
Increasing the Usefulness of Research for Library Managers: Propositions, Issues, and Strategies

CHARLES R. McCLURE

ABSTRACT

THIS ARTICLE DISCUSSES THE importance of research for library management. As a means to increase the impact of research, a number of propositions are suggested. These propositions identify possible strategies for both researchers and library managers to better create and use research. Conceptual and practical issues also are discussed that affect the utilization of library research, and the article concludes by stressing that the utilization of research will improve only with a conscious effort on the part of *both* library managers and library/information science researchers.

INTRODUCTION

In a 1962 paper, Herbert Goldhor (1962) commented that "research can improve the precision and practical utility of even the best projects and practices," but he noted also that "some will no doubt feel that research methods are unable to grapple with the problems of librarianship" (p. 46). In a similar vein, Ernest R. DeProspero (1972, p. 1) concluded that "much of the research effort in librarianship whose objective has been to influence library policy has been ineffectual" (p. 1). More recently, in a 1988 study of the status of research in library/information science, the authors concluded that researchers and library decision-makers have yet to communicate effectively with each other (McClure, 1989).

With the passing of more than a quarter of a century since Goldhor's assessment, significant progress and increased sophistication have occurred in the development and application of research methods in

librarianship. Yet the degree to which research has, in fact, improved library practice is less clear. Goldhor's concern of 1962 that librarians believe that research is unable to grapple with the problems of librarianship is still very much with us in 1989.

Although some research can be characterized as basic and is not intended to produce useful findings or impact, much of the research in library and information science is applied or action research and is intended to directly affect practice. Thus a key concern is the degree of impact this research has had on library management. Library researchers would like to think that their studies have had an impact and cannot understand why library decision-makers ignore all that "good research" in the professional literature. And library decision-makers repeatedly dismiss that literature and ask researchers to deal with more meaningful topics and produce results with direct applications for *their* library. As a result, applied research frequently is short-circuited.

The perspectives offered in this article are based largely on the author's personal experiences in conducting a number of research projects in recent years. Readers interested in recent background literature on the general topic of research in librarianship may wish to consult works by Lynch (1984), Kater (1987), and McClure and Bishop (1989). Rather than review the findings and opinions noted in those works, this article considers the impact of research largely in terms of:

- producing relevant management data actually used for improved library decision-making;
- affecting the day-to-day process or activities by which decision-making occurs in a specific library, or
- changing attitudes toward basing decisions on empirical evidence as opposed to what some have called "seat-of-the-pants" management.

All of these facets of impact relate to Goldhor's assertion that research can improve library practice.

This article considers the role of research in assisting library managers to operate libraries more effectively. More specifically, it offers some propositions that appear to increase the impact of library research, identifies key issues related to the impact of research, and offers some preliminary perspectives about how the profession, as a whole, might better produce and utilize research for library decision-making. The article explores these key issues:

- Why are library researchers and library decision-makers unable to communicate effectively with each other about the production of management data useful for library decision-making?
- What factors tend to encourage high impact of research studies on library decision-making?
- How can both researchers and library managers better work together to produce and utilize research?

A discussion of these issues may assist the profession in moving toward a realization of Goldhor's vision.

CLARIFYING THE INTENTS AND TYPES OF RESEARCH

In the rush to cloak librarianship in credibility and respectability, the profession adopted many of the approaches and notions of scientific inquiry based on philosophies and procedures of the hard sciences. However, library and information science—as do many professions linked to the social sciences—frequently finds the expectations and requirements of research as defined by the hard sciences model to be unattainable or inappropriate. Reasons for this situation are numerous, but the nature of library/information science phenomena, emphasis on applied research, and the tension between a very large population of practitioners and a very small population of researchers are key concerns (McClure and Bishop [1989] suggest an estimated population of 300 or so active researchers and about 153,000 practitioners).

Basic Versus Applied Research

There are different types of research—each serving different objectives. Traditionally, the hard sciences model suggests that there is “basic” research and “applied” research. Until recently, conventional wisdom believed in the “trickle down effect,” that is, basic research was absolutely essential for applied research to occur. That perspective, however, is now under attack (Shapley & Roy, 1985).

There is, however, little basic research conducted in library/information science. As a field, it draws, primarily, upon a broad range of interdisciplinary social and behavioral science foundations which serve as both a philosophical and methodological basis for the applied research that is conducted.

Applied research takes the theory and concepts from basic research and, by formal methods of inquiry, investigates “real world” phenomena. Action and policy research, which can be considered as types of applied research, specifically attempt to identify problems in an organizational setting and—through a formal means of investigation—suggest strategies to deal with those problems (a description of the action research process can be found in Swisher and McClure [1984]). Development (which may not, in fact, be classified as a research process), is the application of existing findings and information to a workable process or product for a specific setting.

It is also important to note that basic and applied research are generally intended to have broad *external* validity (generalizability) whereas most action research and development are intended to have *internal* validity (the findings are accurate for one particular setting only). Increasingly, however, some researchers are suggesting that external validity for social and behavioral science research is unattainable. There simply are too many possible variables that may affect human

behavior in any given situation—thus predictability in the social sciences for a broad population may be an unrealistic goal (Guba & Lincoln, 1985).

Clearly the lines that separate these types of research are fuzzy at best. But, for library and information science, an interdisciplinary base of existing social and behavioral sciences may substitute for the “basic research” which is available in the physical sciences. There is little disagreement that, as a profession, library and information science fosters little research that is intended to produce “knowledge for the sake of knowledge.”

One might also argue that much of the research conducted in library and information science, while not basic, has no intent of assisting library management to improve overall library effectiveness. Rather, it might have been done to provide a historical perspective on some current issue, determine the validity and reliability of a new data collection instrument, propose propositions for further investigation, or test a specific hypothesis.

In short, there are different types of research each with different objectives. Some of that research has no intent to affect library practice and thus cannot be assessed against that criterion. But for research that is intended to improve library practice, there is still a significant communication and implementation gap.

Divergent Views on Conducting and Using Research

Many library researchers tend to concern themselves with applied research, investigating questions which stem largely from the social and behavioral sciences. But discussions about basic versus applied research are often false dichotomies since library decision-makers require action research and development projects if “impact” on decision-making is to occur. Two key factors help to explain this divergence of views toward conducting and using research.

The first factor is educational background. Researchers must complete an educational process that requires them to identify a significant original problem and conduct a research study which is acceptable to the norms of the academy. This process is built largely on inquiry methods developed under the auspices of the “scientific method” in the physical and natural sciences. The problem to be studied may or may not have anything to do with library practice.

Thus, with their doctoral degree programs, the schools have produced individuals who are competent in conducting research which is best described as investigating a rather narrowly defined problem which lends itself to research, basing that inquiry on social and behavioral sciences’ conceptual frameworks, demonstrating some analytical rigor, and, if possible, demonstrating an ability to analyze (quantitatively) original data. While a library may serve as a source for “data,” it is also possible that no direct contact with a library or related information

agency occurred during the research. It is hoped that the study results in a contribution to the conceptual underpinnings of the profession and has a broad degree of generalizability.

Library decision-makers frequently find themselves in managerial positions with maybe one formal course in library administration and no formal training in conducting or understanding research. Thus, with good reason, they are not familiar with a broad range of managerial techniques nor the "science" of managerial decision-making. Further, they lack the knowledge to conduct research on-site in the organization and in many instances are unable to intelligently "consume" the research that appears in the professional literature. But even if they could consume this research, they would find that the authors typically fail, as C. West Churchman (1964) has noted, "to transform the available information into a knowledge of action" (p. 33).

A second factor to be considered is reward structures. Because library researchers typically exist in an academic setting, they, with good reason, direct their behavior to activities that will be rewarded by promotion and tenure. The traditional triad here is research, teaching, and service—of which research typically is most important. Because of the educational background and the desire to maintain status and credibility in the university, after the awarding of the doctorate, researchers typically continue to produce applied research—if they produce any research at all (for a summary of recent findings on this subject, refer to Table 1 of McClure & Bishop, 1989).

The reward structure for library decision-makers also inhibits application of research in the decision-making process. Once on the job, these decision-makers find themselves operating under severe resource constraints with little time available for developing innovative managerial strategies or conducting research. Typically there are few rewards for those who do return to formal educational opportunities to obtain greater knowledge of either management or the research process. Interestingly, while other types of librarians—e.g., school and medical—have recertification procedures that require regular educational updates, such is not the case for academic and public librarians.

Thus library researchers and library decision-makers are of "two cultures" when it comes to training related to the research process. Much library research fails to fulfill a utility criterion for the on-the-job harried decision-maker. Frequently, even if the research was intended to produce data for use in library management, it fails to offer specific managerial strategies to act upon the research results. Further, researchers and library decision-makers operate under two entirely different reward structures. One largely ignoring contributions that a researcher might make to improve the practice of librarianship, and the other ignoring contributions that the librarian might make by conducting and utilizing research.

In general, then, library researchers are trained to produce applied

research with some generalizability. The research should be suitable for publication in refereed journals and it should advance knowledge. Library managers require action research that has high internal validity for their particular library setting. The research must be uncomplicated, specify implementation strategies, and solve problems. Clearly, these are two differing perspectives.

INCREASING IMPACT: A PRELIMINARY SET OF PROPOSITIONS

Increasing the impact of research on practice has been widely discussed in the literature of various professions. A useful discussion by Rothman (1980) offers a concise summary of specific strategies to increase impact, both for researchers and practitioners (pp. 172-75). In light of Rothman's list of suggestions, the earlier discussion of the competing two cultures between researchers and practitioners, and this author's personal experience in a number of recent research projects (see Appendix A), the following propositions are offered regarding research and the degree to which it is likely to have impact on library practice.

Research NOT initiated or at least agreed upon by those libraries or librarians most affected is unlikely to have much impact. Library decision-makers must first believe there is a problem to be solved before they are likely to be interested in research findings. In addition, those librarians who initiate a study or at least agree that a particular study is needed have made an initial and important commitment to implementing study results. It is very difficult to sell research findings to the profession without such initial interest and commitment.

The greater the interaction between the researcher and the primary stakeholders during the research project, the better the impact of the research for decision-making. Continuous interaction between researcher and library decision-maker encourages the production of a study that is relevant to both parties. Evaluation at the early stages of the study can help fine tune the study as it proceeds. Without such communication, the study can drift away from subjects of direct interest to the library and result in a report that relies too much on research jargon and fails to offer specific recommendations for implementing study results. When the researcher and the stakeholder communicate with each other during a project, reality therapy keeps the project on track.

Research results which do not include carefully designed, practical, step-by-step guidelines, for implementing results in a specific context are likely to have less impact. Frequently, researchers confuse identifying and providing information that describes the problem with developing specific strategies to do something about that problem. Simply identifying managerial problems and offering polemics about the situation is inadequate. Findings must be presented in clearly understood language and in a practical step-by-step approach for implementation.

However, the production of such practical manuals are less rewarding for researchers striving for promotion and tenure.

The greater the effort researchers make to produce broadly generalizable findings, the less likely the research will have an impact on practice in a particular library. Every library has unique organizational, political, and resource configurations that make "generalized" findings from traditional library/information science research very difficult to implement in that particular setting. However, most social science researchers are taught to conduct studies that stress generalizability rather than internal validity for a particular organizational setting. Unfortunately, generalizable findings are very difficult to implement in a specific setting.

Research designs and implementation strategies must consider politics and personality characteristics in individual organizational settings for impact to occur. The increasing complexity and uniqueness of library political settings and personalities requires study designs that take these factors into consideration. Study designs that have greater potential to assist in local library decision-making—e.g., case studies—typically are not highly regarded by the body politic of library and information science researchers. Yet it is these studies that have a better chance of choosing personality traits and politics as variables since they are two crucial factors that affect implementation of research findings. But the greater the attention paid to these variables in the context of factors for a particular organization, the less generalizable the results and thus, the less likely the research will be well-received by the academy.

The more practical library experience a researcher has or the greater the research skills and knowledge of the library director, the better the impact of a research study on library practice. The issue here is the need to bridge the gap between the two cultures of the researcher and the practitioner. Library and information science currently lacks sufficient numbers of researchers who can serve as a bridge between the two cultures. Applied or action research directed either by a researcher with practical library experience or by a librarian with well-honed research skills is likely to have a greater impact on practice since it is likely to exhibit increased awareness and understanding of both perspectives.

For research efforts to influence library decision-making or have an impact on library management, long time lines and specific attention to implementation are required. Generally, researchers cannot afford to pursue a topic over a long period of time. First, funding agencies do not have a history of supporting multiyear projects; they want a project designed and completed in a short period of time. The next year their priorities might change and it may be impossible for researchers to obtain additional funding to carry on that particular line of research. In addition, few funding sources provide for effective dissemination/im-

plementation support. The results are short time lines for the research, limited visibility, and little attention to implementing the results.

The degree to which a key stakeholder funds the project or commits other direct resources to the research project tends to encourage greater impact of study findings. Allocation of library resources to a research study encourages use of study results. There are numerous types of resources that the library might commit to the project—e.g., staff, material, equipment, facilities, data, etc. However, there are few models of “partnerships” in research where it is expected that the library will provide direct resources in support of a project. The price for such resource commitment, however, may be increased library control over the project. If researchers want to have significant impact on day-to-day decision-making in a library, they must have a library “partner” that has committed resources to the project.

When researchers serve as consultants, they greatly increase the likelihood that research findings will have an impact on library decision-making. Contrary to popular belief, important action research is conducted as part of consulting. The consulting model of interaction between a researcher and a client offers a powerful approach for increasing the usefulness of research. However, consulting is not likely to provide much support for a researcher’s promotion and tenure file unless it results in refereed journal articles and other types of publications.

In summary, if there is some validity to these propositions, research intended to be useful for library management should be initiated and supported by the primary users of such research; designed to encourage ongoing communication during the project between the researcher and the key stakeholders; be translated into practical procedures that can be easily understood; and take into consideration specific organizational constraints, personalities, and political agendas unique to that particular library.

Despite the best efforts to design studies with these propositions in mind, factors within the library also affect the impact of research on library decision-making. Clearly, numerous constraints can mitigate the use of *any* research regardless of its quality and the degree to which it is carefully crafted—for example:

- limited staff time and other resources;
- competency of staff to utilize research findings;
- attitude of the staff toward research and the research process;
- inability of library managers to accept findings which require change from the status quo;
- management style and philosophy of library managers; and
- limited reward structures that discourage change and use of research findings.

Depending on the library, such factors can be serious impediments to the impact of *any* research.

In addition, researchers must have a clear understanding of the context in which most library managers operate. Ackoff (cited in Schon, 1983) described this context as follows:

managers are not confronted with problems that are independent of each other, but with dynamic situations that consist of complex systems of changing problems that interact with each other. I call such situations messes. Problems are abstractions extracted from messes by analysis....Managers do not solve problems, they manage messes. (p. 16)

The techniques that many researchers learned as basic research skills—e.g., isolating only on a particular variable or small set of variables—simply do not lend themselves to producing research findings that help managers manage messes.

A FRAMEWORK FOR STRATEGIES

Given the problems identified thus far, the earlier listed propositions, and Ackoff's admonition, it is clear that any discussion of increasing the impact from library research is a complicated one at best. In considering this topic, there are both conceptual and practical issues that need to be examined.

Conceptual Issues

A recent paper by William Paisley (1985) notes that a much larger concept of information literacy is needed: "The future environments will provide extraordinary access to information but only to those who understand the algorithms of information seeking" (p. 73). He goes on to point out that what is needed is "processed information" (information analyzed and related specifically to an information need) as opposed to "object information" (descriptive information of things and events). This suggests that research findings couched in terms of "processed information" are likely to have much greater impact than those presented as "object information."

Paisley's comments point to the need for a different model for both seeking and using information—especially in the context of decision-making. Library managers may need to articulate better the "messes" or problems with which they are confronted. For their part, library researchers may need to do a better job of producing "processed information" that addresses these problems.

Donald A. Schon (1987) has offered such a model in his book *Educating the Reflective Practitioner*. This book describes how the professions can apply research techniques and educate new professionals. His approach is certain to be controversial because it challenges a number of long-held norms about the roles and relationships between the researcher/instructor and the practitioner.

Schon has proposed that there is a tacit knowledge, composed of a

“knowledge in action” and a “reflective knowledge,” that practitioners use as a basis for decision-making on a daily basis. He uses as an example the difficulty one might have in explaining how to ride a bike. While most know how to do this, it is very difficult to describe the decisions one must make to complete this activity successfully.

Perhaps the profession needs to rethink the traditional models of scientific inquiry in order to form better links between research studies and cognitive processes used by professionals during the decision-making process. Perhaps we need to draw upon the models of clinical education (Schien, 1987) and medical internships to keep communication lines open between researchers and library managers. Generally, library researchers appear to have a different model (a very rational one) for how decisions are made in “the real world” which differs significantly from the model proposed by Schon and the actual behaviors of library managers.

The conceptual context for applied research in librarianship does not appear to recognize the importance of “processed information” and “tacit knowledge.” The typical failure of researchers to consider factors related to the politics, personalities, and policy-making process within specific organizational contexts may be a reflection of this unbalanced conceptual context. There is a pervasiveness of politics in every organization and most applied research considers only the technical information—e.g., techniques of production, descriptions of activities, and assessments of observable phenomenon.

In terms of affecting decision-making, this is only half, or less, of the picture. The information that is likely to be more important is political information—e.g., “information that reveals the intentions and capabilities of others so that one’s own resources can be deployed more advantageously to advance one’s own objectives” (Uphoff, 1972, p. 37). Yet it is the political and policy perspective that is oftentimes lacking in library/information science research.

These concerns suggest that those library researchers wishing to have an impact on library decision-making must be much more knowledgeable about public policy, the policy making process, and the political context within which power, position, and persuasion are used by key stakeholders. Research findings *must* be presented in this context if they are to have an impact on decision-making. The field of public policy is replete with models and practical suggestions by which researchers in library and information science could increase the probability that study results are better utilized by library managers. Some useful introductory texts on public policy and policy analysis are Gilbert (1984); Jones (1984); and Majchrzak (1984).

Furthermore, the traditional model of rational versus political decision-making fails to consider “gut-level” decision-making techniques. This model of decision-making relies on instinct, ideology, or a “feel” for a particular problem or issue. “It is useless to hope that people in power who rely largely on intuition for decision-making will someday succumb to the seductions of social science research” (Miller, 1989). Thus the message is clear for researchers wishing to have impact on library decision-makers—select your target audiences carefully.

Practical Issues

Given these larger conceptual issues, there are a number of very practical issues that must be squarely addressed if library and information science research is to have a greater impact on library decision-making.

First, researchers need to understand that, generally, library managers need data that is "good enough" as opposed to data that has been shown to be reliable at the 95 percent confidence interval (McClure et al., 1986). This reality also flies in the face of what is typically taught as "good" social science inquiry. Managers need "good enough" data and are under severe time constraints to act upon problems; spending an additional five months to investigate a problem to ensure *statistically* reliable and valid data simply is not possible.

Second, reward structures for researchers in most schools of library and information science place applied research, consulting, policy analysis, and related forms of inquiry (especially those that do not generate refereed papers) in low esteem. Thus the needs of the profession—i.e., workable solutions to problems—and the reward structure of the university are in considerable conflict.

Practitioners who constantly point to the perceived "uselessness" of much library research have yet to come to terms with this problem: the research may have little value to assist in decision-making, but it does meet the demands of the university for generation of new knowledge and, not unimportantly, promotion and tenure. And one must keep in mind that it is the university that pays most researchers—not the library.

Third, the professional education of librarians and library researchers is currently geared to increase conflict between the needs of library managers and the abilities of librarians and library researchers. At the doctoral level, library researchers, for the reasons given earlier, generally are not trained to produce research relevant for library decision-making. At the masters level, students are not trained to become informed consumers of research—they are unable to articulate aspects of managerial problems as research problems, and they shudder at the sight of a chi-square. As a result, many practicing librarians have little knowledge of the research process nor do they know how to read and understand the research literature. Thus they are unlikely to act upon the research reports they encounter.

Fourth, there is a critical need for library researchers and library managers to become directly involved together on specific research questions and daily managerial problems that might lend themselves to investigation. Except for the consulting process (which many libraries cannot afford and for which researchers are unable to receive adequate university rewards) there are few mechanisms in place that encourage this partnership in research to occur.

A range of specific strategies to improve research in library/infor-

mation science have been suggested recently by McClure and Bishop (1989). But strategies aimed specifically at increasing the likelihood of impact on library practice include:

- Design and establish a program of “visiting researcher” positions in a range of library settings. A number of libraries have used this technique both to instruct librarians in the research process and to help a library researcher better understand research needs within the library.
- Establish consortia that identify specific research problems that need attention, ask libraries to subscribe direct financial support to address this problem, and produce research reports specifically intended to aid in decision-making. The Library Research Center at the Graduate School of Library and Information Science at the University of Illinois has used this technique and the Public Library Development Project was also established by such means.
- Formalize practicums between researchers and library managers (rather than in the context of educating MLS students). Such practicums are essential for library researchers and library managers to better understand each other’s perspective. Such practicums can be designed to investigate specific research problems.
- Recognize serious deficiencies and limitations in the ability of most library schools to produce professional librarians who can both conduct and understand research, given only thirty-six credit hours (typically) of library and information science education.
- Work to expand reward structures in universities that recognize professional activities and action research applications. Like it or not, the reality that schools of library and information science are first and foremost *professional schools* cannot be ignored.
- Consider national programs for the recertification, on an ongoing and regular basis, of both librarians and library and information science educators to ensure ongoing continuing education and professional development.

There is, however, an inherent philosophical conflict between the researcher taking a distant and objective view of a particular problem as opposed to one in which the researcher becomes actively involved in not only the research but also in encouraging the implementation of the research findings. Miller (1989) suggests that researchers can increase their impact on decision-making by taking proactive stances by strategies such as:

- Whistle Blowing*: If a researcher is left with an important study and no client, it may be necessary to force it into the decision process through whistle blowing.
- Job Shuffling*: Actively seek clients who at least will tolerate curiosity about the problem and who are willing to consider a study on the topic.
- Becoming Your Own Client*: By spending more time in a governing

role, you can control the first critical policy decision—whether to commission some research to address the topic or let decisions be ruled exclusively by special interests or the gut.

—*Improving Your Product*: Produce a range of products that translate the research into usable strategies for decision-makers.

Some researchers would find such strategies too self-serving. And once again, however, there are few tangible rewards for researchers who engage in such strategies. Indeed, it is more likely that such researchers would be disavowed by other researchers for becoming “personally involved.”

These, of course, are only some of the issues, and they are offered from the perspective of a researcher looking for strategies to link research to decision-making and to cement relationships between library managers and library researchers. Library managers may have different suggestions to accomplish these objectives. However, both perspectives are necessary if we are to improve the applicability of library research for library decision-making.

CONSTRUCTING BRIDGES BETWEEN RESEARCHERS AND LIBRARY MANAGERS

In 1962, Goldhor lamented the fact that there was little published on “how to conduct research in librarianship, or even on how to apply statistical methods to the types of data most often found in library studies” (p. 45). In 1972 he attempted to correct that situation with the publication of *An Introduction to Scientific Research in Librarianship*. This classic work represents one of the first major efforts at producing a research methods textbook for librarians. Since the appearance of that text, a number of additional research methods textbooks have been published.

Although the knowledge and sophistication of library researchers may have grown significantly in the last few decades, their ability to communicate research findings to library managers has not. DeProspero's (1972) admonition to library researchers still holds true today: “The fact is that those who accept the label of “researcher” must be more willing than they have been to find better ways of selling their products [and] more willing to reduce the mystique of the research process” (p. 20). The propositions and strategies suggested in this article offer a beginning point in response to both Goldhor's and DeProspero's concerns for increasing the impact of research on library practice.

The ongoing issue, however, is to demonstrate, in fact, that research *does* improve overall library effectiveness. Throughout Goldhor's academic career, he consistently argued that, “most libraries which constantly gather data and study current progress are the ones whose planning and decisions put them out in front as leaders not blind followers. They like to know what they are doing and why” (Wheeler et al., 1962, pp. 130-31). Apparently, a number of library decision-makers

have yet to accept Goldhor's conclusion and the gap remains between conducting research and using that research to improve library practice.

As this article suggests, the gap between library managers' need for management data to help them resolve problems, and the research community's ability to meet this need must be bridged. Indeed, drawing battle lines that are "we-them" oriented will only widen the gulf between library managers and library researchers. Clearly the profession as a whole needs to expand the dialogue on this topic and develop specific strategies for increasing the impact of research on library practice. Such strategies are both possible and feasible. However, library decision-makers, researchers, professional associations, schools of library/information science, and funding agencies must all work *together* to accomplish such an objective.

REFERENCES

- Churchman, C. W. (1964). Managerial acceptance of scientific recommendations. *California Management Review*, 7(1), 33.
- DeProspero, E. R. (1972). *The library researcher and policymaker: An observation here and a speculation there*. Washington, DC: ERIC Clearinghouse (ED 004 460).
- Gilbert, R. G. (Ed.). (1984). *Making and managing policy: Formulation, analysis, evaluation*. New York: Marcel Dekker.
- Goldhor, H. (1962). A plea for a program of research in librarianship. *ALA Bulletin*, 56(1), 44-46.
- Goldhor, H. (1972). *An introduction to scientific research in librarianship*. Urbana-Champaign, IL: University of Illinois, Graduate School of Library Science.
- Guba, E. G., & Lincoln, Y. S. (1981). *Effective evaluation* (1st ed.). San Francisco, CA: Jossey-Bass.
- Hernon, P., & McClure, C. R. (1986). *Improving the transfer and use of scientific and technical information, the federal role: Final report to the National Science Foundation*. Norman, OK: University of Oklahoma, Science and Public Policy Program (NTIS No. PB87-142923/XAB).
- Hernon, P., & McClure, C. R. (1987). *Federal information policies in the 1980s: Conflicts and issues*. Norwood, NJ: Ablex Publishing Corp.
- Hernon, P., & McClure, C. R. (1987). *Unobtrusive testing and library reference services*. Norwood, NJ: Ablex Publishing Corp.
- Jones, C. O. (1984). *An introduction to the study of public policy* (3rd ed.). Monterey, CA: Brooks/Cole Publishing Co.
- Katzer, J. (1987). *A look at library/information science research & methods*. Paper presented at the meeting of the Library Research Round Table, American Library Association, San Francisco, CA.
- Krathwohl, D. R. (1985). *Social and behavioral science research*. San Francisco, CA: Jossey-Bass.
- Lynch, M. J. (Ed.). (1984). Research in librarianship (Issue theme). *Library Trends*, 32(4).
- Majchrzak, A. (1984). *Methods for policy research*. Beverly Hills, CA: Sage Publications.
- McClure, C. R. (1986). A view from the trenches: Costing and performance measures for academic library public services. *College & Research Libraries*, 47(4), 323-336.
- McClure, C. R., & Bishop, A. (in press). The status of research in library/information science: Guarded optimism. *College & Research Libraries*, 50(2), 127-143.
- McClure, C. R., & Hernon, P. (1983). *Improving the quality of reference services for government publications*. Chicago, IL: American Library Association.
- McClure, C. R.; Owen, A.; Zweizig, D. L.; Lynch, M. J.; & Van House, N. A. (1987). The public library development project. In *Planning and role setting for public libraries: A manual of options and procedures*. Chicago, IL: American Library Association.
- McClure, C. R., & Samuels, A. R. (1985). Factors affecting the use of information for academic library decision making. *College & Research Libraries*, 46(6), 483-498.

- McClure, C. R.; Zweizig, D. L.; Van House, N. A.; & Lynch, M. J. (1986). Output measures: Myths, realities, and prospects. *Public Libraries*, 25(2), 49-52.
- Miller, T. I. (1989). Gut-level decision making: Implications for public policy analysis. *Journal of Policy Analysis and Management*, 8, 122-123.
- Paisley, W. (1985). 'Rithms of the future: Learning and working in the age of algorithms. In R. M. Hayes (Ed.), *Libraries and the information economy in California* (pp. 157-227). Los Angeles, CA: University of California, Graduate School of Library and Information Sciences.
- Performance measures for Oklahoma public libraries*. (1981). Oklahoma City, OK: Oklahoma Department of Libraries.
- Project upgrade: Planning, evaluating and measuring for public library excellence*. (1986). Salt Lake City, UT: Utah State Library.
- Rothman, J. (1980). *Using research in organizations: A guide to successful application*. Beverly Hills, CA: Sage Publications.
- Samuels, A. R., & McClure, C. R. (1983). Utilization of information for decision making under varying organizational climate conditions in public libraries. *Journal of Library Administration*, 4(3), 1-20.
- Schein, E. H. (1987). *The clinical perspective in fieldwork*. Newbury Park, CA: Sage Publications.
- Schon, D. A. (1983). *The reflective practitioner*. New York, NY: Basic Books.
- Schon, D. A. (1987). *Educating the reflective practitioner: Toward a new design for teaching and learning in the professions* (1st ed.). San Francisco, CA: Jossey-Bass.
- Shapley, D., & Roy, R. (1985). *Lost at the frontier: U.S. science and technology policy drift*. Philadelphia, PA: ISI Press.
- Swisher, R., & McClure, C. R. (1984). *Research for decision making: Methods for librarians*. Chicago: American Library Association.
- Uphoff, N. (1972). Information as a political resource. In P. Atherton (Ed.), *Humanization of knowledge in the social sciences* (pp. 40-57). Syracuse, NY: Syracuse University, School of Library Science.
- Van House, N. A.; Lynch, M. J.; McClure, C. R.; Zweizig, D. L.; & Rodger, E. J. (1987). *Output measures for public libraries: A manual of standardized procedures* (2nd ed.). Chicago, IL: American Library Association.
- Wheeler, J. L., & Goldhor, H. (1962). *Practical administration of public libraries*. New York, NY: Harper & Row.