
Evaluative Research in the Library and Information Field

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ABSTRACT

THE KEY CHARACTERISTICS OF evaluative research (ER) are outlined. Raizen and Rossi's fine-grained model of ER in education is applied to the library information field. Using published and unpublished examples of ER in library and information settings, the field's strengths and weaknesses in the various types of ER are explored. It is concluded that the overall volume of ER is reasonably good in the library and information field, but that it is fragmented and noncumulative, lacking sufficient basic research and research on the impact of libraries and information services and products.

THE NATURE OF EVALUATIVE RESEARCH

In some regards, evaluative research can be distinguished from other kinds of research:

- It is usually used for decision-making (that is, it is applied—in contrast to basic—research. It is clearly a tool for problem solving).
- The research questions are derived from a program, usually a service offered to a client group.
- The research provides a basis for making a judgment about the program.
- The research occurs in the environment of the program application, not in a laboratory and not in the respondent's study (there is some disagreement over this latter characteristic).

The methodology of evaluative research usually represents a compromise between "pure" research and the demands and strictures of the

applied setting, between maintaining the integrity of the research and providing data that will be useful for decision-making (Weiss, 1972).

The differences between evaluative research and other research center on the orientation of the research and not on the methods employed. Evaluative research has a problem solving orientation, implying movement and adjustment as a program moves from ideation through testing to full implementation and subsequent correction.

In other regards, evaluative research is not very distinctive. Neither the orientation of evaluative research nor the techniques through which it is carried out are unique. For instance, evaluative research is embodied in the "evaluation of alternative strategies" step often included as an element in a strategic planning cycle. In marketing, evaluative research is implied in any effort to evaluate the market penetration of a new product.

Is it possible that the nondistinctiveness of its orientation and techniques results in the lack of deliberate attention paid to evaluative research per se in many fields, including, in this writer's estimation, library and information science?

Program Orientation

To be evaluative research, an investigation must focus on a program (a service or a product) and on a consumer (client or customer, actual or potential). Its sole purpose is to assess the affect of a program on its consumer (Ruttman, 1977). Furthermore, evaluative research ordinarily studies actual programs in the field. While either experimentally implemented or fully implemented programs may be the subject of the evaluative research effort, laboratory experimentation, in the sense of isolating the research from environmental influence, is rarely considered within the limits of evaluative research. Field experimental research is the rule where experimental research is employed.

While some writers insist that program is the focus of evaluative research, others assert with equal strength that the evaluation of internal organizational processes (such as the efficiency of staff or the cost of providing services) is essential in a full agenda of evaluative research. In this case, everyone is correct; for in the ideal, an internal process would be studied only as it could ultimately be tied to program affect.

Impact Orientation

Evaluative research seeks to discover causal sequence or the impact of a program on its audience. It necessarily strives to determine a cause-effect relationship.

Formative-Summative Dichotomy

Evaluative research is commonly divided into two classes—formative and summative. Formative is the type of evaluative research that occurs during a program's implementation in order to make mid-course corrections; formative evaluative research may therefore put

considerable stress on such interim elements as how resources are being applied to a program and on the initial response of the audience to the program. Summative research occurs at the end of the program or at the completion of one cycle of a program in order to assess the impact of the total program. It may reinvestigate much the same things as formative research but will also include measures of program effectiveness, or impact and overall program efficiency. Although not recommended as exemplary research reporting, Doelker and Toifel (1984) demonstrate formative evaluation in the library and information field. They report the development of a library instruction manual for university students; in very broad strokes they use evaluative data gathered periodically to help revise their approach during the process of development.

Evaluative Research Methodology

Within the general evaluative research orientation, any research methodology can be employed. The ideal form for evaluative research—Weiss (1972, p. 7) calls it the “classic” form—is experimental:

- the target audience exists in a given state;
- the state is measured and described;
- a treatment or program is applied;
- that new state of the audience is measured and described; and
- measures of the old and new states are compared for differences—that is, effect attributable to the program.

However, virtually any other technique of research may be appropriated for evaluative research. Many of these will be mentioned or discussed later.

Quantitative/Qualitative

Evaluative research is normally conceived in quantitative terms, but it can be equally valid in qualitative form. For instance, information systems ethnography, an almost anthropological assessment of information exchange and transformation processes, may be used to evaluate the success of a “program” or system of information exchange in narrative unquantified terms. For a text on the subject, see Patton’s (1987) work on qualitative methods for evaluative research, one of the volumes in Sage Publication’s nine-volume “Program Evaluation Kit.”

Nonprofit Focus

Evaluative research is most concerned with the nonprofit sector. Its overriding focus is on programs that seek to better individuals or society. Strictly speaking, one can evaluate a profit venture, but the term *evaluative research* is ordinarily reserved for the public nonprofit sector. Terms like *market research* or *cost benefit analysis* would be used in the private for-profit sector to describe what might amount to evaluative research.

Fugitiveness

"In evaluation, probably the majority of study reports go unpublished" (Weiss, 1972, p. 7). Evaluative research remains largely unpublished. Fields with a large number of consumers and substantial resources at their command—such as education and health care—have generated massive evaluation studies and many of these have been published. Even so, the published literature in these fields is probably the mere tip of the iceberg. Beneath the surface lies a mass of internal and often proprietary reports that are by accident or design not circulated beyond the confines of the program or organization evaluated.

A BROAD MODEL OF EVALUATIVE RESEARCH

Attkisson and others (1978) proposed a relatively simple model of the levels of evaluative research, the management tasks typically addressed at each level, and typical evaluation activities (methods) appropriate to the level and to those tasks. The levels of evaluation proposed were:

- systems resource management (concerning inputs to the management system, internal processes of management, and relationships with external governors and funders of the service program);
- client utilization (concerning client access to service, the quantities and quality of service delivery, and the consumption of service by clients);
- outcome of intervention (concerning effectiveness of the service program from the individual client's point of view, including satisfaction with the services used); and
- community impact (concerning the state of the target community both before and after service intervention).

The levels graduate from input-oriented to output-oriented, through impact on the individual, and, ultimately, impact on the larger community. Other analysts might paraphrase "systems resource management" as "process evaluation" and combine the other three into "program evaluation" (Chelton, 1987).

The Attkisson model is mainly useful in that it points out the essential differences between consumption of service or product ("client utilization"), and the *impact* of that consumption on the individual and the community ("outcome of intervention" and "community impact"). This will be addressed again in later sections.

A FINER MODEL

Raizen and Rossi (1981) offer a finer model of evaluative research for the field of education, its purpose being to parse the overall process of evaluative research into specific component parts (see Figure 1). Like the model of Attkisson and others, the parts are roughly in order of their occurrence. In the Raizen and Rossi instance, they appear more or less in

the order of tracking a program from conception through full implementation. Their premise is that questions related to policy trigger particular general evaluation procedures in which particular specific evaluation procedures or research methods are used. To extend the model beyond its education application, one may interpret "problem" to include "opportunity," and "beneficiary" to constitute "patron," "client," "user," "nonuser," or "target population."

Evaluative Research and The Model

Stated broadly, the Raizen and Rossi model requires evaluative research to utilize the results of research in order to develop a market position for a program, describe the program's efficiency, and describe the program's effectiveness. The model has considerable scope, encompassing research beyond the strict limits of the program focus and—contrary to Weiss—accepting laboratory research as a legitimate method of evaluative research.

The elements of the Raizen-Rossi model, singly or in related clusters, are discussed below as they apply to evaluative research in the library and information field. The discussion is highly selective. Since the literature of evaluative research is so large and so much of it is fugitive—often recorded in no more than intramural memos—comprehending evaluative research in a given field is not feasible. Moreover, to the extent that evaluative research is methodologically indistinct from other types of social research (see the introductory discussion), aspects of it are found in a wide variety of writings—from writings labeled evaluative research; to writings labeled operations research, field experiment, statistical report, white paper, research, evaluation, measurement, and many more; to unlabeled writings.

Since it is virtually impossible even to enumerate or to comprehend the writings related to evaluative research within the field, the view will be impressionistic and based on the author's selections.

<i>Policy Question</i>	<i>Evaluation/Social Research Procedure</i>	<i>Research Methods Used</i>
How big is the problem and where is it located?	Needs assessment	Assembly of archived data (Census, NCES, etc.) Special sample surveys Ethnographic studies

Raizen and Rossi's questions at this stage focus on identifying and typifying the client problem or need. In the library and information field, examples of archived data are to be found in the reports on academic, public, and school libraries that have been published by the National Center for Education Statistics (NCES) and in the national data collection effort for public libraries spearheaded by the Public Library Development Project of the Public Library Association. Such data have been used to determine at the most general level the major

Questions Arising During the Formation of Policy and the Design of Programs

<i>Policy Question</i>	<i>Evaluation/ Social Research Procedure</i>	<i>Research Methods Used</i>
How big is the problem and where is it located?	Needs assessment	Assembly of archived data (Census, NCES, etc.) Special sample surveys Ethnographic studies
Can we do anything about the problem?	Basic research	Assembly of archived research studies Specially commissioned research
Will a proposed program work under optimal conditions?	Small-scale testing	Randomized controlled experiments Pilot studies and demonstrations
Can a program be made to work in the field?	Field evaluation	Ethnographic studies Randomized experiments Field tests and demonstrations
Will a proposed program be efficient?	Policy analysis	Simulation Prospective cost-effectiveness studies Prospective cost-benefit analyses

Questions Arising from Enacted and Implemented Programs

Are funds being used properly?	Fiscal accountability	Fiscal records Auditing and accounting studies
Is the program reaching the beneficiaries?	Coverage accountability	Administrative records Beneficiary studies Sample surveys
Is the program implemented as intended?	Implementation accountability	Administrative records Special surveys of programs Ethnographic surveys
Is the program effective?	Impact assessment	Randomized experiments Statistical modelling Time series studies
Is the program efficient?	Economic analyses	Cost-effectiveness studies Cost-benefit analyses

Figure 1. The Raizen-Rossi Model. (From Raizen, S. A., & Rossi, P. H. [Eds.] [1981]. *Program evaluation in education: When? How? To what ends?* Washington, DC: National Academy Press, p. 41.)

lacunae in library services such as those libraries falling below certain collection sizes or those regions where populations do not have adequate library access.

For nearly forty years, special sample surveys have been abundant in the library and information field with the purpose of determining the nature and magnitude of a hypothesized problem. A central core of such studies has aimed to identify clients and their library and information needs. The so-called "user studies" have most often occurred at the local

level and less often at the regional, state, or national level. The published literature holds myriad studies of perceptions of services, uses of services, users of services, and user satisfaction with services of public, school, special, and academic libraries and various types of information centers. It is certain that many more exist in unpublished form.

At the level of individual needs assessment, library and information science faces all the problems, and more, of any organization undertaking market research. Chief among these problems are identifying the client's true—as opposed to idealized or generalized—reactions to products or services; and projecting likely reaction to a proposed—rather than existing—product or service.

There are two additional problems for market research in the library and information field. They doubly confound the measurement or projection of user reaction to various library and information services. First, the field's twenty years of experience in trying to determine the value of its services suggests strongly that the perceived impact of library and information services is more subtle (less palpable) and diffuse than the perceived impact of many other services such as trash collection, meals on wheels, or, for that matter, police protection. It is inherently difficult to question a client on the value of a product or service that is subtle and diffuse. Second, the library and information world, with few exceptions, has not adequately set its service objectives, especially with regard to impact. In most library and information settings, neither managers nor clients have defined the dimension of impact and established the criteria by which to judge its achievement.

There are numerous other "special sample surveys" which are not focused directly on the use or user but have fairly direct implications for services offered and their consequent impact. Fiske's (1968) classic study of self-censorship and book selection among librarians and White's (1986) more contemporary analysis of data on librarians' attitudes toward censorship are examples of efforts to name and locate a professional problem that will impact directly on the quality of collections in libraries. Another set of indirect examples can be found in the many unobtrusive studies, beginning in 1968, of the answers that libraries and information centers provide to unambiguous requests for factual information (Crowley et al., 1971).

A large number of user studies performed over the past forty years, both published and unpublished, provide some degree of market knowledge. However, the knowledge provided is limited, for these studies have often tended to:

- poll only users since they are easier to poll;
- utilize only the grossest demographics as correlates of library use such as education, sex, age, occupation, and income;
- measure reaction only to existing services without attempting to project reaction to possible future services; and

—focus solely on the library or information unit and thus gain a particular rather than global perspective on the clients and their information states.

There are exceptions to this dismal pattern. In the years immediately following the launching of Sputnik in 1957, there was a substantial effort to explore communication patterns and information needs in the scientific and technical communities in this country. Performed often under the heading of “information science,” the studies were global—not limited by institution or informational format—and they were generally methodologically creative. They generated broad insight into the doing of science as well as its communication and significantly advanced the understanding of information needs (Griffith, 1987).

Beginning in 1973, Dervin began developing a framework for assessing the global information need of the average adult. The framework has been improved and employed since then in a number of settings (Warner et al., 1973; Dervin et al., 1976; Chen & Herson, 1982; Gee, 1974). Wilson used a similarly global approach in her study of the information seeking activity of community activists. Focusing on a “critical incident” related to the subject’s interest, she described the information environment surrounding that incident and the effect of the information environment on the subject (Wilson, 1977). The study can be viewed as an evaluation of the impact of a social program (the public library) on the activities of the subjects and therefore will also be considered later in this article where program impact is addressed.

On a smaller scale, conjoint measurement has been used in academic libraries to identify client reaction to specific mixes of service characteristics. In this case, employing a parsimonious means of permuting features of library services, the study provided information for the market positioning of future services (Halperin & Strazdon, 1980).

Another approach that may enrich the field’s perspective on client requirements for a library or information system is ethnography. While specific ethnographic techniques—such as key informant interviews, daily logs, and participant observation—have been employed to gather data on client need, studies are almost invariably cast in the vein of the standard scientific method, addressing the study question in quantitative terms. In contrast, in information systems analysis the ethnographic approach has been espoused—and used—to determine the states and needs of system clients. Qualitative presentations such as narrative argument, chronicles, and social network analyses have long been used in the area of information systems to offer a richer, more natural view of the human elements of an information system than afforded by the heavily quantitative and rigid scientific method. A recent example is Zachary et al. (1984) who make a strong case for the use of the ethnographic approach for information systems analysis. Its application to the information system design for an office of the National Park Service is

reported by Zachary et al. (1986). At the library end of the spectrum, Werking (1980) reports on two instances of qualitative evaluation (calling it "illuminative") of user education programs in Europe.

<i>Policy Question</i>	<i>Evaluation/Social Research Procedure</i>	<i>Research Methods Used</i>
Can we do anything about the problem?	Basic research	Assembly of archived research studies Specially commissioned research

"Long-range support for basic research on educational processes is critical for the development of the fundamental ideas for education programs" (Raizen & Rossi, 1981, p. 43). To fulfill the obligations of this stage of evaluative research, a field seeks broad understanding of the problem and its determinants. This is the moment in the cycle of evaluative research where one seeks to relate dependent and independent variables, to establish cause and effect relationships for the phenomenon at hand—in this case a library or information service. Basic research can inspire the invention or adjustment of service programs by identifying the variables on which to concentrate organizational resources. For instance, knowing the variables that correlate with student learning of online searching may lead to the design or redesign of a specific program in an educational media center—perhaps attaching such learning to particular classes or teaching online searching through a particular modality.

The library and information field has a record of published activity for this phase of evaluative research. Perhaps the best overviews of basic research relevant to the field—whether done inside or outside the field—can be found in review publications—e.g., *The Annual Review of Information Science and Technology*, *Advances in Librarianship*, *Advances in Library Administration and Organization*, *Library Trends*, and review articles in *Library and Information Science Research*.

Considerable basic research has been performed in the areas of citation and cocitation patterns in scholarly literature, collection obsolescence and overlap, information transfer among individuals, and demographic correlates of library use. The recently reported work of Saracevic (1988) and others is a good example of a major piece of basic research, in this case developing models of online searching behavior.

However, for the field at large, one would not characterize basic research as vigorous. It is pursued almost exclusively by the small academic subset of the library and information field consisting of doctoral candidates and a few persistent faculty researchers, and it attracts meagre funding. On the library side of the field, most of the research funded in the field is applied in nature, seeking to answer a specific question in a specific situation; information science and information systems seem to have a stronger tradition of basic research.

Although there have been significant basic research studies in the field, library and information science has never had the resources, either human or financial, to concentrate on studying the determinants of consumption or nonconsumption of library and information services or, especially, the determinants of library or information impact. On any particular topic, basic research is sporadic, offering the field a patchwork of knowledge about its programmatic effects.

<i>Policy Question</i>	<i>Evaluation/Social Research Procedure</i>	<i>Research Methods Used</i>
Will a proposed program work under optimal conditions?	Small-scale testing	Randomized controlled experiments Pilot studies and demonstrations
Can a program be made to work in the field?	Field evaluation	Ethnographic studies Randomized experiments Field tests and demonstrations

The library and information field has experienced numerous demonstrations, field tests, and pilot studies intended to assess the feasibility and likely impact of new programs. Many of these investigations have been buried in local situations and have never been published so it is difficult to assess their impact. Many others, some of them local, others regional or national in nature, have been published. Support for this type of investigation has come from the local unit's own budget (company, school, municipality, university), the federal government (administered centrally and through state library agencies), and some state library agency budgets.

Demonstrations, field tests, and the like have been one of the two most popular forms of evaluative research in the library and information field (it is matched by studies of program reach, discussed later). Historic examples include the Knapp Project, a demonstration of excellence in school library service (Sullivan, 1968); tests of the Management Review and Analysis Program, an organizational development model in academic libraries (Webster, 1980); demonstrations of outreach services in the inner city in the 1960s and early 1970s (Lipsman, 1972); trials of information and referral services through public libraries (Childers, 1975). More contemporary examples include the Siegel et al. (1984) evaluation of two prototype online catalog systems; trials of integrating DIALOG labs into undergraduate courses (Ward, 1985); and prototyping an information system for the National Park Service (McCain et al., 1987).

The studies of Siegel and Ward illustrate some characteristics of this type of evaluative research activity in the library and information field. Field tests, studies of demonstrations, and the like commonly do not investigate the efficacy of one means of conducting a program versus another means, as in the Siegel report. Instead, as in Ward, one and only one solution to the problem is evaluated; alternative solutions to the client need are not explored.

Moreover, as exemplified in the Ward report, control groups are commonly not used, so the measurement of only the treatment group does not correct for the many possible sources of contamination of study results. As with many evaluations in this field, the concern seems to be with promoting a particular solution to a client need rather than rigorously testing that solution.

Properly randomized controlled experiments do exist. At a substantial level, one recalls Knapp's (1966) classic Monteith College experiment in library instruction. More contemporary and much more modest is the test of the effectiveness of a computer- versus card-form catalog (Armstrong & Costa, 1983), and Harris and Michell's (1986) assessment of the effects of gender and communication behaviors on competence at the reference desk.

<i>Policy Question</i>	<i>Evaluation/Social Research Procedure</i>	<i>Research Methods Used</i>
Will a proposed program be efficient?	Policy analysis	Simulation Prospective cost effectiveness studies Prospective cost-benefit analyses
Are funds being used properly?	Fiscal accountability	Fiscal records Auditing and accounting studies
Is the program efficient?	Economic analyses	Cost effectiveness studies Cost-benefit analyses
Is the program implemented as intended?	Implementation accountability	Administrative records Special surveys of programs Ethnographic surveys

For the most part, the above policy questions concern elements of internal control—i.e., cost, internal processes, and technologies employed in mounting a program. While there are published investigations of cost, processes, and technologies related to particular library and information programs, most of such investigations are probably buried in the files of the organizations for which they were performed. The more public of such investigations will be found as part of a budgeting document, a planning paper, a cost-effectiveness or cost-benefit study, an operations research exercise, or other management inquiry. They are also often evident in technological reports evaluating large service innovations. The New England Academic Science Information Center (NASIC) trial of online bibliographic search service to academics in the mid-1970s typifies one kind of analysis. It consists of a simple costing of activities engaged in during the trial period without attempting to compare alternative means of offering the service nor determining the relationship between cost and payoff to the user (Wax & Vaughan, 1977). Another example of an investigation of internal control, and one more consistent with the true orientation of evaluative

research, is the report of a Canadian trial of telefacsimile transmission for interlibrary loan. While the report does not include rigorous testing of alternative means of exchanging physical documents, it does compare the telefacsimile means with the traditional postal alternative in terms of costs and benefit to the user (Anand, 1987). White (1986) offers a unique approach to evaluation which addresses at the same time marketing strategy and "a library's ability to respond to social needs in the area of lifelong education" (p. 116). He proposes that a library examine its intentions and strategies for introducing an innovative program directed at social change (e.g., literacy or lifelong learning). To do this, one renders advertising copy for the program into the typically terse, communicative, and competitive language of the yellow pages. If one is unable or unwilling to do that, one must assume the program or its administration is in some way deficient. The method is wholly qualitative in nature, a relatively rare occurrence in the field.

There seem to be two recurring blindspots regarding evaluation and internal control elements in this field. One is that alternative means of achieving ends are rarely compared in terms of their cost and their payoff. Most often a single means is considered, and the power of comparing one means to another which, to a large extent, makes evaluative research evaluative, is lost. The second blindspot is that many of the costing exercises in the field tie costs to organizational inputs and administrative processes and fail to consider adequately the benefits to users. Thus cost, processes, and technologies are unrelated to the ultimate objective of the library or information organization and true evaluation, in the evaluative research sense, cannot occur.

<i>Policy Question</i>	<i>Evaluation/Social Research Procedure</i>	<i>Research Methods Used</i>
Is the program reaching the beneficiaries?	Coverage accountability	Administrative records Beneficiary studies Sample surveys

This phase, along with demonstrations, field tests, and the like, is one of the two phases of evaluative research which seems to be most often considered by library and information practitioners and researchers to be evaluative research. It is often seen as equivalent to a program's impact and substitutes for assessing how a program has bettered a person's life. More specifically, describing the reach of a library or information program is probably the most common means of assessing program impact in the field. Perhaps reach is a natural preoccupation, for most libraries and information centers assume that reaching as many of their assigned constituents as possible to be a mandate. Furthermore, it may also capture the field's attention because it is far easier to assess—being more concrete—than is true impact.

Studies of program reach have included population characteristics of users and sometimes nonusers of virtually every library and information service. These are often called community studies or community

analyses. Summer reading programs, bibliographic instruction, online searching, information and referral services, selective dissemination of information services, book display trials, and every other direct user service have been subjected to demographic analysis. Common user variables include age, sex, education, occupation, status within the client group (such as socio-economic status, student class, or organizational position), frequency of use of the library or information center, and nature of the services used.

<i>Policy Question</i>	<i>Evaluation/Social Research Procedure</i>	<i>Research Methods Used</i>
Is the program effective?	Impact assessment	Randomized experiments Statistical modelling Time series studies

The seminal question in evaluative research is the question of effectiveness. In the services realm, where one's ultimate objective is to make a difference in a person's or a community's life, the question may barely be answerable with existing research methodologies, or the research methodologies required may be so expensive as to preclude pursuing the answer.

In the library and information field, studies of reach far outnumber studies of impact. Perhaps it is because the former are easier to conceive and execute. Statements of reach have come to be used as statements of program impact in this field. Unfortunately, assuming impact from reach requires assuming that program consumption (e.g., a book circulated) is equivalent to program impact (improvement in the person's information base or increased decision-making facility). There is no evidence to support the assumption.

If one sees the ultimate mission of this field as optimizing the consumption of library and information services and products, impact on the person is irrelevant and true evaluative research, to the extent that it is concerned with an improved state of the individual, also becomes irrelevant. If one sees the ultimate mission of the field as improving the state of the individual, impact on the person must be considered, and one must engage in true evaluative research in order to assess the field's success or failure. Students of library and information science easily recognize that the field is quite ambivalent on this issue, its literature frequently espousing the mission of improving the person's state (decision-making ability, job performance, leisure happiness, creativity, political empowerment, etc.) yet rarely assessing the degree to which a person's state has been improved.

A major problem in evaluative research in the library and information field is that it is often not treated seriously. It is frequently added to a demonstration or full program implementation as an afterthought and without sufficient resources or sufficient expertise. It is often executed at an elementary level, contributing nothing to the field's overall

understanding of the impact of its programs. This is particularly the case in evaluating a program's effectiveness or impact. Frequently, the evaluation method is not integrated into the overall project, and thus, as often happens, true experimental research (with before and after testing) is foregone. Ex post facto research, with its very limited capacity to explore before-and-after changes in a person's state, becomes the only course of action. There are sufficient examples of impact evaluation in the field to show the way but not enough to characterize the field as one overwhelmingly concerned with its impact or effectiveness.

One example, again, is the Monteith College Library Experiment, a trial and evaluation of means of incorporating library services into the instructional program of a college. This was an extensive evaluation and utilized before and after testing as well as multiple measurements of impact such as improvement in performance on assignments. Qualitative measures were used. The evaluation was of the formative type, helping the development of the library-instruction program (Knapp, 1966).

A less ambitious example is found in an evaluation of a new year-round reading program for Los Angeles children, assessing children's reading activities before the program started and remeasuring it at the program's end. Although the findings did not support the hypothesis of improved reading activities, the investigation shows that the evaluation of impact can occur (Markey & Moore, 1983; Markey, 1986).

A third example is the study of impact on library skills of a program of bibliographic instruction at several colleges in the northern midwest. Surprenant (1982) employed before and after testing and control and experimental groups in a classic experimental approach.

WHERE DO WE STAND?

For the library and information field, reviews of evaluative research literature are rare, with Powell's (1984) review of evaluations of reference services being the only one located with that label. Several tutorials on evaluative research exist, including one for children's librarians, a series in *American Libraries* for general library evaluation, and another incorporated in a book on action research (Chelton, 1985a; 1985b; 1985c; 1986a; 1986b; Swisher & McClure, 1984).

Viewed simply in terms of quantity, evaluative research in library service appears reasonably strong. A search of *ERIC* and *Library and Information Science Abstracts* during the period 1982 through 1987 yielded approximately 140 items that indicated from their title or abstract that they dealt with evaluative research. It must be assumed, based on personal contact with library practitioners and program content at national conferences, that a substantial number of evaluative research efforts are carried out in the privacy of the individual library or through a collaboration among a few. An example of a substantial

internal effort, collaboratively done, is an unobtrusive study of reference service undertaken by Fairfax and Arlington counties, Virginia, and Montgomery County, Maryland (Rodger, 1984). Many such studies are never published.

The nature of the evaluative research effort in the library and information field varies from an ongoing, serious commitment (such as in the systems offices of a few major public libraries and numerous large academic libraries); to a periodic effort which relies on existing staff and is relatively simple in its methodology and limited in scope; to an occasional effort which involves existing library staff in collaboration with available local research experts; to no effort at all.

Evaluative research in the field is fragmented and noncumulative. And it is unsupported by the basic research that would permit wiser experimentation with programs, such as the value of electronic linking of networks for daily problem solving among the elderly. However, some of the basic research exists outside the field. Examples include the vast amount of research on reading and children, on adult basic education, and on organizational behavior.

Not all phases of evaluative research, as viewed through the Raizen and Rossi model, are equally attended to in the library and information field. Basic research and research on program impact constitute the most important areas of neglect—neglect which indicates that the field is not pursuing a full menu of evaluative research and that the keystone of evaluative research—program impact—is largely missing.

In the ideal, evaluative research seeks to discover how a particular program has affected people. In reality, service fields in general and libraries and information operations in particular often resort to evaluating not the effect of a program but program offerings (such as number of compact discs available for circulation in a new compact disc service) or program transactions (such as the number of circulations of the new compact discs). Of the three major evaluative research options—quantities and qualities of program (i.e., products or services) offered, quantities or qualities of program consumed, and impact of consumed program on the individual—this field has commonly opted to evaluate at the two least telling points in the service cycle—offerings and transactions—and thus has opted not to learn how it has affected people.

Much of the evaluative research in the field is of the post-fact quasi-experimental variety, when it would ideally be true experimental. In the former category, two studies by this author include an evaluation of Pennsylvania public library systems and the Five Cities information and referral center evaluation (Childers, 1988). Examples of true experimental design in evaluative research are to be found in McClure and Herson's study of reference effectiveness, wherein reference performance was measured, a treatment (training program) was applied, and performance was again measured; and in an in-progress evaluation of the effect of a technology innovation on three college libraries cooperat-

ing in its adoption (Hernon & McClure, 1987; Childers & Griffith, 1988). One of the constraints in adopting true experimental approaches is that federal and state timetables for grants and contracts have frequently disallowed sufficient time for pretest/treatment/posttest design, so that evaluation has been almost completely post-hoc or "pre-experimental" (Houston, 1972).

The practical bent of the field, too, and of many of those who have awarded funds for program and research, has resulted in there often not being a substantial effort devoted to evaluation. The result is often that persons whose desired role is executing a service program are required also to assume the role of evaluator—a conflict of interest in many cases, and a situation that one would expect to result in half-hearted and amateurish evaluation methods. (Reviews by this author of numerous papers submitted for publication and grant proposals support the latter proposition.)

To the extent that the field is inadequately developed in the Raizen-Rossi cycle of evaluative research, the field is inadequate in the mechanisms useful for problem solving; for evaluative research is fundamentally a problem solving tool. The efforts of the past forty years are encouraging. Although moving slowly, the field does seem to be making advances on various phases of the evaluation cycle. Yet it is obvious that there is substantial work yet to be done before the mechanisms and orientations necessary for a full cycle of evaluation will be available.

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