific library or library system is meeting the needs of its community will reveal areas in which efficiency can be improved and library growth enhanced.[177]

The authors of *A Planning Process for Public Libraries* emphasized that: "Planning library services for a community requires, first of all, an understanding of that community: its environment, its population, their information needs, and the sources available to meet those needs."[178] Lancaster stated that a well-conducted library survey should attempt to assess the degree to which the library services meet the needs of the community served. Doing so can provide a useful indication of how satisfied the users are with the services provided.[179] Schrader also stressed the importance of assessing user satisfaction. He contended that the user is concerned about how accessible the library and its services are; or in other words, how much time and effort the user will have to expend in order to satisfy his or her information needs.[180] As DeProspo has stated: "A better educated and more sophisticated public is less willing than ever to accept the need for community services on faith alone. Increasingly the public is demanding proof of the effectiveness of various programs."[181]

In summary, performance measures based on user studies can provide management with the kind of information it needs to define, quantify, and measure a library's success in accomplishing its service goals. "They enable the institution to tell how, why, where, and when it is successful and to express this success in meaningful, i.e., quantifiable, terms for comparison with similar institutions or systems,"[182] and just as importantly, in terms that are based on the library user as the unit of measure. For as Burns stated, "public service agencies such as libraries need continuous feedback from their users lest they lose touch with the realities of their existence."[183]

Limitations

Having pointed out some of the benefits to be realized from employing user-oriented performance measures for the evaluation of a library, it is important to recognize that such an approach also has certain limitations. Some of these limitations are applicable to measurement procedures in general, others are specifically related to user-based measurements.

DeProspo, for example, cautioned that "not all library activities are subject to reasonable quantification or objective measurement."[184]

The DuMonts stated that: "The study of library effectiveness is made more complex by the ambiguous, relativistic character of the environment of which the library is a part."[185] They later itemized some of the measurement problems that tend to exist, and these included:

1. the frequent reluctance of librarians to use certain measurement techniques;
2. the fact that many work load indicators, such as the numbers of books cataloged, circulated, etc., say nothing about effectiveness;
3. the not necessarily true assumption that financial support is an adequate indicator of effectiveness;
4. the limitations of physical standards,
5. the fact that cost-benefit analysis places too much reliance on value judgments; and
6. in order to employ user studies to measure library effectiveness, criteria must be used that accurately reflect the basic services of the library as they affect those who use or do not use them. (They also reminded the reader that different groups have different goals and different criteria for evaluating a library's effectiveness.)

It was suggested earlier that among the most valid criteria for measuring library effectiveness is patron *use* of library-supported information. But as Zweizig acknowledged, measures of how the products of library service are used by patrons are very elusive, and the least under the control of the library.[186]

Another limitation is related to the need to study the nonuser, as well as the user—an assumption implicit in most of what has been stated thus far. Unfortunately, it is even more difficult to survey the nonuser than the user. For example, it has been found that: "There is a high correlation between nonreturn of questionnaires and non-use of the library."[187]

It also has been indicated here and elsewhere that it is desirable to investigate user needs as well as demands. But this too has proven difficult to accomplish, and most user studies have dealt with demands rather than needs.[188]

User satisfaction, another important reflection of library performance discussed earlier, has likewise proven hard to determine. D'Elia stated: "To the extent that user satisfaction is a function of the library's ability to gratify the user's needs or fulfill his expectations, user satisfaction is

potentially a very useful diagnostic measure of library performance. The extent of this usefulness, however, is dependent upon our ability to identify the determinants of user satisfaction.[189] He went on to propose that user satisfaction is a function of the user's demographic characteristics, the various uses made of the library by the user, and the user's evaluation of the characteristics of the library used.

Buckland, in his important work on book availability, concluded that: "The nature of the relationship between user behaviour and Satisfaction Level is not yet clear."[190] He even hypothesized that users' demands for books were affected by their satisfaction levels, which in turn affected their demands for books.

A similar concern was expressed by Stipak in his article on the potential misuse of citizen satisfaction as a performance measure of urban services. He advised that expressed satisfaction may not reflect actual service performance, and that indicators must be linked to specific services. He also cautioned against relying too heavily on the conceptual and statistical analysis of essentially subjective indicators such as user satisfaction.[191] In short, user satisfaction alone may not be a satisfactory criterion for measuring library performance. And no doubt this limitation applies to other performance measures as well.

In light of the various strengths and weaknesses of user-oriented performance measures, and considering the support at least indirectly evidenced for them in the literature, what does the future appear to hold for developing performance measures based on user studies? Is the situation or outlook any better now than it was in 1976 when DeProspo wrote: "While undoubtedly the most desirable measurement process is one which produces data on outcomes, that is, data which prove that needs are met and behavior changed as a result, we remain unable to execute such a process."[192] Possibly not, but there at least have been suggestions forthcoming as to how the effectiveness of using user studies to evaluate services can be increased.

Stipak recommended that we not rely too heavily on survey items asking persons how satisfied they are with local services or asking them to actually evaluate particular services. Rather we should concentrate more on asking specific, objective questions probing citizens' actual use of library services.[193] Along these same lines, Lancaster noted that McCarthy and Howder "believe that the general survey will be replaced by more specialized studies and that 'more sophisticated analyses and evaluations...may be required.'"[194]

Lubans contended that librarians should investigate factors such as user success in using specific library services such as the card catalog, reference service, and books in the stacks, ultimate user benefits realized from obtaining information from the library; the social and economic impacts of library use and nonuse; and users' needs for knowledge on how to use the library.[195] Zweizig argued for the importance of exploring further the quality or type of library use.[196]

The importance of continuing to consider both user needs and demands and to distinguish between the two was stressed by the DuMonts They wrote:

> Individual patrons have very specific information needs which the library can fulfill, a small proportion of which are verbalized as demands which the library is expected to fill if it is to be judged effective The first step in achieving effectiveness is actually identifying or defining what these information needs and demands are. Fulfilling user demands is an intermediate step in the attempt to be effective. Fulfilling needs is the ultimate goal [197]

In conclusion, Zweizig and Dervin reminded the reader that, "we must give attention to the 'uses' that will be made of the 'user' studies by public librarians. The important question is whether the research helps...in evaluating effectiveness."[198] Zweizig noted that in 1978, the National Center for Education Statistics (NCES) assembled a panel to make recommendations as to how public library statistics might be made more user-oriented. The panel was to recommend areas for study regarding public library users and nonusers and services. Major questions resulting from the panel's deliberations related to the current effectiveness of public libraries and focused on (1) the function of the library for the community, (2) the portion of the community being served adequately, (3) the effects of particular library programs on users, and (4) the development of techniques for demonstrating that library use had helped users to improve their lifestyles or had benefited them in other ways. The panel concluded by proposing further study in the areas of user studies, the social impact of libraries, library use models, service inventories, the impact of administrative decisions, and the application of public service surveys and user nonuser surveys to administrative processes [199]

SUMMARY AND CONCLUSIONS

This paper has attempted to point out that if libraries ever hope to truly evaluate their services, they must employ valid procedures, or measures that in fact measure what they are intended to measure. Or as Lancaster has

stated. "Only by applying appropriate measurement and evaluation techniques can a library determine the circumstances under which it performs well or less well and identify the causes of its failures with sufficient precision to allow corrective actions to improve the overall level of performance and, presumably, to raise the level of user satisfaction with the services provided."[200]

This paper has suggested that what libraries should most be concerned with measuring is their ultimate product—performance or effectiveness—and that the best indicators of their level of performance are, or should be, based on user data such as satisfaction. These two points were made earlier by, among others, Armstrong when he wrote that: "The ultimate point of measurement and evaluation in an institution is its product. Does it produce what it is designed to produce, and does the product meet the requirements of the customers?"[201] And later, "Of all the generally feasible process measures, the one that comes closest to establishing a product is the user survey."[202]

In short, there is a real need for libraries to be accountable for the effectiveness of their services. And at least one possibly valid approach to evaluating the effectiveness of library services involves user-oriented performance measures. Employing such an approach takes cognizance of the benefits of using performance measures and user studies separately, integrates the two techniques, and, it is hoped, produces an even better method for evaluating the performance of libraries.

REFERENCES

1 Lynch, Mary Jo "Practical Performance Measurement for Public Libraries A Bibliographic Essay" Unpublished manuscript, 1980, p 1

2 Beeler, M G Fancher *Measuring the Quality of Library Service* Metuchen, N J Scarecrow Press 1974, p vii

3 D'Elia, George "The Development and Testing of a Conceptual Model of Public Library User Behavior" *Library Quarterly* 50(Oct 1980) 410

4 DeProspo, Ernest R , et al *Performance Measures for Public Libraries* Chicago ALA, 1973

5 Zweizig, Douglas, and Rodger, Eleanor Jo *Output Measures for Public Libraries* Chicago ALA, 1982

6 Lynch, Mary Jo "Measurement of Public Library Activity The Search for Practical Methods" *Wilson Library Bulletin* 57(Jan 1983) 388 93

7 Kantor, Paul B *Objective Performance Measures for Academic and Research Libraries* Washington, D C Association of Research Libraries 1984

8 Cronin, Mary J *Performance Measurement for Public Services in Academic and Research Libraries* (Occasional Paper No 9) Washington, D C Association of Research Libraries, Office of Management Studies, 1985

9 Burns, Robert W , Jr "Library Use as a Performance Measure Its Background and Rationale" *Journal of Academic Librarianship* 1(March 1978) 4

10 Ibid , p 5

11 Campbell, Angus, and Metzner, Charles A *Public Use of the Library and Other Sources of Information* Ann Arbor University of Michigan, Institute for Social Research, 1950

12 Gallup Organization *Book Reading and Library Usage A Study of Habits and Perceptions* Princeton, N J Gallup Organization, Inc , 1978

13 Albright, John B "A Bibliography of Community Analyses for Libraries" *Library Trends* 24(Jan 1976) 619-43, Atkin, Pauline *A Bibliography of Use Surveys of Public and Academic Libraries, 1950-Nov 1970* 1971 (ED 055 617), Bates, Marcia J *User Studies A Review for Librarians and Information Scientists* 1971 (ED 017 738), Davis, Richard A , and Bailey, Catherine A *Bibliography of User Studies* Philadelphia Drexel Institute of Technology, Graduate School of Library Science, 1964, Ford, Geoffrey, ed *User Studies, An Introductory Guide and Select Bibliography* (Occasional Paper No 1) Sheffield, England University of Sheffield, Centre for Research on User Studies, 1977, *Index to User Studies* The Hague, Netherlands International Federation for Documentation, 1974, Lubans, John "Library User Studies" *Encyclopedia of Library and Information Science*, vol 16, edited by Allen Kent, pp 147-60 New York Marcel Dekker, 1975, Slater, Margaret "User and Library Surveys" In *British Librarianship and Information Science, 1966-1970*, edited by H A Whatley London Library Association, 1972, and Wood, D N "User Studies A Review of the Literature from 1966-1970" *Aslib Proceedings* 23(Jan 1971) 11-23

14 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

15 Lancaster, F Wilfrid *The Measurement and Evaluation of Library Service* Washington, D C Information Resources Press, 1977

16 Clark Philip M *New Approaches to the Measurement of Public Library Use by Individual Patrons* (Occasional Papers No 162) Urbana-Champaign University of Illinois, Graduate School of Library and Information Science, 1983, p 3

17 Association of Research Libraries *User Surveys and Evaluation of Library Surveys* (SPEC Kit No 24) Washington, D C ARL, 1976, p 1, and Association of Research Libraries *User Surveys and Evaluation of Library Surveys* (SPEC Kit No 71) Washington D C ARL, 1981

18 Association of Research Libraries, *User Surveys and Evaluation*, 1976, p 1

19 The Lubans's article in the *Encyclopedia of Library and Information Science* (see reference number 13) presents a helpful overview of activity in the academic community

20 Line, Maurice B "Draft Definitions Information and Library Needs, Wants, Demands and Uses" *Aslib Proceedings* 26(Feb 1974) 87

21 Zweizig, Douglas L "Measuring Library Use" *Drexel Library Quarterly* 13(July 1977) 3-15

22 Ibid , p 7

23 D'Elia, "The Development and Testing of a Conceptual Model"

24 Ibid

25 Dervin, Brenda "Useful Theory for Librarianship Communication Not Information" *Drexel Library Quarterly* 13(July 1977) 16-32

26 Ford, *User Studies*, p 3

27 White, Herb "Library Effectiveness—The Elusive Target" *American Libraries* 11(Dec 1980) 682-83

28 Burns, "Library Use as a Performance Measure" p 5

29 Ford, *User Studies*

30 Ballard, Thomas "More Books, Not Market Surveys" *American Libraries* 12(Feb 1981) 77

31 Palmour, V E , et al *A Planning Process for Public Libraries* Chicago ALA, 1980, p 208

32 Burns, "Library Use as a Performance Measure," p 8

33 Ibid., p. 9

34 Palmour, et al., *A Planning Process for Public Libraries*

35 Ford, *User Studies*

36 See, for example, Martin, Lowell *Adults and the Pratt Library* Baltimore: Enoch Pratt Free Library, 1974, and _____ *Library Response to the Urban Change* Chicago: ALA, 1969

37 Carpenter, Ray "A Study of Adult Public Library Patrons in North Carolina" *North Carolina Libraries* 35(Spring 1977) 24-36, Chen, Ching-chih *Citizen Information Seeking Patterns: A New England Study* Washington, D.C.: U.S. Office of Education, 1979, and Joyce, C.D. *Study of the Community of East Brunswick Public Library* E. Brunswick, N.J.: E. Brunswick Public Library, 1977

38 Burns, "Library Use as a Performance Measure," p. 6

39 D'Elia, "The Development and Testing of a Conceptual Model"

40 Burns, "Library Use as a Performance Measure," p. 9

41 Ford, *User Studies*

42 Lancaster, *The Measurement and Evaluation of Library Service*

43 Burns, "Library Use as a Performance Measure," p. 7

44 Ibid., p. 6

45 Zweizig, and Dervin, "Public Library Use, Users, Uses," p. 232

46 Ford, *User Studies*

47 Busha, Charles H., and Harter, Stephen P. *Research Methods in Librarianship* New York: Academic Press, 1980

48 Palmour, et al. *A Planning Process for Public Libraries*

49 Kantor, Paul B. "The Library as an Information Utility in the University Context: Evolution and Measurement of Service" *JASIS* 27(March 1976) 100-12

50 Ford, *User Studies*

51 Zweizig, and Dervin, "Public Library Use, Users, Uses," p. 240

52 Ibid., p. 247

53 Zweizig, Douglas L. "Community Analysis" In *Local Public Library Administration*, edited by Ellen Altman, p. 40. Chicago: ALA, 1980

54 Burns, "Library Use as a Performance Measure"

55 DuMont, Rosemary R., and DuMont, Paul F. "Measuring Library Effectiveness: A Review and Assessment" In *Advances in Librarianship*, vol. 9, edited by Michael H. Harris, p. 137. New York: Academic Press, 1979

56 White, "Library Effectiveness," p. 682

57 Ford, *User Studies*, p. 17

58 Wilson, T.D. "On User Studies and Information Needs" *Journal of Documentation* 37(March 1981) 5

59 Zweizig, "Measuring Library Use"

60 Harris, Michael H., and Sodt, James "Libraries, Users, and Librarians: Continuing Efforts to Define the Nature and Extent of Public Library Use" In *Advances in Librarianship*, vol. 11, edited by Melvin J. Voigt, pp. 109-33. New York: Academic Press, 1981

61 Knightly, John J. "Overcoming the Criterion Problem in the Evaluation of Library Performance" *Special Libraries* 70(April 1979) 173-78

62 Burns, "Library Use as a Performance Measure," p. 11

63 Public Libraries Research Group *Output Measurement* (PLRG Publication No. 1) London: PLRG, 1974, p. 6

64 Ibid., p. 4

65 Palmour, et al., *A Planning Process*, p. 112

66 Ibid., p. 50

67 Public Libraries Research Group, *Output Measurement*, p. 4

68 Schrader, Alvin M. "Performance Measures for Public Libraries: Refinements in Methodology and Reporting" *Library Research* 2(Summer 1980-81) 130

69 Blasingame, Ralph, and Lynch, Mary Jo "Design for Diversity: Alternatives to Standards for Public Libraries" In *Studies in Library Management*, vol. 3, edited by Gideon Hollroyd, p. 32. Hamden, Conn.: Linnet Books, 1976

70 Hamburg, Morris, et al "Library Objectives and Performance Measures and Their Use in Decision Making" *Library Quarterly* 42(Jan 1972) 110

71 Palmour, et al , *A Planning Process*, p 8, and Public Libraries Research Group, *Output Measurement*

72 Orr, R H "Measuring the Goodness of Library Services A General Framework for Considering Quantitative Measures" *Journal of Documentation* 29(Sept 1973) 317

73 Martin, Lowell A "User Studies and Library Planning" *Library Trends* 24(Jan 1976) 185

74 Parker, Sandra "A Conceptual Framework for the Performance Measurement of a Canadian Federal Government Health Sciences Library Network" In *Quantitative Measurement and Dynamic Library Service*, edited by Ching-chih Chen, p 253 Phoenix, Ariz Oryx Press, 1978

75 American Library Association *The Public Library Mission Statement and Its Imperatives for Service* Chicago ALA, 1979, p 5

76 DeProspo, et al , *Performance Measures*, p 11

77 Ibid , p vii

78 Ibid , p 31

79 DeProspo, Ernest R , et al *Performance Measures for Public Libraries A Procedures Manual for the Collection and Tabulation of Data* New Brunswick, N J Rutgers University, Bureau of Library and Information Science Research, 1974

80 Powell, Ronald R , et al *The Application of Performance Measures in a Sample of Illinois Public Libraries* Urbana-Champaign University of Illinois, Library Research Center, 1976 (ED 132 969)

81 Goldhor, Herbert "Some Lessons from a Statewide Application of Performance Measures for Public Libraries" *Illinois Libraries* 60(May 1978) 472-86

82 City of St Petersburg, Management Improvement Department *Report on Library User Survey, 1974* St Petersburg, Fla City of St Petersburg, Management Improvement Department, 1974

83 Altman, Ellen, et al *A Data Gathering and Instruction Manual for Performance Measures in Public Libraries* Chicago Celadon Press, 1976

84 Clark, Philip M , et al *New Jersey Measurement Study A Study to Refine and Test New Measures of Library Service and Train Library Personnel in Their Use* New Brunswick, N J Rutgers University, Bureau of Library and Information Science Research, 1976

85 Fairfield, J , and Rowland, B "Measuring Library Performance The Experience of Four Ontario Public Libraries" *Ontario Library Review* 62(March 1978) 9-16, Gregory, Ruth W "Practical Applications in Performance Measurements," 1975 (ED 110 064), McKenzie, Duncan J "Performance Measurement One Library's Findings Through Evaluation" *Library Occurrent* 26(Aug 1979) 239-43, Crane, R A "Library Performance Measures" *Wisconsin Library Bulletin* 75(Nov 1979) 279-80, and Ramsden, M J *Performance Measurement of Some Melbourne Public Libraries* Melbourne, Australia Library Council of Victoria, 1978

86 Morgan, Philip "Output Measurement and Libraries" *Assistant Librarian* 68(Dec 1975) 182-85

87 Palmour, et al , *A Planning Process*

88 Schlukbier, George "Transgressing the System Performance Measurement and Library Development" *Canadian Library Journal* 35(Aug 1978) 303-06

89 Grayson, Leslie E , and Wingate, Henry W "Performance Measurement in Libraries" *Southeastern Librarian* 25(Fall 1975) 27

90 Hamburg, et al , "Library Objectives and Performance Measures"

91 Public Libraries Research Group, *Output Measurement*

92 Kantor, *Objective Performance Measures*.

93 Zweizig, *Output Measures for Public Libraries*

94 Public Libraries Research Group, *Output Measurement*

95 Schlukbier, "Transgressing the System," p 306

96 Public Libraries Research Group, *Output Measurement*

97 Palmour, et al , *A Planning Process*

98 Beeler, *Measuring the Quality of Library Service*.

99 Palmour, et al., *A Planning Process*, p 114

100 Schlukbier, "Transgressing the System," p 304

101 Howard, Edward N., and Norman, Darlene M "Measuring Public Library Performance" *Library Journal* 106(1 Feb 1981) 305-08

102 Lynch, "Practical Performance Measurement"

103 Orr, "Measuring the Goodness of Library Services"

104 DeProspo, et al., *Performance Measures*, p vii

105 Howard, and Norman, "Measuring Public Library Performance"

106 Schrader, "Performance Measures for Public Libraries"

107 Public Libraries Research Group, *Output Measurement*

108 Schrader, "Performance Measures for Public Libraries," p 130

109 Zweizig, and Dervin, "Public Library Use, Users, Uses"

110 DeProspo, Ernest R., and Altman, Ellen "Library Measurement A Management Tool" *Library Journal* 98(15 Dec 1973) 3605-07

111 Powell, et al., *The Application of Performance Measures*, p 30

112 Goldhor, "Some Lessons from a Statewide Application of Performance Measures," p 475

113 Ibid., p 476

114 Schrader, "Performance Measures for Public Libraries," p 130

115 Evans, Edward, et al., "Review of Criteria Used to Measure Library Effectiveness" *California Librarian* 33(April 1972) 77

116 Crane, "Library Performance Measure" p 279

117 D'Elia, George, and Walsh, Sandra "User Satisfaction With Library Service—A Measure of Public Library Performance" *Library Quarterly* 53(April 1983) 109-33

118 _____ "Patrons' Uses and Evaluations of Library Services A Comparison Across Five Public Libraries" *Library and Information Science Research* 7(Jan March 1985) 29

119 D'Elia, George "Materials Availability Fill Rates—Useful Measures of Library Performance" *Public Libraries* 24(Fall 1975) 110

120 Van House, Nancy A "Output Measures Some Lessons From Baltimore County Public Library" *Public Libraries* 24(Fall 1975) 104-05

121 _____ "Public Library Effectiveness Theory, Measures, and Determinants" *Library and Information Science Research* 8(July Sept 1986) 269

122 Evans, et al., "Review of Criteria Used to Measure Library Effectiveness," p 79

123 See Goldhor, "Some Lessons from a Statewide Application of Performance Measures for Public Libraries" (reference number 81) for additional consideration of this point

124 Morgan, "Output Measurement and Libraries," p 282

125 Grayson, and Wingate, "Performance Measurement in Libraries," p 26

126 Public Libraries Research Group, *Output Measurement*

127 O'Connor, Daniel O "Statistical Measures for Library Accountability" (Paper presented at the IFLA General Conference, Chicago, 20 Aug 1985)

128 Public Libraries Research Group, *Output Measurement*, p

129 Ibid., p 49

130 DuMont and DuMont, "Measuring Library Effectiveness," p 107

131 Ibid

132 Ibid., p 113

133 Ibid., p 120

134 Dumont, Rosemary R., and DuMont, Paul F *Assessing the Effectiveness of Library Service* (Occasional Papers No 152) Urbana-Champaign University of Illinois, Graduate School of Library and Information Science, 1981

135 Beeler, *Measuring the Quality of Library Service*, p viii

136 Chen, Ching-chih, and Hernon, Peter "Library Effectiveness in Meeting Information Consumers Needs" In *Library Effectiveness. A State of the Art*, p 50 Chicago ALA, 1980

137 Schultz, Claire K "Performance Measures for Libraries and Information Centers" In *Contemporary Problems in Technical Library and Information Center Management A State of the Art*, edited by Alan Rees, p 141 Washington, D C ASIS, 1974

138 Lancaster, *The Measurement and Evaluation of Library Service*, p 300
139 Busha, and Harter, *Research Methods in Librarianship*, p 154
140 Ibid , p 155
141 Rodwell, John *A Review of the Recent Literature on the Assessment of Library Effectiveness* Kensington, Australia The University of New South Wales, School of Librarianship, 1975, p 20
142 "Group Discussion Research on User Studies " In *Quantitative Methods in Librarianship Standards, Research, Management*, edited by Irene B Hoadley and Alice S Clark, p 131 Westport, Conn Greenwood Press, 1972
143 Zweizig, and Rodger, *Output Measures for Public Libraries*
144 Kantor, *Objective Performance Measures*
145 Cronin, *Performance Measurement for Public Services*
146 McClure, Charles R , and Reifsnyder, Betsy "Performance Measures for Corporate Information Centers " *Special Libraries* 75(July 1984) 191
147 Powell, Ronald R "Reference Effectiveness A Review of Research " *Library and Information Science Research* 6(Jan March 1984) 3-19
148 Palmour, et al *A Planning Process*, p 116
149 Schlukbier, "Transgressing the System," p 304
150 Ibid
151 Gore, Daniel "The Mischief in Measurement " *Library Journal* 103(1 May 1978) 937
152 Martin, "User Studies," p 494
153 Zweizig, and Dervin, "Public Library Use, Users, Uses," p 248
154 DuMont, and DuMont, "Measuring Library Effectiveness," p 127
155 Ford, *User Studies*, p 14
156 Public Libraries Research Group, *Output Measurement*, p 14
157 DuMont, and DuMont, "Measuring Library Effectiveness," p 105
158 Knightly, "Overcoming the Criterion Problem "
159 DeProspo, Ernest R "The Use of Community Analysis in the Measurement Process " *Library Trends* 24(Jan 1976) 559
160 White, "Library Effectiveness," p 682
161 Powell, et al , *The Application of Performance Measures*
162 Detweiler, Mary Jo "Availability of Materials in Public Libraries " In *Library Effectiveness A State of the Art* Chicago ALA, 1980
163 Howard, and Norman "Measuring Public Library Performance "
164 Jones, Arthur "Criteria for the Evaluation of Public Library Services " *Journal of Librarianship* 2(Oct 1970) 232
165 Ford, *User Studies*
166 Lancaster, *The Measurement and Evaluation of Libraries*
167 Parker, "A Conceptual Framework for the Performance Measurement "
168 Palmour, et al , *A Planning Process*, p 78
169 Public Libraries Group, *Output Measurement*
170 Burns, "Library Use as a Performance Measure," p 10
171 Evans, et al , "Review of Criteria Used to Measure Library Effectiveness "
172 Zweizig, "Measuring Library Use "
173 White, "Library Effectiveness "
174 DuMont, and DuMont, "Measuring Library Effectiveness "
175 Ibid , p 124
176 Lynch, "Practical Performance Measurement," p 2
177 Schlukbier, "Transgressing the System," p 304
178 Palmour, et al , *A Planning Process*, p 39
179 Zweizig, and Dervin "Public Library Use, Users, Uses "
180 Schrader, "Performance Measures for Public Libraries," p 130
181 DeProspo, Ernest R , and Altman, Ellen "Another Attempt at Measuring Public Library Effectiveness Some Methodological Considerations " In *Approaches to Measuring Library Effectiveness A Symposium*, edited by A F Hershfield and M D Boone, p 18 Syracuse, N Y Syracuse University, School of Library Science, 1972

182 Burns, "Library Use as a Performance Measure," p 5

183 Ibid , p 7

184 DeProspo, et al , *Performance Measures*, p 4

185 DuMont, and DuMont, "Measuring Library Effectiveness," p 117

186 Zweizig, Douglas L "Approaches to the Study of Public Library Services and Users The Recommendations of a Study Panel to the National Center for Education Statistics" *Public Library Quarterly* 1(Fall 1979) 260

187 "Group Discussion Research on User Studies," p 140

188 DuMont, and DuMont, "Measuring Library Effectiveness," p 114

189 D'Elia, George P "User Satisfaction as a Measure of Public Library Performance" In *Library Effectiveness A State of the Art*, p 64

190 Buckland, Michael K *Book Availability and the Library User* New York Pergamon, 1975, p 130

191 Stipak, Brian "Citizen Satisfaction with Urban Services Potential Misuse as a Performance Indicator" *Public Administration Review* 39(Jan Feb 1979) 46-52

192 DeProspo, "The Use of Community Analysis in the Measurement Process," p 558

193 Stipak, "Citizen Satisfaction with Urban Services"

194 Lancaster, *The Measurement and Evaluation of Library Service*, p 308

195 Lubans, "Library User Studies," p 156

196 Zweizig, Douglas L "Predicting Amount of Public Library Use An Empirical Study of the Role of the Public Library in the Life of the Adult Public" Ph D diss , Syracuse University, 1973, p 279

197 DuMont, and DuMont, "Measuring Library Effectiveness," p 135

198 Zweizig, and Dervin, "Public Library Use, Users, Uses," p 246

199 Zweizig, "Approaches to the Study of Public Library Services and Users"

200 Lancaster, *The Measurement and Evaluation of Library Service*, p 386

201 Armstrong, Charles "Measurement and Evaluation of the Public Library" In *Research Methods in Librarianship Measurement and Evaluation*, edited by Herbert Goldhor, p 15 Urbana-Champaign University of Illinois, Graduate School of Library Science, 1968

202 Ibid , p 16

VITA

Ronald R. Powell is Associate Professor and Director of Graduate Studies in the School of Library and Information Science, University of Missouri—Columbia. He teaches in the areas of research methods, development of library collections, management of academic libraries and bibliographic instruction.

Prior to joining the faculty of the University of Missouri, Dr. Powell taught at the University of Michigan, directed the library at the University of Charleston, and served on the library staff of the University of Illinois at Urbana-Champaign. He holds a Ph.D. in Library Science from the University of Illinois, a M.S. in Library Science from Western Michigan University, and an A.B. in History from the University of Missouri.

Dr. Powell's research interests include library user studies, the evaluation of library services, and library education. He is the author of *Basic Research Methods for Librarians* (Ablex Press, 1985); coauthor of *Basic Reference Sources* (Scarecrow Press, 1985) and *Success in Answering Reference Questions* (Scarecrow Press, 1987). He has contributed articles to several professional journals including *Library and Information Science Research, The Library Quarterly, Journal of Education for Library and Information Science*, and *College & Research Libraries*.

OCCASIONAL PAPERS deal with any aspect of librarianship and consist of papers which are too long or too detailed for publication in a library periodical or which are of specialized or temporary interest. Manuscripts for inclusion in this series are invited and should be sent to: OCCASIONAL PAPERS, Graduate School of Library and Information Science, Publications Office, University of Illinois at Urbana-Champaign, 249 Armory Building, 505 E. Armory Street, Champaign, Illinois 61820.

Papers in this series are issued irregularly, and no more often than monthly. Subscriptions for 1987 may be established for $13.00 per year. At least five papers will be issued annually, beginning with number 178 for 1987. Individual copies of current or back numbers may be ordered each for $3.00 plus $.50 postage and handling. *All orders must be accompanied by payment.* Send orders to: OCCASIONAL PAPERS, Graduate School of Library and Information Science, Publications Office, University of Illinois at Urbana-Champaign, 249 Armory Building, 505 E. Armory Street, Champaign, Illinois 61820. Make checks payable to University of Illinois.