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The Best Librarians: Who Are They?

In early October I was invited to speak on managing human resources at the fifth annual conference of the Oklahoma chapter of ACRL. Jeanette McQuitty from Northeastern State University, president of the chapter and main organizer of the program, told me that the issue of motivation was of considerable interest to many of Oklahoma’s academic librarians and might make a good focal point for my presentation. I agreed and began to work.

It was not very long before I asked myself the question, Why do we want a motivated employee or a motivated workforce? Slowly, several answers formed in my mind. These answers centered on the employee, the library as an organization, the user, and finally, our society. “Can Do: The Urge to Excel” was the title of my presentation. I sent this title to Jeanette along with a series of questions relating to my topic that she wanted in order to guide discussion at each table during the lunch break after my presentation. Discussion leaders were selected.

At one of these tables Georgene Timko, also from Northeastern State University and discussion leader, read my fifth question! “How do we create a climate where the striving for and achievement of excellence are basic norms?” The group was stymied. We grappled with the issue of excellence. We concluded that it would be necessary to search backward from the type and quality of services that are offered to the campus community for our answer. We went no further. At the time I wonder how we would define an excellent reference, instructional services, collection development, or catalog librarian. I didn’t have an answer.

The next day on the flight from Oklahoma City to Sacramento I read an article entitled “No. 1 in His Field.” It stated that this superior talent practiced his “art” with a rare skill: Some people disapprove . . . but I say if you get caught up in the old ways . . . you’ll never excel . . . The way I do things seems to please people. . . . Yes, I consider it an art form. And I work at it. I just hate to see someone with a lot of talent not work to enhance it. The talent might just as well not be there if it isn’t developed. An artist must work.

In commenting on this familiar figure, Bud Harrelson remarked, “The thing about Ozzie [Smith] is if he misses a ball, you assume it’s uncatchable. . . . If any other shortstop misses a ball, your first thought is, ‘Would Ozzie have had it?’” *Sports Illustrated* (September 28, 1987, p.65).

Many librarians dislike sport stories. But sports have great performers because they have standards of excellence: in golf, the lowest score; in tennis, the most sets; in field hockey, the highest score; in baseball, the fewest errors per chances. In academic librarianship we haven’t developed standards of personal excellence, but we need them.

In several future editorials I would like to feature a series of library superstars: librarians who excel in serving their campus communities. The focus will be on direct patron contact and services.
This individual should work harder, smarter, longer, and better than anyone else around. While recognized by you and campus users this person may be otherwise unknown. Publications are not necessary. Research is not necessary. Performance on the field, the user's turf, is the primary criterion.

Send the name of your nominee to Charles Martell, Editor, College & Research Libraries, California State University, Sacramento, CA 95819, and tell me why and how this person excels.

I'll put your choice within a context. I may even call you or your choice for more information. This can be a start toward developing our pantheon of heroes—the best librarians, those who excel in the trenches, where it counts the most.

CHARLES MARTELL

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Fairness in Book Fund Allocation

Jasper G. Schad

Efforts to improve book fund allocations have generally focused on developing better formulas, or models, that utilize quantitative measures to determine how the budget will be divided among various subjects. Librarians are attracted to the seemingly rational approach of formulas, but their potential to provide better allocations is limited by the environment in which allocation decisions are made in academic libraries. This environment is characterized by scarce resources, conflicting departmental goals, and a virtually infinite number of factors that affect the need for library resources. Each one of these considerations stimulates deep concern about the fairness and equity of allocations. Research on how recipients view their allocations and the process by which they are made offers insights that can help library administrators and collection developers to manage the allocation process more effectively.

Allocating book funds in academic libraries should be a rational exercise in making effective and responsible use of the acquisitions budget. All too often, however, extraneous factors work against such an outcome. Schad recognized the political nature of the problem, and Johnson and Rutstein vividly described how departments work to protect or increase their share of the budget. These papers brought to light an important dimension of the fund allocation problem but one that is only part of a much larger picture. The intensity with which individual faculty members and whole departments sometimes approach fund allocation represents something more than just trying to capture a larger share of the budget. Both the outcome and the process stir powerful emotions and generate deep feelings about fairness, equity, and justice. As early as 1953, Thornton realized that equity is an important consideration in the allocation process. McGrath, Hunt-singer, and Barber also mentioned equity. More recently, Bentley and Farrell saw the need for fairness. None of these papers, however, explored the concepts of equity and fairness further.

To understand why equity and fairness are so important, one needs only to examine briefly the environment in which allocation decisions are made. It is an environment characterized by scarcity, dissensus, and complexity. Scarcity lowers outcomes and requires people to make sacrifices. A low outcome alone may not create a problem, but an unfairly low outcome does. Normally, people do not worry much about fairness. If there is enough money in the book budget to buy what faculty members want, they are unlikely to be particularly concerned about how the budget is administered. When budgets decline and acquisitions drop, however, the same faculty members are likely to pay a great deal of attention to the issue of fairness and to scrutinize spending and allocating carefully in order to detect any sign of unfairness. Scarcity also increases the probability of unfairness by stimulating competition and self-interest. Dissensus flourishes in organizations that have no strong central authority and no common set of goals. This kind of environment is

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not unusual in higher education. Colleges and universities are often made of fundamentally autonomous departments whose objectives are varied, conflicting, and changing. It is not even certain that all departments see themselves as engaged in a joint enterprise. The existence of competing values renders attempts to forge an institutional perspective all but impossible. Even worse, the library can easily become an arena in which battles resulting from institutional discord are fought. Complexity, because it usually increases uncertainty, is the third element that heightens concerns about fairness.

Scarcity, dissensus, and complexity and the concerns about fairness they generate are the principal reasons why allocators like quantifiable formulas. They argue that formulas enhance the limitations of human cognitive powers and assist them in choosing from among many alternatives the one that optimizes the effectiveness of the book budget. In practice, however, librarians are more realistic. They recognize the limits of formulas but still defend them on the grounds that they appear fairer and that faculty are more willing to accept formula-based allocations.

In other words, librarians see formulas as a technique or strategy for defending themselves against challenges to the fairness and equity of allocations. It is important, probably necessary, to convince faculty members and departments that their allocations are fair. The question is whether a formula is the best way to go about that task. It certainly is one possible strategy, but research on what social psychologists call distributive justice suggests that other ways are more likely to yield better results.

Distributive justice is concerned with allocating resources fairly. There are many theories, all of which share a basic concept—individuals scrutinize their allocations in relation to those of others and the process by which they were made. When they appear reasonable, the allocations seem fair. If not, injustice is perceived. The way individuals react to allocations that they regard as unfair is termed retributive justice. Both the distributive and retributive aspects of allocating book funds are closely related. They can be separated in theory but not in practice. This paper examines the theories and research on distributive and retributive justice in terms of how the book fund allocation process can be improved.

"... individuals apply their own particular standards of fairness, which is to say that fairness cannot be measured against a single, absolute principle."

In judging allocations, individuals apply their own particular standards of fairness, which is to say that fairness cannot be measured against a single, absolute principle. It is pretty much what people think it is. The same allocation may seem fair to A but unfair to B. So long as different observers regard each other’s inputs, outputs, and needs as being of unequal value, disagreements are inevitable. Perceived unfairness triggers feelings of anger and efforts to secure restitution. One reason for the impact of retributive justice being so powerful is that emotions accelerate toward infinity as the situation worsens, whereas they decelerate only to zero as conditions improve. Interestingly, evidence suggests that partially correcting an injustice may not help; it may only intensify discontent by recognizing the original injustice.

Victims try to restore psychological or actual equity. Exactly how they go about it, however, varies from individual to individual and according to the circumstances of the situation. Reactions also depend on how persons weigh the costs and benefits of various approaches. When there is no hope for redressing an injustice, for example, people are not likely to complain forever.

**JUSTICE PRINCIPLES**

Outcomes are not the only concern of recipients: how the principles and procedures that shape outcomes are perceived are no less important. If allocators and re-
cipients are to regard an allocation as fair, they must agree on three things:

1. Principles that guide allocation decisions;
2. Measures that are used in applying those principles;
3. Procedures that are followed.

Even though building consensus on these principles, measures, and procedures is time-consuming, difficult, and likely to be only partially successful, it is still worth the effort, because an allocation that is perceived as fair will be more acceptable.

Three principles—need, contributions, and equality—may serve as the basis for an allocation. Whether or not the allocation process consciously adopts one of these principles, it will be governed by one or a combination of them.

The principle of need specifies that funds be distributed according to the particular requirements of each discipline. This principle serves institutions that regard the benefits to some departments as more important than the loss to others. Colleges or universities seeking to foster the development and welfare of key departments will find the needs principle attractive. It may also be used to enhance or sustain departments that are developing, expanding, or even experiencing enrollment drops (yet still need as much as a healthy, established department).

The principle of contributions stipulates that funds be apportioned on the basis of the degree to which each department contributes to the institutional mission. Colleges or universities employing this principle regard departments that contribute the most to the mission as making the best use of funds and deserving a larger share of the budget. The contributions principle represents an economic approach, in that what a department receives is output-governed. A formulation of this principle states a relationship between each department’s productivity and the resources it receives, the assumption being that inputs are related to outputs and that a larger allocation enables it to produce more. Which output measures a college or university prefers will depend on its mission. Research universities may prefer published research, graduate credit-hour production, and interlibrary loan transactions. Teaching institutions may favor student credit hours and circulation figures.

The principle of equality affords each recipient an equal share, regardless of differences in need or output. Because this principle does not specify exactly what should be equalized, it can be interpreted to mean that departments receive the same total amount or the same amount for each unit, say, the number of faculty members or majors. The principle of equality is more likely than that of contributions to use input rather than output measures.

Preference for one or more of these distribution principles depends on a variety of factors—institutional and individual. Institutional characteristics favoring one principle or another include the size of the college or university and the level of competition on a particular campus. Personal and competitive environments (typically found at large schools) are more likely to favor the contributions principle. Cooperative environments (typically found at smaller institutions) are more inclined toward equality. Where avoiding conflict is a paramount concern, equality will be preferred, because it avoids the need to make judgments about the relative merit of individuals or departments.

Put another way, friends, associates, or individuals who know one another (that is, have relationships with a past and a future) are more likely to divide resources evenly and to benefit the other even at their own expense. Such relationships strengthen adherence to rules of behavior that resemble a social contract.

Colleges and universities, however, are seldom so monolithic that a single or even a dominant principle can govern the allocation process. Departments and individual faculty members have their own goals, and they will defend principles that place them at an advantage. In most cases, some balance among the three will have to be maintained. Even then, circumstances and participants frequently change. As departments evolve, so do their ideas about what is needed for their well-being, and their preferences may change. Whatever degree of consensus exists at one
point in time is likely to break down quickly.\textsuperscript{19}

Individual or personal factors are more difficult to assess. Generally, the contributions principle seems fairest to most people,\textsuperscript{20} but individual preference for justice norms is highly variable.\textsuperscript{21} Even though individuals want to regard themselves as just, they adopt justice principles primarily in terms of what is in their own best interest. Because they want to deserve what they get, they need approval by others. For that reason, people usually work within certain boundaries. Rather than directly seeking more resources, they select and argue for the distributive principle entitling them to the largest share of funds being allocated and try to convince others to accept it.\textsuperscript{22} Their arguments may be couched in phrases alluding to fairness, but such language is only a thin veneer over an underlying effort to exploit these principles for self-serving ends.\textsuperscript{23}

Predictably, weak and powerful departments act differently. Weak departments are likely to argue for equality or need. Their more powerful counterparts do not use power unilaterally to maximize their own outcomes,\textsuperscript{24} rather, they develop arguments (usually for the contributions rule) to buttress their right to receive a larger share of the budget. They do get more resources, although they do not always have their way and receive everything due them by the contributions rule, and frequently agree to an allocation that is intermediate between contributions and equality.\textsuperscript{25}

"Even though individuals want to regard themselves as just, they adopt justice principles primarily in terms of what is in their own best interest."

The way participants view themselves and the process also affects their choice of principles. Allocators who believe that their ability to control the process results from chance are more likely to favor equality than are those who see themselves as having earned the right to make such a decision. Put another way, people who regard themselves as more deserving favor the contributions principle.\textsuperscript{26}

Despite extensive research, however, no comprehensive theory specifies which principle will be best for a particular situation, although it is possible to make some general predictions. Contributions is probably the most disruptive principle because it conflicts with generally accepted academic norms. It implies that different participants do not have the same value and tends to reinforce already strong departments by giving them the resources necessary to maintain or extend their advantage. Contributions-based allocations may also be incompatible with the kind of open decision-making process that is typical in higher education. Preference for the contributions principle declines when decisions are made openly and increases when they are made secretly.\textsuperscript{27}

The principle of need has considerable appeal in cases where departments are undergoing change (especially decline) and where fostering personal development is a common goal. Scarcity also seems to favor the needs principle.\textsuperscript{28} The equality principle is even more congenial to higher education because it generally supports relationships of mutual respect. People who work together regularly and share similar values like it.\textsuperscript{29} These findings suggest that small liberal arts colleges will favor equality, whereas larger, more diverse and anonymous universities will be more inclined toward contributions. Yet, in the last analysis, the complex nature of institutions and individuals is so varied and diverse that no single principle is likely to satisfy all participants.

**FAIRNESS RULES**

No matter how difficult it is to agree on allocation principles, people are more likely to achieve consensus on principles than on how they should be applied.\textsuperscript{30} The way principles are implemented determines how much each fund gets or, more bluntly, whose ox will be gored. Understandably, procedures will be subject to careful scrutiny. The appearance of fairness in the allocation process can be as im-
important as actual fairness. Procedural fairness helps to neutralize concerns about outcomes. There are six procedural rules—consistency, bias-suppression, accuracy, correctability, representativeness, and ethicality. 31

1. The consistency rule mandates that procedures be uniform over time. All participants must follow the same procedures, which must be applied to all recipients. Once standards are established, frequent, sudden, or marked deviation from them constitutes a violation of fair procedure. Likewise, procedures that have been in place for some time are likely to be taken for granted and raise few questions, regardless of how fair they may or may not be.

2. The bias-suppression rule obliges individuals to exclude personal or departmental self-interest from allocation decisions; one should not serve as judge of one's own case. Failure to separate the adversarial and judicial roles raises questions about fairness.

3. The accuracy rule specifies that allocations should be based on good information and informed opinion. Additionally, safeguards are necessary to ensure that data are not used opportunistically to enhance one's allocation.

4. The correctability rule requires procedures to remedy oversights and errors. The perception of fairness will be enhanced where avenues of appeal permit modifying decisions. Any barrier that prevents dissatisfied individuals from seeking redress reduces the perceived level of fairness.

5. The representativeness rule dictates that allocations must reflect the basic concerns, values, and outlooks of all departments. If a group is involved in developing or reviewing an allocation, it must represent every important segment within the institution.

6. The ethicality rule stipulates that allocation procedures must be fundamentally moral and ethical.

As with other fairness issues, individuals apply these rules selectively. Depending on the circumstances, one rule may be more important than another; or several rules may apply, some of which are contradictory or incompatible. To illustrate, consider the question of whether allocations should be made by individuals or by groups. The argument can be made either way. Consensual decisions seem fairer, because of the representatives rule. People believe that groups protect them because no individual or dominant coalition can impose its preference and disregard the group as a whole. Such is not always the case, however; where there is a high degree of uncertainty, a dominant majority and pressure for quick decisions, differing points of view are often suppressed.

The amount of available information affects the way groups make decisions and how those decisions appear to others. Situations in which there is a great deal of information and certainty are less likely to appear to violate the accuracy rule than are those in which there is a lot of uncertainty. By its very nature, however, the book fund allocation problem is characterized by uncertainty and by having no obviously correct solution. As the level of uncertainty rises, the degree of consensus necessary to obtain group agreement declines. In other words, minority opinions have more influence in complex allocation situations than they do in simple ones. 32 Thus, in an uncertain environment, committees must be especially careful not to violate or disregard the bias-suppression and accuracy rules.

"... in an uncertain environment, committees must be especially careful not to violate or disregard the bias-suppression and accuracy rules."

Finally, there is one other potential difficulty with committees. Some committees are reluctant to deviate from established procedures. Others, however, especially those that experience frequent changes in membership that bring different perspectives and commitments, often tinker with
In so doing, they ignore the consistency rule.

CONCLUSIONS

Despite extensive research, scholars have yet to organize their findings into a comprehensive theory that predicts precisely how people will react to specific events and outcomes and, therefore, exactly how to develop an allocation process for a given library. Moreover, existing research is limited in two important ways. Most studies afford participants more information than people receive in real-life situations, and they are conducted in environments where allocators and recipients are strangers.

Knowing more and not having to live with the consequences of a decision can produce experimental results much different from actual behaviors. Given such differences, the value of distributive-justice research is largely speculative and intuitive. The relationship between competition and scarcity illustrates this point. Scarcity encourages competition, and competition leads allocators to favor their own departments. Put another way, departmental loyalties are likely to override broader concerns for fairness when competition becomes intense. Despite this relationship between scarcity and competition, the most powerful impact is largely indirect. What heightens competition most of all is the perception of a finite sum of money to allocate.

A budget that contains only so many dollars means that department A's gain is department B's loss. In other words, it is a zero-sum game, but the process would be better if it were not seen that way. Allocations that award departments percentages of the budget emphasize the gain-loss relationship. Allocations that earn departments volumes suggest the deservingness of each department, irrespective of all others. Obviously, the budget is still the same, but it may help to focus attention on what is often the real problem— inadequate funding—and not on whether a particular department increases its share of the budget by a percentage point or two.

Finally, this caveat—creating feelings of fairness may not necessarily produce a good allocation. Formulas serve as a case in point. They are attractive mainly because they seem fair. The inherent danger is that they can become a kind of quasi-fairness that is an end in itself. Exactly the same risk exists with distributive justice. These principles and rules can be used simply to manipulate participants. Despite that possibility, the fact remains that a good allocation stands a poor chance of being accepted if the rules of fairness are violated. Even under the best of circumstances, allocation decisions are often heavily influenced by extraneous factors, such as campus politics and power. Recognizing that these distorting influences can never be completely eliminated, an understanding of the principles and rules of distributive justice and how they can be applied enables librarians to avoid many pitfalls. It afford them insight into the allocation problem and a wider array of options for managing the process in order to achieve a fairer and more acceptable outcome.

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32. Tindale and Davis, p.1160.
Tradition and Expertise in Academic Library Collection Development

Lawrence Thomas

The tradition of academic freedom in postsecondary institutions has produced organizations in which two modes, one for faculty and one for services, operate side by side. The issue of whether faculty or librarians have primary responsibility for collection development demonstrates the conflict inherent in this bimodal structure. During recent periods of relative affluence, many institutions gave librarians an unprecedented degree of selection responsibility. This raised questions about the kinds of expertise librarians must have and led, in many libraries, to the evaluation of collections. The controversial University of Pittsburgh study is compared with the National Enquiry into Scholarly Communications.

Collection development commands widespread attention even as technology threatens to render society paperless and, presumably, bookless. The success of recent collection development institutes attests to this. The topic is vital because developing library collections is a matter of complex human behavior requiring decisions affected by economics, politics, and scholarship. Spending a limited budget in order to bring users those sources of information most appropriate to their needs is challenging because of the many forms of human interaction required for its accomplishment. Inventing new ways to manage data with machines may create alternative forms of information but does not change the basic mission of collection development.

The purpose of this article is to examine how cultural traditions influence the day-to-day work of collection development in academic institutions. It is assumed that a better understanding of any specific operation within a university, such as the building and organization of library resources, can be gained by analyzing the workings of the parent institution. The influence of tradition is considered because it is a significant force in the academic environment.

The most obvious link between the traditions of academic institutions and their library collections can be found in how the organization makes and lives with its choices. If the parent institution has long-standing customs that guide its decisions, it is likely that these will exert an influence on specific operations. This influence is important because collection development involves the making of many decisions. Moreover, the influence of tradition is apparent not only in the process of choosing a course of action, but in determining who makes decisions, the methods by which they are made, overseeing implementation, evaluating effects, changing or rescinding decisions, and rewarding the people who make them.

Considerable research has been done on decision making, yet these studies rarely provide an overview of organizational behavior that covers the pervasive influence of tradition. Contributions to the literature of organizational behavior, however, do attempt a broader perspective. Two theories in particular are considered here.

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First, theorists agree that the present structure and operating style of colleges and universities have been determined to a great extent by the tradition of academic freedom and the extension of that freedom in the form of tenure. Because of the need to maintain the autonomy of the individual faculty member as a cultural priority, the classical, hierarchical structure has been modified. Thus, a kind of conglomeration has evolved rather than an organization in which departments and individuals are loosely related and highly autonomous. This contrasts with most profit-seeking corporations in which departments are highly integrated and have little autonomy.

This description of academic organization may adequately describe the faculty structure, but it does not apply to housing, purchasing, or other support services. In practice, universities prefer a closely coordinated model, similar to the typical industrial corporation. Academic institutions, therefore, tend to have two structures: a laissez-faire, or collegial structure for faculty, and a semi-autocratic, hierarchical structure for non-faculty. Along with hospitals and other professional organizations, these structures have been labeled “double-headed monsters.” In daily operations, they must cope with the issues that arise from conflict between the two modes of operation. Not to do so may lead to lower productivity.

Conflicts arising from the bimodal system are evident in the libraries on many campuses. Should librarians have faculty status? Should libraries be administered collegially or hierarchically? Should they report to the academic vice-president or the administrative vice-president? Should library directors be considered deans? These questions, basically related to classification, arise systemically in the typical academic environment: on which side of the fence do librarians belong? Much of their work requires the coordination and central control of the hierarchical organization, but much of it, collection development for example, requires an education like that of faculty in the academic disciplines. At the root of this uncertainty is the question of expertise, that is, who is better qualified to build the library collection, faculty or librarians?

Because higher education is responsible for providing society with properly credentialed experts, one might expect that universities would be exceptionally painstaking and skillful in delegating decision-making authority to those who have the most appropriate expertise. This is not always the case, however, as is illustrated by the question of who should be responsible for selecting library materials. Because academic tradition rather than an objective analysis of the requirements of the work decides who is best qualified to do the job, practice has a vexed history. To explain further, it is helpful to turn to a second theory found in the literature on organizational behavior. This is the notion that academic institutions, when selecting new faculty or when evaluating their subsequent performance, tend to place more emphasis on credentials and documented evidence than on determining their actual performance.

"Prior to 1960, authority for selecting library materials was almost exclusively in the hands of faculty. This is still the case on many campuses, especially small, independent, liberal arts colleges."

This sweeping claim may appear to be contradicted by stringent peer review procedures. The contradiction fades, in fact, when faculty are asked about how they are evaluated. One survey shows that criteria vary greatly in their significance. Research was the most influential factor in obtaining promotions and other rewards. Teaching was next in importance. This was true even though most faculty spent more time teaching than doing research. Of least importance was a category of other duties called "university service." Library liaison work falls into this category. From this evidence the argument
can be made that the peer review system is biased and applies criteria selectively so that their weighting does not necessarily correspond to the actual profile of an individual’s responsibilities. The system gives responsibility to faculty in areas, such as recommending new publications for the library collection, without ever asking how good their recommendations are.

Prior to 1960, authority for selecting library materials was almost exclusively in the hands of faculty. This is still the case on many campuses, especially small, independent liberal arts colleges. This practice originated as a simple extension of the institution’s traditional approach to assigning responsibility on the basis of disciplinary expertise. The underlying principle is that as a subject specialist the faculty member is the logical choice to have collection development responsibility.

For many years, this rationale was unchallenged or at least unexamined. In time, however, librarians and other academics began to express dissatisfaction with collections built exclusively by faculty. By today’s standards the earliest observations of this nature were based on rather primitive evaluations, but they were sufficiently accurate to initiate and sustain a serious questioning of prevailing practice. Though the principle of giving collection development responsibility to subject specialists on the faculty seemed sound, there was a persistent sense that in many instances it did not work. It was difficult for librarians to be critical of the system and for administrators to respond to that criticism because it challenged faculty authority. This also suggested that because library collections were costly, the effectiveness of faculty book selection decisions should be evaluated. Lacking information on the quality of collections, academic administrators generally could not take corrective action even if it was warranted. Faculty were free to choose new books as they saw fit. Many, of course, executed this duty with skill, but some did not.

During the sixties, when academic budgets grew at an unprecedented rate, collection development work became too burdensome to be accomplished exclusively through faculty control. Faculty were teaching more students, doing more research, and publishing more. They did not have the time to make the many selection decisions that were required. Increasingly they asked why they should be doing the library’s work and, generally, were relieved when librarians assumed more responsibility for selection. The trend of gradually transferring authority for the collection from faculty to librarians has not been entirely completed.

The significance of this shift of responsibility lies in the fact that it is a de facto modification of a basic, well-established tradition. It is important to note that this was done solely as an expedient way of coping with overwhelming workloads. The change in practice may be inconsistent with tradition, but many faculty continue to believe that total control over the selection of library materials is properly their responsibility. They may be surprised or even angered when local practice limits their role in collection development. They may not like to be constrained by collection policy, or by sharing selection responsibility with librarians. Certainly they would resent having their recommendations rejected by the library. In such a situation the conflict between old and new attitudes can make it very difficult to establish good working relations between librarians and faculty.

Large acquisition budget increases are now infrequent. Nevertheless, few institutions have reinstated exclusive faculty control. Not all librarians have been granted greater control over collections, but generally the new arrangement has wide acceptance. And it seems to work. How well it works has not been determined.

Expanding the authority of librarians in collection development logically leads to the question of whether they must now bring new forms of expertise to their role. One approach is to challenge the assumptions underlying the old practice of relying on the faculty. Is it true, for example, that the person who knows a subject best is the best person to have collection development responsibility? Is it true that the person with a Ph.D. has the breadth and cur-
rency of knowledge about information resources that are required to maintain a viable collection? By definition and by tradition, the faculty are research specialists. Their primary loyalty is often to a profession rather than to the institution. The library, however, must assemble collections that serve narrow subdisciplines as well as the multidisciplinary needs of the community as a whole. Thus, the scope of faculty interests does not necessarily match those of the library. The critical question is, therefore, whether faculty members can change their perspective to address library and campus needs. In many cases, the answer is yes, but the Ph.D. as credential does not logically or necessarily assure that outcome. Specialized knowledge in a discipline may be necessary, but it is not the only form of expertise required for effective collection development. There is another equally important set of skills. Indeed, the most serious deficiency of faculty-dominated book selection was the failure to recognize the need for any other type of expertise. Describing and defining these skills would improve our understanding of how increasing the librarians' responsibility for collections changes their role in academic life. While that task is not the purpose of this paper, it is important to note that there is one common trait. They all deal with the practical problems concerning the selection of materials: allocating scarce funds on the basis of program needs, evaluating patterns of use, introducing new electronic technologies as an alternative to printed sources, weeding the collection, maintaining productivity, preserving the collection, and so on. In this regard, the term collection management is probably more accurate than collection development, as the former suggests concerns that are more managerial than academic in nature.

In the affluent sixties many libraries were more concerned with the rapid selection and acquisition of materials than with making the most of a limited budget. The need to deal with a limited budget, however, became increasingly urgent in the seventies and eighties. It became vital to entrust collection building to people who could be objective and rigorous about the priorities necessary to maintain viable collections, people whose abilities went beyond subject knowledge to include good collection management skills. Librarians increasingly were expected to complement faculty subject expertise with these additional skills. Accordingly, their authority was expanded.

"The slow migration of this responsibility from faculties to libraries is "one of the most significant and original contributions to the growth of professional librarianship in the United States."" The slow migration of this responsibility from faculties to libraries is "one of the most significant and original contributions to the growth of professional librarianship in the United States." The repercussions have been evident. For example, the shift in responsibility has strengthened the case for faculty status for librarians, since they have assumed what were once predominantly faculty responsibilities. In collection management, too, the expanded role of librarians has been significant as many initiated systematic evaluations of collection quality.

For generations librarians had expressed misgivings about the adequacy of collections built under the faculty-dominated system. However, it was difficult to confirm or dispel these suspicions due to the prevailing politics of the bimodal academic organizational structure. Librarians, typically nonfaculty, were not expected to criticize faculty. Library collections, however, because of their high cost, had attracted the concern of many academic administrators, especially those who believed that more control over the academic sector was needed to operate effectively within reduced budgets. They wanted to know if less money could be spent on library books without harming the teaching and research programs. Therefore, at some institutions, librarians...
discovered that they not only had the freedom to conduct collection assessments, but they also had unprecedented support from the central administration for such reviews.

Before 1950 most studies of library collections took the form of descriptive surveys that drew heavily on information provided by faculty. The 1933 review at the University of Chicago stands as an early exception, but very few were analytical or systematic in their approach to correlating strengths and weaknesses in the collection with program needs.

In the years since the Chicago study, libraries have conducted many critical collection evaluations, and a sizable literature on methodology has come into existence. In 1979 the University of Pittsburgh published the alarming results of a major analysis of how its library was being used. This study attempted to prove that too many books were unused. Its conclusion that nearly 40 percent of all books had not circulated during the first six years after being accessioned seemed to substantiate that claim. The wastefulness and misjudgment implied by the Pittsburgh study moved many academics, including librarians, to launch a vigorous attack on the study’s methods and, thus, on the validity of the results.

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The intensity of the controversy provoked by the Pittsburgh study is indicative of conflicts inherent in the academic tradition. In one sense, the study appears to be an indictment of faculty because it demonstrates that there has been substantial waste of financial resources in an area where faculty traditionally have had primary responsibility. However, many have seen the study as an indictment of the quest for cost-efficient management in the academic environment. As one critic states, the study "does not demonstrate a comprehension of the purpose of an academic research or university library."

From the first perspective of seeking to prevent wastefulness in the library, it seems obvious that avoidance of such mis-spending would improve the effectiveness of current programs. This is generally the point of view of administrators. The opposing perspective, usually that of the faculty, is that library collections should reflect current publishing in the disciplines regardless of current or prospective use of the material. These conflicting points of view are rooted in a larger issue, the tension between the needs of the institution and the needs of the academic professions. Institutions, especially in periods of fiscal constraint, are primarily concerned with acquiring only the resources their programs need. They are at the mercy of their local fiscal problems. Academic professions, however, are concerned with advancing knowledge in the disciplines on a world scale, and the support of academic institutions is essential to their success. Therefore, it seems almost inevitable that by granting collection development authority to faculty, a group whose first loyalty is to their profession, without stating guidelines for their accountability, library collections will tend to reflect the interests of the professions rather than the needs of the institution.

Many academics believe that a symbiotic relationship exists between universities and the professions. Nurturing this relationship is essential to the health of both organizations and to the advancement of knowledge itself. In their pursuit of greater cost-effectiveness at the local level, however, institutions may jeopardize this relationship. This threat may be apparent in areas such as collection development where the reduction of faculty authority and the increase of administrative control may lead to the imposition of economic controls based only on a narrow interpretation of campus needs. From this perspective the main failure of the Pittsburgh study was that it did not acknowled...
edge the “library problem” as a symptom of a much larger problem. When, in the final report, the issue of unused books is addressed, it is stated that the answers “are likely to influence librarianship and libraries in dramatic ways.” It did not say that the answers were also likely to influence teaching and research in dramatic ways.

At the time of the Pittsburgh study a sense emerged that dysfunctions such as the “library problem” could be better understood by examining the total system of scholarly communication. Indeed, other groups were also experiencing difficulties. In the mid-seventies, the American Council of Learned Societies (ACLS) responded to concerns throughout the academic community by conducting a nationwide enquiry into the state of scholarly communications.12

The ACLS survey, commonly known as the “National Enquiry,” took a broad perspective and, unlike the Pittsburgh study, it did not present preconceived conclusions. A respect for the cooperative nature of scholarly communications is reflected throughout the enquiry’s final report and recommendations. Emphasized is the need to foster voluntary consultation among the members of the system by building a better understanding of how the whole system works. To this end, the Office of Scholarly Communication was founded in 1984. It supported a continuing critical monitoring of all aspects of the network. More recently, the Association of Research Libraries turned its attention to the influence of the broader environment on libraries by establishing its own Task Force on Scholarly Communications.13

Though different in their methods, both the National Enquiry and the Pittsburgh Study focus on the common issue of cost-effectiveness in scholarly communication. This is fundamentally a question of reconciling ends and means. Can scholarly activity use financial resources more efficiently without impeding the advancement of learning and creativity? Or, stated from another perspective, can the growth of knowledge be accelerated by eliminating waste and improving efficiency within the scholarly communication system?

Phrasing the question the first way implies that the levels of efficiency or conversely, wastefulness, proper to scholarship are not yet known, and that the search for improvement must address the needs of the total system. John William Ward, president of ACLS, takes this position:

Without the participation of scholars, the system will evolve according to administrative, financial, and technical imperatives. The great danger is that we will end up with a system of scholarly communication which will be economically and technically viable, but not intellectually desirable.14

The implications of the second formulation of the question, however, are more serious. As stated, it assumes that the existing system is wasteful, and that scholarship will be served best by eliminating waste as quickly as possible. Despite these differences in perspective both studies seem to agree on one major point: more money is not the answer.15

In 1985 the ACLS conducted a second survey.16 In that study, 45 percent of the respondents viewed book holdings in their campus libraries as only “fair” or “poor” in meeting their research needs. Thirty-five percent said the same about journal holdings. This suggests that there are many scholars who find collections to be inadequate. The contradiction between this conclusion and the claim of the Pittsburgh study that collections are significantly underused remains to be explained. Are collections too large or not large enough? Is the selection of materials effectively coordinated with campus programs? Or is research too capricious and wide-ranging to permit the development of strong collection support? Questions like these can only be answered after establishing wider agreement on what constitutes adequacy.

Cost-effectiveness should be a basic objective in managing library collections. It is difficult, however, to plan and develop collections economically when fundamental issues about authority, expertise, and purpose remain open. As these problems are rooted in traditions that shape faculty
behavior, local administrations are not always willing or able to establish policies that provide clear guidelines for the managers of information resources, especially if doing so means encountering faculty resistance. The daily work of managing academic library collections, therefore, is typically done despite fundamental ambiguities that have yet to be resolved. Though faculty and librarians working in a cooperative spirit may make the best decisions they can on a daily basis, the challenge of economically yet systematically building more effective collections persists.

REFERENCES

Librarians and Faculty Members: Coping with Pressures to Publish

Robert Boice, Jordan M. Scepanski, and Wayne Wilson

Matched groups of librarians and faculty members demonstrated similar styles of coping with new pressures for scholarly writing. While external observations and self-reports of librarians confirmed that they had longer workweeks (on campus) than did faculty, both groups evidenced sufficient time for scholarship amid busy schedules. Moreover, neither group took advantage of directives for using available time for writing. These librarians and faculty claimed to be too busy to publish but other constraints such as insecurities, entrenched work habits, and unsupportive workplace cultures appeared to be the most significant factors accounting for their failure to pursue scholarly writing projects.

Librarians' struggles with faculty status bring to mind an old maxim: happiness isn't so much getting what you want as wanting what you get. Many academic librarians who have achieved that status show an uneasiness with their prize. Elevation to faculty status has heightened the role conflict librarians experience between their commitment to library users and to scholarship, and from the pressures to publish. Moreover, librarians who value their status as faculty members wonder about the fairness of being compared to traditional faculty whose schedules seemingly permit more time for scholarship.

The literature of academic librarianship abounds with articles expressing ambivalence about faculty status. However, librarians have failed to establish, in any verifiable way, that they face unique pressures and problems resulting from the conflict between the demands of faculty status and the provision of public service. Until they document their problems, librarians may be doomed to an unresolved ambivalence.

The lack of comparable literature about traditional faculty may account in part for the scarcity of solutions. Consider, for example, that the majority of faculty work on campuses where pressures to publish are new, unexpected, and generally unwelcomed. These faculty, like librarians, worry about a decline in morale and assume that research and scholarship can grow only at the expense of service to students.

Examining this parallel literature can offer, in addition to the opportunity to commiserate over similar problems, solutions...
to the most serious concern: how to combine service or teaching with scholarship.

One such study began with a reexamination of traditional assertions about teaching and scholarship. First, it became apparent that long-standing negativism among faculty members about their ability to perform both activities well was based on questionable evidence. The few empirical investigations show either no relationship between teaching and research or only a slight indication that the best teachers tend to be researchers. Second, it became apparent that conclusions about the connection between teaching and scholarship should be based on direct tests. Studies were reexamined that reported cases in which faculty were directly rewarded to improve in both categories. In such a context, teaching and scholarship became mutually facilitative. In other words, widespread beliefs that excellence must be confined to either teaching or research were shown to be questionable.

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Another popular view is that most professors, especially those with heavy teaching loads, are too busy for scholarship. Proof for this claim typically rests on self-reports by faculty that they work fifty to sixty hours a week. Here again, reexamination of claims brought a new perspective: while faculty may actually believe their estimates of length of workweek, their self-reports are often exaggerated. Where workweeks have been observed directly, their length has been much shorter. Longitudinal studies of faculty members help explain why they overestimate their workloads and underestimate their capacity for scholarship. Many faculty do not manage their time well. Some, also, do not know when they have fulfilled certain obligations and, as a result, spend more time than is necessary on these activities. Moreover, faculty maintain views about scholarship that undermine realistic attempts at writing for publication. They often believe, for example, that effective writing requires large, uninterrupted blocks of time. In fact, it has been shown faculty tend to be more productive when they write in daily sessions of thirty to forty-five minutes.

The present study is an initial attempt to reexamine librarians' concerns about faculty status as they relate to publishing. It addresses the questions of how librarians spend their time, if they have time for scholarship, and if scholarship can be accomplished without undermining service to library clientele. To provide preliminary answers to these questions, this study adopted an economical but direct method for observing and analyzing how librarians spend their time.

The focus of this study is unusual in research on librarians. It assumes that librarians and faculty resemble each other more than either group realizes, and it examines the possibility that librarians, like the faculty at large, do have sufficient time and background to meet the demands of scholarship.

METHODS

Subjects

The twelve librarians depicted here have full faculty status at a large university. Their salary schedule is identical to the teaching faculty. They have ranks equivalent to the professoriat and are eligible for tenure and sabbaticals. They also have representation in the university’s senate, councils, and committees on the same basis as the teaching faculty. As members of the union that represents the faculty at large, librarians are by a negotiated agreement expected to work an average of forty (40) hours in a seven (7) day period. The twelve subjects are all tenured. They represent each of the four academic ranks, and, with one exception, work in public service areas. The subjects have little or no supervisory responsibilities. Each volunteered to be visited on a ‘‘spot observational schedule’’ by one of
the authors and to maintain daily records of their work activities for a period of at least one year.

The comparison group of twelve faculty members came from two large universities, four of them from the same campus as the librarians studied. This sample of faculty members was selected according to a larger collection of observations on the basis of gender (four males are in the librarians group) and years in service (all have ten or more years of work experience). All the faculty members in the sample came from campuses where pressures for scholarship, research, and publishing were seen as relatively new.

**Enlisting Participants**

Getting faculty members or librarians to agree to weekly visits by an observer is not necessarily difficult. Recruitment was aided by the support of administrators. The dean or the library director agreed to invite the observer to speak about the nature and aims of the project and also underscored the potential value of the project, as well as working behind the scenes to coax (but not coerce) individuals to volunteer.

The aims and goals presented to participants during the meetings arranged by administrators can be abstracted as (1) descriptions of the self-report sheets and of the observer’s visits; (2) clear assurances that information about individuals would remain confidential and that reports of findings would assure anonymity; (3) explanations of why documenting how time spent and how one handles pressures for scholarship is important in helping librarians and faculty to flourish (and in educating higher administrators about changes and supports necessary for overall productivity); and (4) answering questions, especially from those concerned that scholarly demands would pressure them to abandon good service.

**Self-Report Forms**

Table 1 shows the basic format of the self-report sheets that both groups completed each week; faculty and librarians indicated with arrows on each sheet the length of time spent on particular activities. Activities were coded from the categories listed at the top of the sheet. Ratings of intensity and enjoyment indicated participants’ estimates of how hard they felt they were working and how positively they felt about what they were doing at the time (1 = no intensity or no enjoyment, and 10 = maximal intensity or enjoyment).

The observer, in weekly, unannounced visits to participants, provided an important check on the objectivity of the self-reports. At this time the observer typically checked off (1) his own classification and rating of the ongoing activity and (2) whether or not the participant was maintaining the self-report form. Most participants reported that maintaining verified self-reports on a daily basis led to very different accounts of workweeks than they had previously thought or reported in other surveys.

**Tracking Participants**

Except for a few instances when either participants or the observer were away from campus, all twenty-four individuals were observed weekly over a seven-month period, which began prior to and ended after the spring semester. Potential times for visits were arrived at by reviewing self-report forms that indicated regularly scheduled activities, information solicited about future plans, and administratively issued schedules. Each weekly visit lasted between ten and twenty minutes.

Where practical, tracking visits were planned to sample the typical range of on-campus activities of each participant. In visits where participants were actively working with students, (e.g., classroom lecturing or with library users, e.g., conducting an online search), the observer remained unobtrusive. During visits where participants had lulls in activity, the observer encouraged them to talk about their work. On occasional preplanned visits, all members of a sample group were asked a standard “question of the week” (e.g., describe the most satisfying event that occurred recently in your professional work.

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*November 1987*
TABLE 1
SAMPLE SELF-REPORT SHEET FILLED OUT WEEKLY BY LIBRARIANS

<table>
<thead>
<tr>
<th>Code</th>
<th>For Each BN meme</th>
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</thead>
<tbody>
<tr>
<td>B</td>
<td>break</td>
</tr>
<tr>
<td>CD</td>
<td>colleg. development</td>
</tr>
<tr>
<td>C</td>
<td>collegi interaction</td>
</tr>
<tr>
<td>D</td>
<td>desk assignment</td>
</tr>
<tr>
<td>L</td>
<td>lecturing &amp; prep</td>
</tr>
<tr>
<td>P</td>
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<tr>
<td>Ph</td>
<td>phone</td>
</tr>
<tr>
<td>RW</td>
<td>report writing</td>
</tr>
<tr>
<td>L</td>
<td>lecturing ( &amp; prep)</td>
</tr>
<tr>
<td>SW</td>
<td>scholarly writing</td>
</tr>
<tr>
<td>SR</td>
<td>scholarly reading</td>
</tr>
</tbody>
</table>

Code for rating intensity & enjoyment = (1-10) (1-10)

RESULTS

Practicality and Reliability of the Methodology

Table 2 shows that weekly observations were regular for both sample groups. Each week the observer typically spent 4.5 hours with librarians and 6 hours with faculty. The difference was due mainly to the fact that librarians are located in one building while faculty are not. An important point to be drawn from table 2 is that both groups were accessible and cooperative. Except in rating the subjective aspects of ongoing activities, judgments by faculty and the observer about the kinds of activities and when they were carried out were in close agreement. This result supports the contention that direct observational checks can validate the reliability of faculty’s self-reports of workweeks.

Table 3 presents the judgments of librarians and the observer on the intensity and enjoyment levels of ongoing activities. In general, this aspect of reliability, i.e., the coincidence of agreement between the observer’s and the faculty member’s judgment on the level of intensity/enjoyment, was mediocre. Table 3 shows, however, some of the potential in comparing the ratings of work intensity/enjoyment made by a trained observer with ratings made by the individuals themselves. Some librarians, usually those who describe themselves as chronically rushed and busy, rated themselves unrealistically high on the intensity dimension. Other librarians, usually those who seemed to be burned out under stress, consistently ranked themselves low in terms of enjoyment evidenced during activities. Even though the sample is too small for firm conclusions, another result merits mention. Librarians whose judgments about intensity and en-
### TABLE 2
SAMPLES OF ACCESS AND COMPLIANCE LEVELS

<table>
<thead>
<tr>
<th>Week</th>
<th>Access Librarians Self-report</th>
<th>Access Faculty Members Self-report</th>
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<tr>
<td>2</td>
<td>6</td>
<td>6</td>
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<td>30</td>
<td>11</td>
<td>11</td>
</tr>
</tbody>
</table>

### TABLE 3
SAMPLES OF LIBRARIANS’ SELF-RATINGS AND OBSERVERS’ RATINGS DURING WEEKLY VISITS*

#### Successive Weekly Ratings of Energy Expended (10 = maximum)

<table>
<thead>
<tr>
<th>Libr.</th>
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<th>8</th>
<th>6</th>
<th>9</th>
<th>10</th>
<th>5</th>
<th>7</th>
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<th>2</th>
<th>4</th>
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</thead>
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<td>3</td>
<td>3</td>
<td>9</td>
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<td>8</td>
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<td>10</td>
<td>8</td>
<td>7</td>
<td>4</td>
<td>9</td>
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<tr>
<td>Obs.</td>
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<td>6</td>
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<tr>
<td>Libr. C</td>
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<td>4</td>
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<tr>
<td>Obs.</td>
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#### Successive Weekly Ratings of Enjoyment Evidenced (10 = maximum)

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*Each tabular number represents the rating, by a librarian or the observer, of either a 1-10 rating of energy/effort being expended or a 1-10 rating of enjoyment evidenced/felt during the observers’ weekly visit. Where possible, the observer’s ratings exclude conversations with librarians.
joyment most closely matched the observer's were also the most likely to have made realistic beginnings in writing for publications. Thus, ratings of the intensity and enjoyment of particular jobs could be of value in analyzing how likely librarians are to publish.

**Do Librarians Have Less Time for Scholarly Writing?**

About 8 percent of the librarians did not comply with observer requests for weekly self-report sheets. The noncompliance rate for faculty was 14 percent. Figure 1 depicts the mean workweek of the librarians. The curves generally confirm contentions in the literature that librarians put in full workweeks on campus: not including vacations, the mean time worked was 40.2 hours per week. The figure also shows that librarians put in longer workweeks on campus than the faculty. The ten faculty members who completed self-reports spent much less time on campus than the librarians did.

At first glance, then, faculty members appear to have time for research and scholarship, while librarians do not.

**The Search for Sufficient Time**

Despite the initial appearance of available time, the faculty members consistently claimed that they were too busy for scholarly writing. In addition to their report of an overall mean of 23.5 hours per week on campus, all faculty (cf., only two librarians) indicated that some teaching-related activity was done at home. These activities included grading papers and tests, preparing lectures and syllabi, and reading in preparation for lectures. If these unverified reports are given even partial credence, the workweeks of the faculty more closely approach those of librarians. Even if faculty exaggerate their workweeks, they seem to believe firmly that they do not have time for writing.

Reports about how faculty cope with new pressures for research and scholarship usually end with the confirmation of faculty claims of too little time amid already overloaded schedules. But the tracking procedure used in this study suggests the need for further examination.

**"Librarians and faculty members were frequently observed doing things that were spontaneously described by them as nonessential or inefficient."**

Librarians and faculty members were frequently observed doing things that were spontaneously described by them as nonessential or inefficient. Faculty members might have regular visitors during office hours who chatted for 2 hours about current events or sports. Just as often, they sat reading newspapers or magazines, waiting for students, or engaging in other relatively unproductive activities. Librarians often spent time on similar activities, when more structured tasks such as desk assignments did not intervene.

Assessing the availability of time began with an examination of requirements for certain core activities. Figure 2 shows the mean time spent on desk assignments by eight of the same eleven librarians depicted in figure 1. These self-reported weekly means included time at the reference desk, at a separately staffed information desk, or at a bibliographic instruction station other than the classroom (a credit-earning library skills program requires students to consult with librarians and other staff). A comparison between the reference and consultation workweek of the librarians (figure 2) and the core workweek of faculty members shows a striking similarity. Both cores hover around 15 to 20 hours per week, for desk assignments on one hand and for lecture time plus office hours on the other.

Of course, both groups typically add other, generally obligatory assignments to their core workweek. Both groups attend committee meetings. Faculty members often work with students on individual projects. Librarians often work with individual students and faculty by doing online searching, and lecturing to classes. When these other essential activities are added to the reference and consultation activity, the resultant patterns of at least 25- to 28-
hour workweeks for these librarians resemble the on-campus workweeks of traditional faculty depicted in figure 1. Even when librarians' additional assignments, such as collections development, were added, analysis of the tracking data produced a surprise. Both groups seemed to have discretionary time that could have been devoted to scholarship. When asked about this possibility, almost every participant gave the same answer: the occasional breaks in an otherwise busy schedule, were not sufficient for scholarship. Writing, they pointed out in almost complete agreement, requires large blocks of uninterrupted time. Thirty-minute blocks were too short.

One could accept these earnest arguments. These individuals were already doing a conscientious and competent job in the service sphere. Should more be expected? One response is that scholarly writing has become a required activity for both groups; a second is that scholarship could improve teaching effectiveness and could enhance the services librarians provide.

Finding Time in Busy Schedules

Faculty members who found time to write provided clues about how they did it. The most efficient and productive writers simply write during the brief openings in their service-oriented schedules. Equally important, they make writing a priority, and distractions such as phone calls are minimized.

"The most efficient and productive writers simply write during the brief openings in their service-oriented schedules."

These points were made to both groups at brief workshops held early in the project. Workshop participants were told about a study in which eight faculty members in another university who had written only in binges, i.e., large blocks of time, were enticed to write in brief (thirty to forty-five minute), daily sessions. A sixfold increase in the amount written was reported, and a substantial improvement occurred in the self-rated comfort with writing.
Short-Term Results: Did Librarians and Faculty Make Use of Available Time?

All twenty-four of the subjects in the present study listened cooperatively to suggestions about how to find the time to write, but few in either group pursued the idea seriously in the first seven months. Figure 3 depicts the result. Only one person from the faculty group began writing regularly. On the whole, neither group produced scholarship that was likely to meet the expectations of their campus administrators, that is, one article a year published in a refereed journal.

Moreover, neither group reported substantial writing at home. Three librarians indicated occasional-to-frequent writing off campus, two of them meeting expectations. Two of the faculty members wrote at home and were likely to publish at least one refereed article a year. This should be tempered by the fact that all five were merely continuing patterns that had been established before the study. Four of them stated strongly that scholarship was tantamount to personal indulgence; it had to be done on one’s own time, not on campus where service to students or others is the consuming priority.

Why Most Faculty Members and Librarians Don’t Write

Such concerns as fear of failure, negative reviewers, and competition for limited space in journals may have inhibited some faculty from writing. These may also apply to librarians. But the fact remains that some librarians and faculty do publish. Why did participants in this study fail to alter their habits?

Momentum may be a significant factor. More than a semester may be needed to change long-standing habits of devoting workweeks almost exclusively to service for students and others in the academic community. A second reason may be that those unused to scholarship may feel unprepared and unqualified to write.

Faculty reasons for why they made little sustained effort at writing are cited below according to frequency:

1. Too busy to write
2. Service to students comes first
3. Good writing requires large blocks of time
4. Only original, significant thoughts merit production
5. The editorial process is cruel and unfair/fears of failure
6. An inherent aversion to writing

"scholarship was tantamount to personal indulgence..."
Librarians responded similarly when asked why they did not write, citing an additional factor never mentioned by faculty. Some believed that writing inevitably undermines the teamwork that is necessary to provide excellent library services.

Maladaptive beliefs about scholarly writing are not easily surrendered. Individuals in the study may have been stymied by lack of ideas and of cultural support; the traditional service-oriented culture of both groups provides little encouragement or continuing education for scholarly writing. Becoming a productive writer may mean more than merely finding time to write.

**CONCLUSION**

Overall, librarians and their faculty colleagues are very similar in their approaches to scholarly writing. The two groups showed similar patterns for the use of their discretionary time and for responding to the demand for scholarly writing. For both groups core activities and other requirements typically fill most but not all hours in the workweek. Time for writing was available, time for faculty members, and time for librarians. Both groups used time in an inefficient or even unproductive way. Librarians and faculty members had seemingly busy schedules and placed a far greater priority on service than on scholarship. The two groups also showed a similar resistance to writing.

Given new insights about the practicality of writing during brief interludes in their service-oriented schedules, would the librarians and faculty members begin to cope with the demands for scholarship? The two groups responded similarly. Few made on-campus or off-campus writing even an occasional activity. Most in both groups remained convinced that they were too busy to write and that writing comes at the expense of good teaching or service.

The similarity between academic librarians and faculty members leads to several observations. The first is that librarians can better understand their own struggles with faculty status by looking at the struggle of traditional faculty. There is no obvious reason why librarians would not respond positively to development programs that offer more systematic direction and support than are currently provided to participants in this study. Secondly librarians are similar to their faculty colleagues: they have comparable attitudes about publishing and a commitment to excellence in service. Finally, the observer in this study, a traditional faculty member who has studied his colleagues for two decades, learned that librarians are as bright, intellectual, scholarly, and competent as their faculty counterparts.
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18. Boice, "Is Released-Time Effective Component?"
The Obstacles to Reform: China Modernizes Its University Libraries

Henrietta Lo

Based on her seven-month research on university libraries in China during 1983 and 1985, the author discusses the problems confronting Chinese libraries in their courageous leap from medieval book-preservation warehouses to high-tech information centers. The paper argues that the problems are mainly caused by China's political and social structures and economic conditions. The discussion emphasizes user services, a new development mandated for university libraries by China's National Education Commission and an area where the author dares to claim some expertise.

Since 1979 a noticeable number of Western information workers and scholars have visited and reported on Chinese libraries. Among approximately twenty substantial articles, less than half offer insights on the obstacles confronting Chinese libraries.

One of Chen Ching-chih's papers published in 1980 discusses the problems in China's program of educating and training professional information personnel. K. P. Broadbent's 1981 report explains why the Chinese written language poses a formidable obstacle to modern information processing in China. It further comments that China's shortage of paper, foreign monetary exchange restrictions, "fragmentation of effort and lack of coordination" among participants, and outdated telephone system have multiplied the difficulties.

In her 1981 paper, Ting Lee-hsia describes the serious problems faced by Chinese catalogers due to the coexistence of several classification schemes within individual libraries. James Chan's 1986 article makes it clear why Chinese university libraries have such great difficulty obtaining new foreign publications in a timely manner and informing themselves of current publications. A 1986 report by Maureen Pastine on the visit to Chinese libraries by a team of American librarians comments on the inadequacy of reference services.

This paper attempts to define the unique characteristics of the obstacles challenging both Chinese university libraries and their users. An examination of the development of librarianship in modern China is in order.

China is a latecomer in the founding of libraries accessible to the general public. The first provincial public library was set up in 1903 by an American, Elizabeth Wood, who arrived there in 1900. She also founded the first library school in China, Wen-hua, in 1920, and helped send some of the school's graduates to the U.S. for further studies in librarianship. Hence China's modern librarianship had a very strong American orientation: Dewey was widely used after 1904 and even the LC classification system was adapted by a few university libraries. The

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founding of the People's Republic of China in 1949 brought about some radical changes. In that year a second library school was established at Beijing University, China's top-ranking institution of higher education, terminating Wen-hua's monopoly as the provider of trained librarians. In 1953 Wen-hua lost its independent status and was incorporated into Wuhan University. No other library schools were established until 1977. As a result, of China's 140,000 information workers, only 2 percent had professional training.

Generally speaking, the first half of the 1950s saw a rapid development of Chinese libraries. The Chinese leadership decided to model the country after the Soviet Union. As a measure to provide mass education, particularly to factory workers and rural peasants, many public libraries were set up. To support scientific research, libraries or information centers were created for the many newly established institutes. The libraries were governed by various exclusive state agencies; for example, the library of the Beijing Industrial College might be responsible to the Ministry of Defense while that of the Beijing Industrial University would answer to the National Education Commission. Public libraries, including China's national library, would be under the control of the Ministry of Culture. Unfortunately, no attempt was made to coordinate the different types of libraries to form a network of information. Neither was there any direction from the state for setting up policies or standards for libraries. Today, even though efforts are being made to regulate the different types of libraries, this lack of coordination and cooperation has caused confusion and inefficiency among Chinese libraries and a great deal of frustration to the library user. A good illustration of this is provided by the firsthand accounts of six American historians—sophisticated library users—on gaining access to Chinese libraries and archives during 1982-84.

Another undesirable Soviet transplant in the early 1950s was the separation of the small number of information workers into two distinctive groups—librarians and information scientists. Even the curricula in library schools split into two mutually exclusive divisions, resulting in unnecessary duplication of efforts and depletion of resources. The establishment of the Institute of Scientific and Technical Information of China under the Academy of Science in 1958 widened the rift. Today the two leading Chinese library schools are trying to integrate the divisions into one unit again, but it will take a long time to eradicate the common belief among most information workers that librarians, who have been trained in the social sciences, are passive keepers of books while information officers, who have been trained in science and technology, are active providers of information.

The role of the academic librarian in actively supporting research was further diminished by the establishment of information rooms in individual academic departments, again a Soviet legacy. These rooms, which exist to serve only their respective professors and graduate students, are held responsible to the academic units, although the bulk of their collections is obtained from the university library. Naturally, this configuration has added to the unnecessary duplication of materials and to fragmentation of the university libraries' scanty resources. Very often the items housed in the information rooms cannot be located, even though they appear in the university library catalog.

The patriotic zeal of the period stirred up criticism of the existing systems used to organize knowledge in libraries: Dewey must yield its predominance. In 1954 a classification scheme, aimed mainly at university libraries, was compiled and published by the People's University, a key institution originally founded by the state to provide higher learning to top-ranking cadres. It was followed in 1956 by the classification scheme of the Academy of Science, designed for libraries of the various state research institutes. The Chinese Library Classification was published in 1974, and most libraries were required to organize their collections according to this "politically correct" system. Thereafter, not only were information workers and re-
sources fragmented, but so was the classification of library collections. The latter fragmentation is most damaging because the public catalog in Chinese libraries is basically a classified one. When a closed-stack collection is classified by several schemes, which is the norm for most Chinese university libraries, it increases difficulty for the user gaining access through the card catalog and for the library worker retrieving the requested items from various locations.

When the Soviet Union withdrew its technicians in the late 1950s, China felt betrayed. That caused the strengthening of the traditional peasant mentality of self-reliance. The concept of "small but complete" became pervasive in almost all undertakings; among libraries, this led to less and less coordination and cooperation. In an age of information explosion, this behavior has worked against China's efforts to modernize its libraries.

The Great Leap Forward movement (1957-61) appeared to advance library services through its goal of delivering books to the populace, particularly the poor in rural areas. Unfortunately, like the other innovative ventures of this period, e.g., backyard steel furnaces, the true picture is very different. Libraries were decimated: many valuable books were never returned. Library workers became adverse to open stacks and adhered more strongly to the feudal concept of preserving the collection for posterity. Also, the Maoist approach placed politics at the top and expertise at the bottom of the social hierarchy. Professional library workers were put under the command of "politically correct" persons, who might be illiterates, and opened the library mainly to "workers, soldiers and peasants." Rules, regulations, and procedures were abandoned, and libraries sank into disarray.

The political movement that is most devastating to Chinese culture in general and Chinese university libraries in particular is the ironically named Cultural Revolution (1966-76). During this period many library collections, considered the legacy of the reactionary past or the products of the poisonous bourgeoisie, were destroyed. Librarians, looked upon as the servants of feudalism and capitalism, were sent to reform schools or work farms in the barren areas of the country. Libraries were radically renovated: numerous copies of Chairman Mao's writings were acquired and, together with the writings of Marx and Lenin, became the only books made available to library users. Management was equated with reactionary suppression, and anarchy became the order of the day. Many incompetent cadres looked upon the library as a refuge and secured sinecures through the back door. This situation fostered the growing misconception that anyone could qualify as a librarian. Although the Cultural Revolution ended in 1976, the damages done to library collections, management, and personnel are too great to be remedied in a single decade. Today Chinese university libraries are fiercely fighting an uphill battle to achieve modernization.

In a 1985 user survey, the first taken by a Chinese-American librarian, the following observations were volunteered by respondents under "other comments":

1. Too few seats.
2. Need for better-trained, courteous workers at the circulation counter. ("After waiting for almost an hour, I was told that the book I need was not on the shelf, and the worker refused to go back into the stacks to get me a different title from the same subject area.")
3. Institute open stacks.
4. Card catalog difficult to use and no help available.
5. Not enough copies of useful titles.
6. Insufficient current foreign publications, particularly journals.
7. Need to improve services with automation and scientific management.
Although many Chinese academic librarians are becoming aware of these problems, solutions are not readily available because of China’s political, social and economic structure.

Since 1978 efforts have been made to improve all types of libraries as one support for China’s “four modernizations” (of industry, agriculture, science/technology, and defense). Limited authority was conferred on the China Society of Library Science, founded in 1979, to develop libraries for the following: (1) mass education, (2) scientific and technological research, (3) dissemination of information, and (4) preservation of books. In regard to university libraries, extensive guidelines and standards are now available. In September 1981, when the National Education Commission convened a meeting to discuss the work of university libraries and create the National Committee on Academic Libraries, it unveiled its Regulations for College and University Libraries. The Regulations were officially issued in October 1981. These thirty regulations deal with: (1) functions and missions, (2) operations and services, (3) organization and structure, (4) personnel, and (5) budget, building, and equipment. The emphasis is on good collections, efficient services, effective management, qualified personnel, adequate budgets, study-conducive buildings, and modern equipment; catalog standardization and interlibrary cooperation are stressed. Indeed, if all the conditions specified by the Regulations were achieved, Chinese academic libraries would become highly efficient and effective information centers comparable to their counterparts in the Western world. However, the state has not made a top priority of helping university libraries to attain such conditions.

To illustrate the unique difficulties confronting Chinese university libraries and their users, consider the following scenario based upon the author’s own experiences and contacts.

Liu is a third-year computer science student in one of China’s six top universities. He wants to learn about current trends in technologically advanced societies. Because the information room of the computer science department serves only department faculty and graduate students, he must use the university library. He goes to the social sciences reading room, where there is a small, open-stack collection of recent Chinese publications for reference purposes. He is, however, denied entry by the room attendant, who has been told to admit only students whose library cards indicate that they are social science majors. Liu goes to the reading room section head to explain his needs but is told that because his major is computer science, he has no business in the social sciences reading room. He should go to the science and technology reading rooms to meet his needs.

Realizing that the most pertinent information on the topic should be in English-language publications and because he can read some English, Liu decides to go to the foreign publications reading room. Again he is barred at the door. The librarian on duty, whom Liu recognizes as his senior classmate by two years, tells him that only faculty and graduates are admitted because there is already insufficient seating for qualified readers. Liu can see at a glance that the room is indeed very crowded. He is advised to go to the union card catalog to check out books from the main stack collection.

Liu is at a loss in the card catalog room. He has used only the author and title catalogs but now must use the classified catalog. After reading all the instruction guides posted on the walls, he understands that of the three separate classified catalogs—Dewey, Academy of Science, and Chinese Library—he needs to use only the last two because the Dewey catalog includes only books published before 1960. After an hour, Liu still fails to find appropriate class numbers for the books he wants. He therefore approaches the catalog information desk for help. The librarian on duty, a man in his early fifties, does not seem to understand what Liu wants. He tells him to write down his request in the “queries book” and come back for the answer in a day or two. Liu asks whether the library, if it does not have what he wants, will get the book for him from another library. “We have every
available item in this region. What we don’t have won’t be found in other libraries,” replies the librarian.

In the meantime, Liu happens to see his cousin in the canteen. The cousin is a graduate student in library and information science and he recommends to Liu the Chinese translation of John Naisbitt’s Megatrends, one of the five most demanded books of the previous year. Liu returns to the library, finds the title in the card catalog, and submits his book request at the circulation counter. Forty minutes later the attendant returns, stating that the book is not on the shelf. Liu suspects that the attendant, who is in his early thirties and seems to enjoy chatting with his coworkers too much to go looking for books, has not searched carefully for the title in the right place. He asks the attendant to look for it one more time. Heated arguments ensue, followed by a scuffle. Both are taken to the office of Huang, deputy library director.

“... recommends to Liu the Chinese translation of John Naisbitt’s Megatrends, one of the five most demanded books of the previous year.”

Apparently it is not the first time that the attendant has gotten himself involved in this type of situation. After challenging Huang to remove him from his library post, he takes his leave. Huang tells Liu that he had indeed tried to transfer the attendant to another department on campus. After fully documenting why the person is unsuitable for library work, his request to have the person transferred to another area had been approved by the university personnel office. But no unit would agree to accept the person—a former Red Guard who has hardly any education beyond the fourth grade, and who strongly resents offering service to intellectuals whom he despises and envies at the same time. Because the state’s policy of no unemployment practically guaran-

tees him an “iron rice bowl” he gets his paycheck for merely showing up at work. It looks as if he will stay in his library post for a long while.

Huang explains that many books have not been reshelved recently because six of the stack workers have been given released time, as required by state regulations, to study for the upcoming TV university examinations. Appreciating the efforts undertaken and the frustrations endured by Liu, he offers to have the book retrieved and kept at the counter for him.

Liu then pleads for an open-stack library. Huang explains that even though that is a long-term goal, it is presently impossible unless the library building, finished only ten years ago, could be remodeled. Besides, the collection is not organized for public access—it is broken up by several classification systems, language divisions, and pre- and post-1949 publication dates. In certain areas, e.g., Cultural Revolution propaganda literature, hundreds of duplicate copies are bundled and piling up on top of the shelves. Also, there is no antitheft device to prevent irreplaceable items from disappearing.

Huang assures Liu that he is fully aware of the poor user services at the circulation counter and is considering remedying the situation by hiring some undergraduate students as part-time workers. During his recent visits to American university libraries, the part-time student workers impressed him as a very effective labor force. Liu asks if an automated circulation system would help. Huang admits that, like most other librarians, he had held the opinion that if Chinese libraries were automated, all administrative and operational problems would be solved. However, he now realizes that most of these problems need to be resolved before automation can take place.

Because Liu is interested in library services, Huang suggests that perhaps he would like to join the library automation unit after his graduation the following year. Liu is surprised that there is such a unit because there is no sign of automation in the library. Every sizable university library is required by the 1981 Regulations
to set up a systems unit, replies Huang. The unit in his library, established three years ago, has nine staff members who have been investigating various library automation systems so that the library would be ready when the National Education Commission approves its purchase of a minicomputer with World Bank loans next year.

The conversation is interrupted by a staff member who wants Huang to find her a baby-sitter or get her two-year-old child admitted to the campus day-care center because her mother is returning to her brother's farm. Liu leaves the deputy director's office wondering if he wants to work in a library. Librarians are still rather low on the social scale but working in a university, particularly a prestigious one, is considered desirable. Besides, it will guarantee his rights of residence in a prospering urban area. But why should he waste time on this question since most likely he will accept whatever work assignment is mandated for him by the state?

Liu finds Megatrends waiting for him at the circulation counter the next day. After reading it, he decides that it is worth all the trouble he has undergone. He even makes up his mind to buy a copy for himself, which means that he must give up eight movies—since it costs 1.80 yuan, one-fifth of his monthly incidental allowance. The campus bookstore does not have a copy of the book and refuses to order one for Liu because Hsin Hua Bookstore, the sole distributor of Chinese publications, has reported that it is out of print. Liu goes to the district Hsin Hua Bookstore but fails to find a copy there either. The store manager tells him that usually only a few extra copies of a nontextbook title will be ordered so that the bookstore will not be saddled with too many unsold copies—the cost of which must be borne as a loss by the store under the new self-responsibility system. For the same reason, the publisher usually prints only about 10 percent more than the number of copies required to fill the advance orders received through Hsin Hua Bookstore.

Liu then decides to photocopy certain pages of the book. He wants about thirty pages, which, at 30 fen per exposure, would cost him 4.50 yuan (i.e., U.S. $1.50), while the price of the whole book is only 1.80 yuan. After he has spent a half-hour filling out a copying request and found the copier operator, he is told that the Minolta copier, the only copying machine in the library, is out of order and repair is impossible until the necessary part is shipped from Japan. Liu hence makes up his mind: he will keep the book but report to Circulation that he has lost it. He will be required to pay for its replacement—1.80 yuan only. The library will not miss this one copy because it has at least ten others. Keeping the copy, he rationalizes, will not deprive other readers of the title.

Meanwhile, Deputy Director Huang is dusting his office and cleaning the tea set to get his workstation ready for the day. He wonders how much library services would benefit if the time and energy expended on such daily chores by every one of the library staff were spent on library work instead. He will try harder to get approval to institute janitorial services for the library. He also hopes that the day will soon come when the administrator of a unit is no longer required to take care of the daily necessities of his staff like a village elder. He has spent many hours on solving the baby-sitter problem for a staff member.

In sorting the pile of papers on a bookshelf, Huang comes across the floor plan of the Social Sciences Library. The construction of the branch library was supposed to have begun three years ago, but the university administration decided to spend the allocations on building a microwave laboratory and then a computer center. Now that the new university library director is Professor Lai, who has actively involved himself in library matters rather than being a nominal director, perhaps the branch library will get built next year. Huang has reservations, however, about the twelve reading rooms and a closed-stack storage in the new library. Yet it has taken Deputy Director Wu a year to get the blueprint approved by various state, county, city, and district agencies—ninety-seven stamps of approval alto-
professionally trained library workers comprise only 2 percent of China's total library work force.''

Deputy Huang is an associate professor of mathematics, but four years ago he was assigned to the library as a deputy director in charge of personnel, public relations, services, and systems development. Even though he has spent a lot of time learning about library operations and is committed to modernizing and improving library services, he looks upon himself as an administrator rather than a librarian. As a matter of fact, hardly any of the 155 full-time staff members look upon librarianship as a career or profession. Only 25 percent of them have had any higher education, although the 1981 Regulations require that the size of the 'professional' cadre in each library be increased gradually to 60 percent.

There are seven members who have graduated from library schools, an impressive figure because professionally trained library workers comprise only 2 percent of China's total library work force. However, despite this good fortune, library services are not as effective as Huang expects. For example, there is a huge backlog of uncataloged science and technology books in English, bought with a loan from World Bank (his library gets about U.S. $120,000 per year for five years). Only two of the twenty-five catalogers, both recent library school graduates, have adequate English to separate the books into appropriate areas; neither has enough subject knowledge to classify the books according to the Chinese library classification scheme. Consequently, professors and graduates complain that the library does not provide enough current foreign publications. The state hopefully will assign more university graduates to university libraries from now on to improve the quality of the library staff as a support unit for science and technology.

Huang has placed the other two recent library school graduates in the reference department, which he set up two years ago as required by the 1981 Regulations. The department consists of four professional cadres occupying a small office. From his visits to American libraries, Huang realizes that an effective reference department must have certain basics: a sizable reading room containing a comprehensive collection of useful sources and a knowledgeable staff with sound communication skills. But there is no space available in the library for even a small reference room.

In order to put together a reference collection, the sources now scattered in the twenty-seven library reading rooms and twelve departmental information rooms would need to be identified, located, and transferred to the reference room. This is a very difficult task, and it will definitely turn the faculty against the library because they are accustomed to having materials for their disciplines grouped together and available to them exclusively. Perhaps he would begin with a small social sciences reference room in the new branch library. He has resigned himself to the reality that it will take a long time for his library to have a full-fledged university reference department. At least he has succeeded in assigning solely professional cadres to the department.

Of the four members, two are responsible for bibliographic instruction, offering a formal two-unit class to science and technology graduate and senior students, as mandated by the National Education Commission. A third member is responsible for answering the questions written down by library users in a 'queries book.' Most of the questions concern location of materials, literature searches for specific thesis topics, and identification of periodicals from abbreviated titles. The
fourth member is mainly responsible for
doing computerized data searches for the
faculty, using the Dialog database tapes at
the Academy of Science headquarters. It
requires at least two hours of traveling
time per trip. How much more productive
she would be if she could access the Acad­
emy of Science computer, using the IBM
PC microcomputer terminal in the library.
Again, Huang realizes that this develop­
ment depends on the state's improvement
of the underground cables and telephone
system. Very often it takes a half-hour for
him to get a telephone line to the other
side of town, but when his call gets
through the connection is so bad that he
can hardly hear the person at the other
end of the phone. He envies his American
counterparts who apparently get a lot of
work done by simply picking up a phone.
Huang ponders whether it would be
productive to invite a senior information
cadre at the Academy of Science to teach
his reference staff how to provide infor­
mentation services. A better solution, he
thinks, is to hire a reference expert from
overseas, or even from Hong Kong, to
spend six months guiding them in this
new venture. However, he knows that the
university will be very reluctant to spend
any of its scarce foreign currency on the li­
brary, which is under strict state control.
In fact, had it not been for the generosity
of IBM, the library would not have been
able to obtain foreign currency for the two
IBM PC microcomputers in the systems
office.
The systems work is making slow prog­
ress because of the unavailability of cer­
tain necessary items. A simple example is
self-adhesive bar code labels. The state
has not placed any priority on the manu­
facturing of adhesive substances. Li­
braries are still required to expend a lot of
human resources on pasting labels on
books with poor-quality homemade glue
that loses its adhesiveness very shortly.
Other obvious examples of what is needed
but unavailable are microfilming, print­
ing, and copying equipment. Neverthe­
less Huang has learned from his American
experiences that Chinese libraries need to
develop automation systems jointly rather
than individually, which, due to the
"small but complete" mentality, has been
the prevalent mode. Fortunately, the state
has established the Committee on Acad­
emic Libraries as a national guiding
force. Some of the committee's active
members, e.g., Huang himself, are fully
aware of the importance of networking
and have been preaching the standardiza­
tion of cataloging as a prerequisite for an
automated union catalog. Now that the
state encourages pro-American ap­
proaches in science and technology, the
committee has recommended that AACR2
be adapted to Chinese cataloging needs.
The above scenario demonstrates that
many of the problems confronting Chi­
inese libraries are caused, and their solu­
tions controlled, by a mix of China's politi­
cal, social, and economic conditions. As
long as the state subscribes to the "iron
rice bowl" practice, fosters the "small but
complete" concept, insists on convoluted
bureaucracy, mandates that managers be
responsible for every aspect of their work­
ers' lives, encourages only the profit-loss
notion of the self-responsibility system,
and concentrates only on the "four mod­
ernizations" to the neglect of other neces­
sities, Chinese libraries will find it very
difficult to achieve modernization. The
1981 Regulations may have established
sound goals and reasonable standards for
academic libraries, but the state must also
provide means for the libraries to achieve
them. Until the situation improves, Chi­
nese university libraries will remain a
challenge to library users.

REFERENCES AND NOTES
1. Ching-chih Chen, "Education and Training in Information Science in the People's Republic of
6. Elizabeth Wood went to China to visit her brother, a missionary. The visit lasted for more than thirty years, until her death in 1931. She made several return trips to the states to raise money for setting up the public library and the library school and to train herself for the library profession by attending Pratt Institute and Simmons College. For detailed information, see John H. Winkelman, "Mary Elizabeth Wood (1861-1931)," *Journal of Library and Information Science* 8:62-76 (Apr. 1982).
10. The author had interesting and at times excited discussions with some information science instructors who had themselves been information scientists. They seemed to consider their functions similar to those performed by researchers in such think tanks as the Rand Corporation. The author was permitted to go to several classes in China's leading library schools to get a glimpse of their information science classes. In one class (lasting 2.5 hours) the instructor spent about an hour on explaining brainstorming. According to some recent library school graduates working in the libraries visited by the author, they spent much class time on the debate over whether library science and information science should be integrated. Apparently the title information scientist enjoys far more prestige than librarian.
11. Due to the peculiarities of the Chinese written language and to the different filing systems existing side by side, the author or title catalog is also not easy to use.
12. Between August and November 1985, the author took a user survey at eight key Chinese university libraries in Beijing, Chengdu, Chongqing, Wuhan, Shanghai, and Guangzhou. About 500 questionnaires were hand-delivered to individual undergraduate and graduate students and professors using the library; about 450 were collected, again by the author personally. In the near future, when all the data have been tabulated and analyzed, a report will be issued.
14. The characters are a mixture of the people with whom the author had come into contact, but the incidents are actual happenings.
17. The average duplication rate of Chinese publications in university libraries is now 10-12 copies. Titles that are used as supplementary texts usually have 30 to 50 duplicate copies; some even have 50 to 100 copies. When a university library gives a figure for its collection size, divide that figure by ten to get a more accurate estimate of its number of titles.
18. The 1981 *Regulations* require that university library directors first hold positions as full professors. In most libraries, the "directors" are, therefore, directors in name only, while the administration is actually executed by deputy directors (usually two to three per library).
Material Availability:  
A Study of  
Academic Library  
Performance  
Anne C. Ciliberti, Mary F. Casserly,  
Judith L. Hegg, and Eugene S. Mitchell

This article reports the findings of a study modeled after Saracevic, Shaw, and Kantor's efforts to identify and quantify the causes of users' failures to identify and locate library materials. The researchers analyzed patron-reported and librarian-observed subject and known-item searches and found an overall success rate of only 54 percent. The problems that led to the 46 percent failure rate were analyzed by source and type of failure, and subjective observations concerning problems encountered by patrons were recorded. Recommendations are made for reducing library malfunctions and circulation, patron, and acquisition errors.

This article reports the findings of an empirical self-study undertaken at the William Paterson College Library during the fall semester, 1985. The college is a state-supported New Jersey institution awarding baccalaureate and master's degrees. It enrolls 7,000 full-time students and employs a teaching faculty of 350 full-time professors. The library, with a professional staff of 20, contains approximately 300,000 items of print and nonprint material.

The primary purpose of the study was to determine what needed to be done to improve library services. Several important ancillary benefits were anticipated; these included involving staff, particularly those new to the organization, in aspects of the library (and perhaps the college) that were unfamiliar to them and introducing them to the techniques and complexities of evaluating library operations. The potential for a positive political impact, particularly in terms of funding, was also noted. A steering committee comprised of four staff members planned the study, analyzed the data, and prepared the following report. All staff, however, were involved in various aspects of the actual data collection.

Four criteria were used to select a type of self-study that would (1) identify the impact of library weaknesses on users, (2) evaluate functions used by patrons, (3) be feasible, and (4) serve as a management tool, not as an academic exercise.

The selection of a self-study model followed an intensive review of the advantages and disadvantages associated with various library research methodologies. User surveys, document availability tests,

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and catalog use studies were all examined and judged against the four selection criteria. From this review it became clear that a shelf availability study developed by Paul Kantor and described in an article by Saracevic, Shaw, and Kantor offered the most advantages.

This instrument provides a measure of performance for a library's acquisitions program, circulation policies, internal operations, and users' capabilities. A branching analysis, used to calculate probabilities, requires that the outcome of each sequential step in the search process be placed into one of several independent categories representing the obstacles to a successful search that must be overcome. In known-item searches, for example, the Kantor model suggests four steps:

1. Has the library acquired the desired title?
2. If acquired, is it in circulation?
3. If not in circulation, is it available on the shelf?
4. If available on the shelf, can the user retrieve it successfully?

According to the branching technique, the proportion of searches that overcomes each of these obstacles represents the probability of success for a category. When multiplied together, these individual success probabilities determine the overall probability of availability.

The Kantor evaluation model was modified by Ciliberti for use at William Paterson College. The principal modifications were an expansion of the steps or branches involved in known-item searches and the addition of a parallel series of branches involved in the successful completion of subject searches. These branches, represented in figures 1 and 2, are defined below.

**ACQUISITION ERROR**

Acquisition errors occur only in known-item searches when the desired material is not a part of the library's collection or is not fully represented in the card catalog.

**APPROPRIATE TITLE ERROR**

Appropriate title errors occur only in subject searches when patrons fail to select call numbers for titles found in the catalog or when, after examination of selected titles, patrons fail to borrow (or use

![FIGURE 1](Branching Analysis of Known-Item Searches)
FIGURE 2
Branching Analysis for Subject Searches

in the library) materials found on the shelf. These errors occur when patrons choose not to consult items found on their topics because the material has already been read, is written in the wrong language, is too old or too new, is not at the correct reading level, or is in some other way unsuitable to the information need at hand. All such decisions and judgments are made by the patron; the researcher can only infer from patron actions and note that particular titles were in some way deemed inappropriate.

BIBLIOGRAPHIC ERROR

Bibliographic errors occur only in known-item searches when the desired material is not found by the patron because the bibliographic clue or citation (either remembered or written) is incorrect and the document can be verified from another source and is correctly represented in the card catalog.

CATALOG USE ERROR

Catalog use errors occur in either known-item or subject searches when the desired material is not found by the patron as a result of one of the following situations:
1. No call number was identified, and the book had been acquired.
2. An incorrect or incomplete call number was identified.
3. Special location symbols, such as Folio or Ref., printed adjacent to the call number, were not noted.

CIRCULATION ERROR

Circulation errors occur in either known-item or subject searches when the desired material cannot be found by the patron for one of the following reasons:
1. Item is located on a "hold" shelf waiting to be charged out.
2. Item has been borrowed for use outside the library and record of the loan transaction is available.

LIBRARY MALFUNCTION ERROR

Library malfunction errors occur in either known-item or subject searches when the desired material cannot be found by the patron due to shortcomings in the policies or routines of the library or its staff.
Shortcomings occur when items are (1) missing; (2) misshelved; (3) located on sorting shelves; (4) waiting to be shelved; (5) being recataloged, reprocessed, or repaired.

**MATCHED QUERY ERROR**

Errors in matching query terms occur only in subject searches when patrons fail to discover a subject heading in the card catalog that partially or fully matches their query terms. Matching failures may be of two kinds, however. Type A errors occur when no match can be made from the initial query to a Library of Congress subject heading and, therefore, represent patron errors: failing to find the appropriate Library of Congress subject heading.

Type B errors occur when no match can be made from the initial query term to the appropriate Library of Congress subject heading because the library does not own books on that subject; such errors, therefore, represent library acquisition failures.

**RETRIEVAL ERROR**

Retrieval errors occur in either known-item or subject searches when the desired material cannot be found by the patron despite the fact that the correct and complete call number has been noted and the book is in its proper shelf location.

**RELATED LITERATURE**

The historical antecedents of shelf availability research are diverse. The beginnings of performance measurement research have been traced to the 1930s by Ciliberti. Mansbridge also cites an example of availability research from 1934. It was not until the 1960s and 1970s, however, that strong interest in performance measurement began. During those years many seminal investigations were undertaken, including work by Meier, Rzasa and Baker, and Hamburg, Ramist, and Bommer.

Whereas the early studies often endeavored to assess library service in its broadest sense, later research was aimed at evaluating intralibrary document delivery. Within this subfield of study two strains of empirical investigations developed: document delivery tests and shelf availability research.

The works of DeProspo, Altman, and Beasley and of Orr and others are representative of document delivery tests. In these studies availability was typically measured by determining the degree of availability for items listed in a bibliography. These citations were obtained through a variety of methods. In the DeProspo study, for example, the citations were drawn randomly from editions of American Book Publishing Record, while they were culled from a broad range of recently published biomedical literature in the Orr study.

In contrast to document delivery tests, shelf availability studies measure the degree of accessibility for titles actually sought by library patrons. In this manner, such variables as the competition for high-demand titles are viewed realistically, rather than in the artificial structure of document delivery testing.

The research presented here is a true shelf availability study and follows the basic methodology first proposed by Kantor and by Saracevic, as described later in the article. As such, this study complements an impressive group of studies in which the Kantor design was used; this group includes a longitudinal investigation conducted at Case Western Reserve University. Several other examples include work by Whitlatch and Kieffer, Wulff, Smith and Granade, Palais, Kochtanek, Radford, Ciliberti, and Ferl and Robinson. It is important to note that the research reported here differs from all of those studies except the Ciliberti work, in that it investigates availability rates for subject as well as known-item searches.
METHODOLOGY

Background

During the summer of 1984 the Steering Committee discussed how and when library users would be surveyed for self-study purposes. Because it was to be based on the outcome of card catalog searches, it was agreed that the self-study would rely on data obtained from a randomly selected group of catalog users distributed throughout the day and week in the same proportion as all users of the card catalog.

Towards this end, a preliminary study of card catalog use was planned and implemented throughout the fall semester. During each weekday hour, library staff observed and recorded each use of the card catalog in half-hour intervals; weekend observations were not economically feasible.

Decisions on the sample size, variables to be observed, and methods of observation were made by the Steering Committee during the summer of 1985. It chose to follow the cell-size method developed by Galtung for calculating sample sizes. A sample size of 600 observations was used, and half-hour periods by day of week and week of semester were selected randomly.

A second issue addressed by the committee pertained to the methods of observation to be used for collecting data from the 600 card catalog users. Previous research relied mainly on patron self-reports for data collection. In recent research, Ciliberti studied library performance on the basis of data collected through both patron self-report and librarian observation. After reviewing the Ciliberti study, which found that self-reported data showed significantly higher levels of library success than data collected by librarian observation, the committee elected to use both methods. Specifically, it agreed to collect data from 600 randomly selected users, by distributing survey forms on which they could record the titles and/or call numbers of the materials they desired and were asked to return them as they exited. If the first person declined to cooperate, the data collector approached another catalog user.

The librarian observations were made by committee members, who accompanied participating patrons during their consultation of the card catalog and subsequent search of the book stacks.

DATA COLLECTION AND RETURN RATES

Data collection began the first day of the fall 1985 semester and continued throughout it. Rates of distribution and return were closely monitored by the committee, and steps were taken to insure that these rates remained acceptable.

In addition to conducting the librarian observations of patron searches, the committee was also responsible for analyzing the self-reported data. Each day, members of the committee collected the self-reports that had been returned in the preceding twenty-four hours and randomly selected one title for analysis. If this title had not been found or used, the cause of the failure was determined. This required verifying the call number, subject heading, or bibliographic reference; checking the card catalog; searching the book stacks and served measurement).
sorting shelves; and examining the circulation files and reserve book shelves.

Thirty-four observations were completed, and 401 self-reports were received. The intention to observe forty library patrons was not met, either because of researcher error (the data collector missed the collection time) or because no patrons willing to participate in the study approached the card catalog during the appointed half-hour interval. Likewise, the committee intended to gather self-reports from 600 patrons, but only 560 were distributed for the same reasons. Of the forms distributed, however, 401 were returned and usable, an overall return rate of 72 percent.

RESULTS
Types of Searches Conducted and Academic Status of Catalog Users

The data indicate that 53 percent of the patrons who completed self-reports conducted known-item searches and 47 percent, subject searches. The breakdown of librarian-observed, known-item, and subject searches was slightly different, but a chi-square test indicated that this difference is not significant at the .95 level of confidence.

The process of determining which were subject and which known-item searches was not as straightforward as had been anticipated. Despite the fact that patrons were asked whether they were looking for materials by author, title, or subject and were given the appropriate form, it was apparent from examining these forms that some patrons who had indicated that they were conducting known-item searches had in fact conducted subject searches and vice versa. As a result, six unsuccessful searches recorded on subject forms were counted as known-item searches, and five unsuccessful searches recorded on known-item forms were counted as subject searches.

As would be expected at a predominantly undergraduate institution, the majority of the participants were undergraduates. This group conducted 69 percent of the total searches observed and 66 percent and 73 percent, respectively, of all known-item and subject searches (see table 1). Graduate students, the second largest group of subjects, conducted 15 percent of the total searches. While undergraduates carried out an equal number of known-item and subject searches, graduate students conducted significantly more known-item than subject searches. These findings support Palmer and Tagliacozzo and Kochen, who found that the propensity for conducting known-item searches increases with educational level. It should also be observed that the faculty constituted the smallest category of users (3 percent).

Analysis of Success Rates

The overall success rate for the 401 self-reported searches was 54 percent—215 pa-

<table>
<thead>
<tr>
<th>TABLE 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANALYSIS OF TYPE OF SEARCH BY ACADEMIC STATUS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Academic Status</th>
<th>Known-Item</th>
<th>Subject</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate</td>
<td>139 (66%)</td>
<td>139 (73%)</td>
<td>278 (69%)</td>
</tr>
<tr>
<td>Graduate</td>
<td>40 (19%)</td>
<td>22 (12%)</td>
<td>62 (15%)</td>
</tr>
<tr>
<td>Faculty</td>
<td>8 (4%)</td>
<td>6 (3%)</td>
<td>14 (3%)</td>
</tr>
<tr>
<td>Other</td>
<td>15 (7%)</td>
<td>14 (7%)</td>
<td>29 (7%)</td>
</tr>
<tr>
<td>No Answer</td>
<td>9 (4%)</td>
<td>9 (5%)</td>
<td>18 (4%)</td>
</tr>
<tr>
<td>Total</td>
<td>211 (100%)</td>
<td>190 (100%)</td>
<td>401 (100%)</td>
</tr>
</tbody>
</table>

Note: Due to rounding, columns do not total 100%.
trons found the material they were seeking. This approximates the overall success rates of similar studies reported in the library literature.26

A comparison of the success rates between known-item searchers and subject searchers using both types of data collection methods, is presented in table 2. As previously explained, the data collected by librarian observation was intended to be a check on the success rates derived from the patron self-reports. This check was needed because the Ciliberti study as noted above, indicated that self-reporting resulted in artificially high success rates in both known-item and subject searches.

The data in table 2 fail to support this finding of the Ciliberti study. Chi-square tests indicate that there are no significant differences in performance due to the methods of data collection. Consequently, the self-reported success rates were not artificially high, as had been anticipated.

Analysis of Search Failures: A Macro Look

Patrons’ failures to locate the books being sought can be divided into six categories for both subject and known-item searches. In tables 3 and 4, these error categories are listed in the order encountered and the success rate at each step of the search process.

Thus, table 3 shows that 5 of the 211 patrons conducting known-item searches had erroneous bibliographic citations. Of the 206 patrons who had correct information, 21 were searching for titles the library had not purchased. Of the 185 who had accurate citations and were looking for books the library owned, 15 were unable to use the card catalog correctly, i.e., to locate the appropriate cards and identify information necessary for finding the books. Another 15 failed to find the books because they were in circulation. At this point, 155 persons were looking for titles that ostensibly should have been on the shelves; however, 40 of them were unsuccessful in locating these books because of some library malfunction, i.e., the books were not where they were supposed to be. Another 8 were unable to retrieve volumes that were shelved in their correct locations. The total failure rate was 49 percent.

When these errors are placed in the order of their relative negative impact on the search process they indicate where the greatest efforts toward future planning should be directed. The success ratio of only 74 percent at the library-malfunction stage of a patron’s search should be of first concern, followed by acquisition, circulation, catalog use, retrieval, and bibliographic considerations.

The subject-search errors shown in table 4 are listed in the order patrons encountered them. Twelve of the 190 patrons conducting subject searches were either seeking titles that had not been purchased or were unable to select subject terms that matched their needs, i.e., were unsuccessful in locating a Library of Congress subject heading that would have been used in the card catalog. Of the 178 persons remaining, 11 had difficulty using the card catalog. Either they could not correctly identify the call number, or they left out the location symbol, e.g., Folio or Ref. Twelve of the 167 patrons who successfully reached this point were looking for titles that were subsequently determined to be in circulation and therefore inaccessible.

Twenty-one of the remaining 155 patrons were unable to locate their materials because of a shortcoming in either the policies or procedures of the library that caused the book to be unavailable to them. Examples of library malfunction include

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**TABLE 2**

ANALYSIS OF SUCCESS IN KNOWN-ITEM AND SUBJECT SEARCHES BY METHOD OF DATA COLLECTION

<table>
<thead>
<tr>
<th>Method of Data Collection</th>
<th>Known-item</th>
<th>Subject</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observed</td>
<td>8 (47%)</td>
<td>9 (53%)</td>
<td>17 (100%)</td>
</tr>
<tr>
<td>Self-reported</td>
<td>107 (50%)</td>
<td>108 (50%)</td>
<td>215 (100%)</td>
</tr>
</tbody>
</table>
missing books, volumes waiting to be shelved, and materials awaiting cataloging or repair. One hundred thirty-four searchers successfully negotiated these problem categories, but 12 more failures occurred because patrons were unable to find books that were correctly shelved. The sixth type of error, appropriateness, was committed by 14 patrons who found materials on the shelf but decided that they were inappropriate for their needs. The books might have been previously read, too old, too advanced, etc. Thus, only 108 patrons performing subject searches located material appropriate for their needs: 82 were unable to do so, resulting in a failure rate of 43 percent.

It is possible to place the patron errors in the order of their negative impact on the search process: library malfunction is first, followed by appropriateness, retrieval, circulation, matching and acquisition, and catalog use errors.

**Analysis of Search Failures: A Micro Look**

The search failures encountered in this study can be further analyzed in three different ways: (1) the origin of the failure—

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**TABLE 3**

KNOWN-ITEM SEARCH PERFORMANCE BY TYPE OF ERROR AND SUCCESS RATIO

<table>
<thead>
<tr>
<th>Type of Error</th>
<th>Number of Errors</th>
<th>Total Patrons Searching</th>
<th>Success Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bibliographic</td>
<td>5</td>
<td>211</td>
<td>98%</td>
</tr>
<tr>
<td>Acquisition</td>
<td>21</td>
<td>206</td>
<td>90%</td>
</tr>
<tr>
<td>Catalog use</td>
<td>15</td>
<td>185</td>
<td>92%</td>
</tr>
<tr>
<td>Circulation</td>
<td>15</td>
<td>170</td>
<td>91%</td>
</tr>
<tr>
<td>Library malfunction</td>
<td>40</td>
<td>155</td>
<td>74%</td>
</tr>
<tr>
<td>Retrieval</td>
<td>8</td>
<td>115</td>
<td>93%</td>
</tr>
</tbody>
</table>

Total Errors: 104
Total Known-Item Searches: 211
% Errors: 49%
library, patron, and other; (2) the status of the user; and (3) the longitudinal changes over the course of the semester.

**ORIGIN OF FAILURES**

**Library Errors**

Sixty-three percent of all search failures can be considered library errors, i.e., shortcomings in library routines. As table 5 indicates, sixty-one (56 percent) of these searches failed because the titles sought could not be located on the shelves or in the circulation records. An additional twenty-seven (25 percent) of these failures were due to the fact that the desired titles were already on loan, while the remaining twenty-one (19 percent) represent titles desired by patrons but not owned by the library.

**Library Malfunction Errors**

These sixty-one errors constituted 56 percent of all library errors. In more than one-half of these cases, patrons consulted the card catalog and found titles that they believed would be useful; however, these titles were unavailable. A closer look at

---

**TABLE 4**

SUBJECT SEARCH PERFORMANCE BY TYPE OF ERROR AND SUCCESS RATIO

<table>
<thead>
<tr>
<th>Type of Error</th>
<th>Number of Errors</th>
<th>Total Patrons Searching</th>
<th>Success Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matching &amp; acquisition</td>
<td>12</td>
<td>190</td>
<td>94%</td>
</tr>
<tr>
<td>Catalog use</td>
<td>11</td>
<td>178</td>
<td>94%</td>
</tr>
<tr>
<td>Circulation</td>
<td>12</td>
<td>167</td>
<td>93%</td>
</tr>
<tr>
<td>Library malfunction</td>
<td>21</td>
<td>155</td>
<td>87%</td>
</tr>
<tr>
<td>Retrieval</td>
<td>12</td>
<td>134</td>
<td>91%</td>
</tr>
<tr>
<td>Appropriateness</td>
<td>14</td>
<td>122</td>
<td>89%</td>
</tr>
</tbody>
</table>

Total Errors: 82
Total Subject Searches: 190
% Errors: 43%
“Sixty-three percent of all search failures can be considered library errors, i.e., shortcomings in library routines.”

These errors indicates that four were a result of books located on sorting shelves or trucks, two were overdue in circulation, one was on reserve in Lending Services, five were declared lost, and the remaining forty-nine could not be located by library staff.

Circulation Errors
Twenty-seven (25 percent) of the failures were the result of titles already being on loan when the patron searched for them.

Acquisition Errors
Twenty-one of the library errors were considered acquisition errors, i.e., patrons were searching for specific titles which the library did not own. A further analysis of these titles in terms of their suitability for an academic library collection indicated that at least nine, but not more than fifteen, could be fairly judged to have been acquisition errors.

Patron Errors
More than one-third of all search failures were errors committed by the patrons. Of these, thirty-eight (60 percent) failed to use the card catalog correctly or interpret its contents accurately. An additional twenty (32 percent) occurred because patrons were unable to locate a title on the shelf when, in fact, it was there. A small proportion, only five (8 percent), resulted from erroneous bibliographic information brought to the catalog by the patrons.

Matching and Catalog Use Errors
A total of thirty-eight patrons made matching and catalog-use errors. Note that these failures represented 60 percent of all patron errors—patrons thus appeared to be ineffective users of the card catalog. They experienced difficulty in gaining subject access, in understanding the use of the call number, and in differentiating between the various sections of the divided catalog.

Retrieval Errors
A surprising twenty (32 percent) of all sixty-three errors observed were made by card catalog users who, though having correct bibliographic information and correct card catalog information, were unable to locate books that were correctly shelved.

Bibliographic Errors
Judging from the small proportion (8 percent) of patrons who committed bibliographic errors, most of them were using

<table>
<thead>
<tr>
<th>Library Errors</th>
<th>Number (% of Errors)</th>
<th>All Errors*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malfunction</td>
<td>61 56</td>
<td>35</td>
</tr>
<tr>
<td>Circulation</td>
<td>27 25</td>
<td>16</td>
</tr>
<tr>
<td>Acquisition</td>
<td>21 19</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>109 100</td>
<td>63</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Patron Errors</th>
<th>Number (% of Errors)</th>
<th>All Errors*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matching &amp; catalog use</td>
<td>38 60</td>
<td>22</td>
</tr>
<tr>
<td>Retrieval</td>
<td>20 32</td>
<td>12</td>
</tr>
<tr>
<td>Bibliographic</td>
<td>5 8</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>63 100</td>
<td>37</td>
</tr>
</tbody>
</table>

*n = 172
adequate bibliographic information.

Other Sources of Error

In addition to library and patron errors, appropriateness errors are a third source of failure in subject searches. Whereas failures in the initial two categories typically represent titles not available at the time of need, appropriateness failures occur when patrons either fail to select call numbers from titles found in the card catalog, or decide not to borrow (or use in the library) the materials found after examining selected titles at the shelf. These decisions are usually made because the patron has already read the material or because, in his or her judgment, the information is too old or too new, not relevant, written in the wrong language or is in some other way not suitable to his or her information need.

In contrast to the large numbers of library and patron errors surveyed, only 8 percent of all failures observed were appropriateness errors. Unfortunately it is not possible from the available data to document the reasons patrons failed to select or use these materials. However, if patrons had had a better understanding of the information contained on the catalog card, it is possible that they would have been better able to distinguish early in their searches which titles were not appropriate to their needs.

Academic Status of User

Undergraduates conducted 69 percent of all searches surveyed and committed 71 percent of the known-item and 73 percent of the subject errors. In addition, as shown in table 6, they were responsible for the majority of failures in each error category with the exception of matching errors in subject searches.

A chi-square test was used to determine if the number of known-item and subject failures for undergraduates differed significantly from the number for other groups. The test indicated that undergraduates do not differ significantly in their search performance from all others.

While undergraduates were responsible for 71 percent of the known-item search failures, they committed a disproportionately large percentage (93 percent) of the catalog use errors. In the subject search category, where they were responsible for 73 percent of the failures, their share of catalog use (82 percent), and appropriateness (86 percent) errors was again high. They also fell victim to a disproportionately high number of circulation errors.

Graduate students and faculty committed relatively fewer catalog use errors than did undergraduates. The data indicate that the faculty more frequently encountered acquisition failures than other types of failures, while graduate students were more likely to commit matching errors.

Longitudinal Changes

All patron and library errors were analyzed to determine if there was a significant difference in performance between the first and second half of the semester. Two statistically significant findings should be noted.

Circulation errors increased from the first to the second half of the semester. Circulation failures represented 7 percent of all subject search failures in the first half of the semester and 18 percent during the second half. For known-item searches the failures increased from 2 percent to 22 percent. The most obvious reason for this increase in failure rates is that the chance that an item, particularly a specific known-item, will be in circulation increases as the semester progresses.

While circulation errors increased during the semester, catalog use errors decreased. Catalog use errors represented 21 percent of all subject search errors during the first half of the semester and 10 percent during the second half. For known-item searches the corresponding statistics are 22 percent and 9 percent, respectively. The decrease in catalog use errors may be the result of increased sophistication
TABLE 6
KNOWN-ITEM AND SUBJECT SEARCH FAILURES BY ACADEMIC STATUS

<table>
<thead>
<tr>
<th>Type of Failure</th>
<th>Undergrad</th>
<th>Graduate</th>
<th>Faculty</th>
<th>Other</th>
<th>No Answer</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bib</td>
<td>60%</td>
<td>20%</td>
<td>0</td>
<td>20%</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Acq</td>
<td>62%</td>
<td>14%</td>
<td>14%</td>
<td>10%</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Cat</td>
<td>93%</td>
<td>9%</td>
<td>0</td>
<td>7%</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Circ</td>
<td>73%</td>
<td>38%</td>
<td>0</td>
<td>8%</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Lib mal</td>
<td>63%</td>
<td>38%</td>
<td>0</td>
<td>8%</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Match</td>
<td>25%</td>
<td>42%</td>
<td>0</td>
<td>7%</td>
<td>33%</td>
<td>100%</td>
</tr>
<tr>
<td>Appro</td>
<td>85%</td>
<td>7%</td>
<td>0</td>
<td>9%</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Circ</td>
<td>83%</td>
<td>10%</td>
<td>5%</td>
<td>5%</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Lib mal</td>
<td>76%</td>
<td>8%</td>
<td>0</td>
<td>8%</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Lib mal</td>
<td>83%</td>
<td>8%</td>
<td>0</td>
<td>8%</td>
<td>0</td>
<td>100%</td>
</tr>
</tbody>
</table>

Key: Bib = Bibliographic
Acq = Acquisition
Cat = Cataloging
Circ = Circulation
Ret = Retrieval
Match = Matching
Cat use = Catalog use
Lib mal = Library malfunction
Appro = Appropriate

Note: Due to rounding, all rows do not total 100%.

among patrons, exposure to bibliographic instruction, more experience in using the library, or a greater willingness to ask for help from reference librarians.

SUBJECTIVE OBSERVATIONS

In the course of observing patron searches, several unanticipated patterns of user behavior were noted. Although these subjective impressions cannot be quantified or measured, they provide important information regarding user behavior and performance.

- Patron cooperation was excellent, even though the process of being watched may have impinged upon patron behavior and privacy.
- Many patrons did not bring writing materials with them to the catalog. It is possible, therefore, that the retrieval rate of the patrons who were observed by librarians was higher than it might have been because patrons were given a form on which to note call numbers and other pertinent information.
- Some patrons lacked persistence when they did not find their materials on the shelves. Nor did they seem to be aware of additional assistance available to them such as reference help, interlibrary loan, and traces.
- The divided card catalog was the source of many problems. Patrons wasted time looking for the correct section; some never did use the appropriate file.
- The name section of the card catalog provided further difficulties for patrons who searched for authors who were either prolific or who were the subject of many critical works, such as Shakespeare. Patrons failed to examine either the preceding or succeeding drawer when each contained appropriate entries.
- Patrons also failed to note the significance of location symbols such as Ref. and Folio.

"None of the observed patrons used the Library of Congress Subject Headings even though its use was discussed in bibliographic instruction classes and a copy was prominently displayed at the catalog."
None of the observed patrons used the Library of Congress Subject Headings even though its use was discussed in bibliographic instruction classes and a copy was prominently displayed at the catalog.

Many patrons were not able to follow the range identifiers on the stack ends or the arrangement of books in call number order on the shelves. Some titles were not found because they were very thin and their classification numbers were not visible to the patrons.

Few, if any patrons, checked the sorting area.

During the process of following up on materials not found by patrons, it became clear that certain idiosyncrasies in OCLC records and those of the library’s automated circulation system were not universally understood by staff.

**RECOMMENDATIONS**

Although the study indicated the success rates of the card catalog users at the William Paterson College Library were similar to those reported in comparable studies at other institutions, the committee members believed them to be unacceptably low. Therefore, an extensive list of recommendations was submitted to the library administration. Those that addressed library malfunctions, the largest cause of patron failure, were given priority. Among the recommendations for improving this area of library operations were initiation of inventory and regularization of shelf-reading programs. Recommendations for remedying circulation, patron and acquisition errors included improving signage, purchasing duplicate copies of high demand items, and incorporating discussions of patron retrieval and card catalog use problems into bibliographic instruction classes.

**CONCLUSIONS**

It is apparent that a library’s policy decisions, organizational structure, and physical plant idiosyncrasies influence patron success rates. At the William Paterson College Library these peculiarities included a building design and window placement that almost invited theft, a long period between inventories, and staff shortages that precluded sending overdue notices.

Although this study was designed to be an in-depth examination of patrons’ search successes and failures in a single library, the authors believe that analysis of these findings and the local circumstances that influenced them have implications for library administrators in other academic settings. These implications are presented as suggestions for those who are interested in improving the likelihood that their library patrons will find the materials they need.

An initial step is to consider the impact of lost and stolen materials on patron success. The ease with which materials can be taken from the library without being checked out can be assessed and past policies on replacements and overdue materials studied. The development of an appropriate and realistic inventory program, changes in the physical plant, and/or the installation of an electronic detection system are some methods of ameliorating the situation.

Another factor that may affect patron search success is signage. Directional signs that have become “invisible” to staff members who “see” them all the time may be woefully inadequate. An assessment of signage by an outside party may help improve patron access to materials.

This study has some additional implications for those involved in the design or selection of on-line public access catalogs. In order to minimize catalog use errors library planners should endeavor to design or select on-line systems with self-explanatory screen displays. Patron confusion and errors resulting from location abbreviations would be reduced if locations within the library (e.g., Ref., Doc, etc.) were clearly spelled out. Further, library jargon need not be incorporated into these systems. Classification numbers, for example, could be labeled “location numbers” or “shelf location numbers” rather than “call numbers.”

In addition, administrators may want to emphasize the inclusion of status information (i.e., whether a title is in circulation, at the bindery, on the shelf, etc.) in their
evaluations of public access systems. Errors stemming from patron failure to find materials on the shelf might be reduced if patrons searched more tenaciously. It seems reasonable to assume that if patrons knew that the material they want should be on the shelf their resolve to find it would be strengthened, and the likelihood that they would continue their searches by availing themselves of trace services offered by the library’s circulation department would be increased.

Finally, it is clear that a self-study such as the one described in this report requires a substantial investment of staff time and effort. However, this report also indicates that the rewards for this investment can be the collection of data which accurately reflect patron success and failure in obtaining needed library materials. Further, when the study is properly designed, the sample carefully drawn, and the return rate high, such an effort may enable library administrators to identify and measure the relative magnitude of the barriers to patron success.

REFERENCES

3. Ibid.
11. Saracevic, "Causes and Dynamics of User Frustration."
Developing a Systematic In-house Training Program for Integrated Library Systems

Stuart Glogoff and James P. Flynn

Staff training to enhance implementation of an integrated library system (ILS) should be tied to organizational goals and relevant management principles. Training methods should be scrutinized, and several key factors considered when developing a staff training program for an ILS. Among the important factors reviewed in this article are applying andragogic learning theory, employing effective on-the-job training techniques, selecting trainers for their competencies rather than their availability, and providing visible administrative support during all phases of the staff training project.

The University of Delaware Library is conducting a comprehensive staff training program as an integral part of implementing its integrated library system (ILS). This program was necessitated by such factors as limited vendor training; the need to recruit system trainers from among the staff; and the recognition that staff training for an ILS required far more planning than for single-function automated systems and that staff training is an ongoing project because of personnel changes and future system enhancements. The development of a "train-the-trainers" program entailed a comprehensive needs analysis review, some attention to management principles, a thorough evaluation of existing adult training practices, and the application of relevant learning theory to the training environment. This paper discusses the important link between applied learning theory and the program's overall development.

BACKGROUND

Implementing an ILS entails a variety of activities, among which staff training is one of the most crucial. Yet, planning, designing, and presenting a systematic staff training program in tandem with ILS implementation is not a regular practice. Reports of user education programs for the online catalog have caught the most headlines, while in-house training programs specifically designed for library staff have evolved more from necessity than from strategic planning. A literature search for articles addressing staff training for an ILS turns up little. For the most part, there is cursory treatment of the topic in the many works that cover planning, procuring, and implementing automated systems. Regrettably, few articles do more than acknowledge the need.

Urbanek points out that this scarcity of information is surprising in light of the voluminous treatment the subject receives in business and education, and considering...
Many library managers may rely on a vendor to provide training without considering long-term training needs. Descriptions of staff training for an ILS center on the use of vendor manuals and on vendor personnel who provide hands-on training to a limited number of staff members. In addition, some libraries designate a small number of people to serve as core trainers. The vendor trains these individuals who then have responsibility for instructing the rest of the library’s staff. Boss observes that libraries doing this “appear to have better ongoing training programs.”

Some descriptive discussions of staff training suggest guidelines for developing a formal in-house training program. Communication, in the form of a series of staff orientations and a periodic newsletter, is important. The number of participants attending each training session should be kept to a minimum. (A standard might be maximums of two persons per terminal and three terminals). Sessions should include extensive hands-on experience, be conducted as a series of briefings that build upon previous related training, focus on a specific set of related functions or techniques, allow practice time between sessions, and provide a mechanism for feedback to evaluate success. Since job tasks differ, training sessions may vary in content, length, and frequency. In addition, it is essential to ensure that the training methodology is consistent from trainer to trainer.

Implicit in the development of any staff training program is the assumption that the training will contribute directly and effectively to the achievement of overall organizational goals. Certainly, a primary obligation of any manager is to define the mission or purpose of the organization in terms of the clientele it serves. After the organizational mission has been defined, an operation system can be constructed to set major goals, clarify specific objectives, and arrange all subordinate activities into logical action steps contributing to the achievement of those goals. Odiorne argues that staff training, like any other organizational activity, must be goal-oriented, directed toward future effectiveness, and responsive to client interests. By establishing training objectives and selecting learning activities that enable trainees to acquire and improve job-related ILS proficiencies, the manager contributes to organizational goals and forges a direct link between improved staff performance, client satisfaction, and optimum exploitation of the library’s resources.

PROBLEMS OF ON-THE-JOB TRAINING

On-the-job training has certain shortcomings that may negatively affect a formal training program. Birnbrauer points out that on-the-job training is among the most expensive and least effective training methods used and whimsically compares it to the game of whispering a story in one person’s ear and passing it around the room.”

“Birnbrauer points out that on-the-job training is among the most expensive and least effective training methods used and whimsically compares it to the game of whispering a story in one person’s ear and passing it around the room.”

ADULT LEARNING THEORY

Historically, learning has been conveyed through the passage of knowledge from one individual to another. Skills acquisition, likewise, has followed the classic pedagogic model. This model em-
bodies the theory and practice of an almost exclusively teacher-dominated paradigm. Under a pedagogic learning system, the student is highly dependent upon the teacher for information, skills acquisition, or basic direction in the course of study. Curricula tends to be uniform and change only in the sense that a more experienced learner is expected to handle more complex instruction and demonstrate broader problem-solving skills. Needs assessment, curriculum planning, course design, and learner evaluation are determined unilaterally by the instructor. As student, one's interest in any particular subject has little to do with why it is studied; rather, one learns because others think it is important. Because the pedagogic is the learning model with which most adults are familiar, it becomes the model imitated most easily when shifting roles from student to teacher. This is important to remember when planning and designing a "train-the-trainers" program.

Many current experts in educational technology (particularly those influenced by Carl Rogers and Malcolm Knowles) argue that the classic pedagogic model is inappropriate for most adult learning activities. These authorities contend that adults learn best through a complex process that includes references to past experiences, acceptance of the value of the learning, involvement in directing the process, and hands-on experimentation in a non-threatening environment. In such a system, the role of the trainer becomes primarily that of a resource, someone who supports and validates the competency of the self-directed learner. This experience-based learning methodology is termed andragogy.

Because few trainers are familiar with the distinctions between a pedagogic and an andragogic approach to instructing adults, it is important to contrast differences between the two methodologies. An andragogical instructional style, for example, allows trainees to acquire online cataloging skills at their own pace. Further, the trainer's primary role is that of a technician/resource person available to trainees as needed. Trainers maintain a supportive and nonthreatening environment in which each adult trainee can function most effectively. By practicing adult learning theory the trainer will be more attuned to how adults learn and will be alert to the four typical problems described by Reynolds: (1) trainees who are afraid of the system, (2) trainees who resent having to learn to use it, (3) trainees who approach it with reckless abandon, and (4) trainees who have such a strong mental block that they simply cannot learn to use it effectively. Trainers must recognize that adults want their learning to be problem-centered, personalized, and responsive to their need for self-direction.

To enrich their trainees' learning experiences, trainers must acquire effective listening skills and questioning techniques. They need to understand the importance of providing feedback to trainees in descriptive terms rather than as evaluative statements. Knowles remarks that the traditional educational rhythm of lecture/discussion has given way to a more natural process in which a learner's previous experiences, coupled with a desire for supportive, self-paced, skills acquisition, can make the job of a staff trainer not only more effective but also more personally rewarding. Closely related to this is the importance, particularly when working with a problem trainee, of providing one-on-one training, which has been found to be the advantageous method of preparing a person to operate equipment or do a specific task.

One-on-one training techniques are significant for several reasons. Their use offers trainers the opportunity to reiterate the importance of creating a positive attitude in the trainee toward any skills-acquisition process. Trainers can also explain how and why such new skills will make the trainees more productive members of the organization. Finally, any instructional strategy based on andragogic principles assumes that each trainee, after receiving an overview of the online system, will invest a block of learning time in self-paced skills-acquisition exercises. Consequently, the trainer's orientation must be directed toward responding to trainees, and there is little reason to stress such traditional skills as lecturing.
"Administratively, it was felt that if we erred, it would be better to over-involve staff in the needs assessment process than to overlook them."

Of course, to presume that there is any one best way to educate all adults would be a misleading oversimplification of learning theory. Researchers such as Brookfield concur that the most effective adult education occurs when there is voluntary participation, mutual respect between trainer and learner, a collaborative spirit pervading the learning environment, ongoing interaction between all parties, frequent opportunities for critical reflection and performance review, and self-directed learning after the initial orientation session.

APPLICATION OF ADULT LEARNING THEORY

Needs Assessment

Many of the University of Delaware Library's staff already were experienced with various automated systems; collectively, these experiences offered much from which to draw in developing an effective training program. The circulation department labored with a batch-processed system for nearly fifteen years; cataloging has used OCLC since 1973; the acquisitions department served as a test site for OCLC's online acquisitions system in 1981 and had used it since; the reference department and branch libraries have conducted bibliographic database searches for over a decade along with searches of OCLC and RLIN; and interlibrary loan has participated in the OCLC ILL subsystem.

Rather than presume to know the staff's experience or what techniques to incorporate in our training program, a needs assessment instrument was distributed. Inviting staff to complete the training questionnaire was also a form of public relations. Each individual's experience became important to the success of the training program. Administratively, it was felt that if we erred, it would be better to over-involve staff in the needs assessment process than to overlook them.

The needs assessment questions focused on each staff member's experience with automated library systems. Questions addressed types of prior training as well as strengths and weaknesses of programs and invited comments on what to include—and avoid—in training. Of the 75 questionnaires sent out, there were 51 responses, from which came valuable information that was later applied to constructing the training program.

To the first question, Have you been trained to use an automated system?, 40 of the 51 respondents answered yes and indicated training on more than 20 different systems. This information offered the possibility of drawing upon a great breadth of experience.

Question 2, What type of training did you receive in order to work on the system?, included 8 options—staff were asked to check all that applied. The responses indicated that 30 had been trained by a coworker and 26 by a supervisor; 32 had learned by following instructions in a manual; 39, on-the-job; 6, through computer-assisted instruction; 3, with a programmed text; 11, in formal course work; and 14, in a vendor-conducted workshop. The responses indicated that nearly all had received training either from a supervisor or coworker or on-the-job. This fact led to the conclusion that good and bad techniques may be practiced and reinforced with each generation of employees.

Question 3, Did you feel that you needed a better background in library functions and automation in general to make the training more meaningful?, attempted to determine how important staff development workshops might be in preparing staff members for training on the system. Ten respondents answered yes, and 33 said no to this question. In a general section of the questionnaire, staff were asked Would you attend a basic-level training workshop?, and a few topics were listed. Responses indicated considerable interest in workshops on automation terminology and explanations of hardware
"It is not adequate to entrust the composition of a workplace training staff to the unpredictable results of asking for volunteers."

and software and how they interact, as well as in the library’s relationship to campus computing services.

The next few questions addressed training techniques. To the question Did you have sufficient opportunities to ask questions?, the response was unanimous (42 yes, 0 no). An open-ended question, What did you consider the single best teaching technique that you would recommend for use in vendor training?, was followed by What would you urge be avoided during vendor training? and a call for additional comments. Staff overwhelmingly requested small-group training with much hands-on experience and strongly voiced their disapproval of large lectures without practice time.

Information from the needs assessment clearly demonstrated that the majority of staff with prior automated library system training had received instruction through on-the-job sources. This variety of training experience may have been adequate, but there is no indication that it was conducted from an instructional perspective that acknowledged the need to present technical information to adults in a manner that recognizes their unique life experiences. Furthermore, with staff overwhelmingly requesting small-group instruction and hands-on experience, the need for an andragogic approach was underscored.

Selecting Trainers

The success of any staff training program rests, in a large part, on the competencies, expertise, and motivation level of individual trainers. It is not adequate to entrust the composition of a workplace training staff to the unpredictable results of asking for volunteers; nor is it adequate to request that unit supervisors designate the candidate(s) of their choice. Otto and

Glaser recommend that instructors be selected for their strong interest in people, professional stature, and proven ability to present detailed instruction in a clear, nonthreatening manner. Tracey argues for a more systematic selection process featuring development of training expectations based on organization goals, endorsement from the unit administrator, subject-matter expertise, peer respect, communication skills, self-confidence, emotional stability, and flexibility.

The information reported in the training questionnaire provided a foundation upon which to build a training program. Eighteen individuals, appointed as the core group of trainers, were selected by the library’s three assistant directors and represented all library departments. This was done for two reasons: to guarantee a broad base for the training program and to ensure that each department would have one person well-versed in the system for coworkers to consult as an internal resource.

Once the trainers were appointed, the immediate question was how best to prepare them for the task ahead. The program proposed more than simply training other staff members to use the system. Because there was no existing mechanism upon which to build the training program, one needed to be developed. Considerations included local manuals, customizing procedures, training new staff, updating experienced staff, retraining all staff as enhancements are implemented, exploring opportunities for computer-assisted instruction, and evaluating the program.

Training the Trainers

The university provides excellent support in instructional areas to its administrative and academic departments. Staff in the personnel employee relations office offer professional development workshops to faculty and staff in numerous areas, including teaching and training effectiveness. A specialist in this subject was asked to present a series of workshops on sound training techniques. This series was developed with three major themes, each of which eventually became the basis for a separate workshop: (1) basic con-
cepts in adult learning theory, (2) acquisition of training skills, and (3) practical tips for implementing these skills when designing or conducting staff training.

Because most of those selected to conduct online catalog training for the University of Delaware Library were not familiar with the distinctions between a pedagogic and an andragogic approach to instructing adults, the first workshop explored those differences. Workshop participants had the opportunity to discuss the fact that an andragogical instructional style would allow trainees to acquire online cataloging skills at their own pace. Further, the trainers needed to acknowledge their primary roles as technicians/resource persons available to trainees on a consultant basis. Trainers concentrated their energies on maintaining a supportive and nonthreatening environment in which each trainee could function most effectively.

This need to attend to the learning environment was stressed continually during the first workshop. As John Diebold has pointed out, automated information technology is a mixed blessing to many organizations. The obvious long-term benefits to be gained from a computer-literate work force can easily be offset by employees' anxiety toward things new or different. Feelings of "machine" alienation, lack of self-worth, and fear of failure are common during the learning phases of any computer-based systems implementation.

Workshop participants were also required to read a short article that reiterated adult learning theory and presented some training tips upon which to base the next workshop.

The second workshop examined skills by which trainers could enrich the learning experiences of their trainees. Participants practiced effective listening skills and questioning techniques and reviewed the importance of providing feedback to trainees in descriptive terms such as "Pressing RETURN at this point won't provide the information you want," rather than the evaluative statement "You must not have been listening this afternoon or you would have known better than to press RETURN now." Participants discussed in detail Wiley's advice regarding proper techniques for one-on-one training. His article was significant because it (1) reiterated the importance of creating a positive attitude toward any skills-acquisition process and (2) urged explanations of how and why such new skills would make trainees more productive and valuable members of the organization. At the conclusion of the second workshop, participants were given reading materials on training program design; they also were asked to reflect on the quality of the user training they were about to receive from the system vendor.

The third workshop began with a short critique of the vendor training that all participants had received. They felt this training was satisfactory but oriented too much toward an expectation that trainees would progress through the session at the same pace. Several mentioned specific situations in which the directive instructional technique used by the vendor resulted in making the group wait while one person's questions were answered. These observations, along with a thorough discussion of David Cram's recommendations for designing the "ideal" training course, led to the development of two distinct tracks for the library's staff training program.

Lesson Design

Following the workshops, trainers convened in two groups to concentrate on lesson design: one group addressed staff training on the online catalog and the other, the cataloging component. Each prepared a syllabus, sample searches, training aids, and practice exercises. Concepts discussed in the earlier workshops were applied; for example, each lesson was limited to no more than six participants using three terminals. Sessions began with an orientation outlining that lesson's objectives. Trainees were assured that there would be much hands-on experience, consistent exposure to the system, and opportunities for questions. The trainers also decided that a good technique for alleviating fear was to tell all trainees that there was nothing they could do to harm the system.

Other useful applications of adult learn-
ing theory were employed. Cataloging-component trainers reinforced the relevance of past experience by calling for comparisons between cataloging on OCLC and the new system. Both groups emphasized an interactive concept in which the machine was assisting the individual to use the ILS. Blocks of practice time were set aside so that all trainees could finish their exercises and work on the system at their own pace in a non-threatening environment—a trainer was available but not conspicuous.

Once the online catalog training was completed, a questionnaire soliciting feedback was distributed to all staff members. Its intent was to gauge staff response to the sessions and to learn if staff felt the trainers were well prepared. Forty-seven questionnaires were returned, and the responses indicated that the staff were, for the most part, pleased with the sessions. In response to the first question, How would you rate the overall value of your training session?, there were 13 "excellent," 24 "very good," 8 "satisfactory," and 2 "unsatisfactory" responses. Briefly reviewing other responses, 45 found that the training was presented in a clear and logical format, 38 found the trainer well prepared, 46 had sufficient time to ask questions, and 44 found their trainers responsive to the questions that were asked. Similarly, staff found the handouts clear and helpful. Finally, 42 felt that the training did prepare them adequately for using the online catalog. An open-ended comments section drew few responses. This feedback indicated strong support for the direction taken by the staff training program.

The training programs developed for the online catalog and for cataloging provided a theoretical background and the necessary mechanics. These principles were subsequently included in sessions for advanced cataloging and in a program on the technical services component for public service staff. Because application of andragogic learning theory worked so well, it has been applied to two staff training projects under development. One is a skills workbook for new technical services employees; the second is an interactive, computer-based education program on the circulation component. Both present a learning experience that is interactive and self-paced and conducted in a non-threatening environment.

OBSERVATIONS AND RECOMMENDATIONS

Successfully training staff on a newly implemented ILS can be a time-consuming affair that touches every library department. The successful in-house training program should have a training coordinator with the authority necessary for maintaining the responsibility and full administrative support. As Reynolds wrote, "Assigning training duties to whoever on the staff happens to be the most available at a particular time will not suffice." Conversely, adding the responsibility of conducting a training program to an already busy employee may place that person in the position of being unable to dedicate adequate time to other responsibilities. This has been mentioned as a frequent problem in information centers.

Additionally, it is crucial for trainers to know that their appointment to the training program carries real responsibility. Supervisors must respond appropriately to several key factors: many people who train other employees do not consider themselves to be in a learning delivery role. Instead, they see themselves strictly in terms of their primary work assignment. Training priorities and goals must be clearly stated, progress monitored regularly, and contributions recognized. Supervisors must understand that trainers need time away from normal duties to practice on the system and to work on planning the program.

American employers provide at least 17.6 million formal courses each year to almost 15 million trainees. For the library as employer, providing staff training on the ILS must be recognized as a necessary expense. It is also a critically important activity that clarifies and strengthens the relationships among organizational mission, long-range planning, project accountability, and professional development. Viewed in light of these consider-
lations, staff training should receive significant attention by library administrators when planning and implementing an ILS.

Projections indicate that by 1990 the majority of medium and larger libraries in North America will be automated. Library automation will affect the manner in which virtually all staff members perform their jobs and staff members will play an increasingly larger role in information retrieval. Creth considers that the significant role staff play in "creating a dynamic future for libraries" requires supervisors to pay serious attention to the job training process. There is no doubt that libraries must now address the question of how best to prepare staff for the changes ahead. The authors suggest a program that emphasizes workshops on adult learning techniques, skills acquisitions, performance measurements, program design, and short- and long-term training objectives. These components are readily transferable to other libraries.

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Pruett has undertaken the ambitious project of describing in these two volumes all aspects of scientific and technical research libraries other than medical libraries. On the whole, she is very successful; I would have liked something of this sort when I was in library school, and I anticipate referring to it for information, surveys of relevant literature, and reasoned summaries of the various aspects of librarianship in science and technology.

Obviously it is impossible to be totally comprehensive in a work of this scope. Pruett’s aim, as stated in her preface, is to “lean toward ‘everything you wanted to know’ when the literature seemed thin ... and lean toward more of an outline when there seemed to be adequate sources published.” One of the impressive features of the work is its thoughtful review of the literature.

The first volume is on functions and management. It is organized around what Pruett defines as the five primary functions libraries provide their organizations: information retrieval; current awareness; collection development; collection control (including circulation, shelving, cataloging, indexing, and bibliographic control); and document delivery. Also discussed are secondary functions performed in support of the primary ones: management, space planning, automation, and equipment selection and maintenance. Of course this division is somewhat artificial, and Pruett acknowledges the blurring of boundaries, particularly in light of integrated online systems. This volume also has a general introduction, a review of “scientific literature and its use,” and descriptions of three geological libraries (university, corporate and federal), used as a device to make some points more concrete and to emphasize the variations in libraries due to differences in settings and organizational objectives. This is an interesting approach that should be especially instructive to students who are relatively unfamiliar with details of technical library operation. Two of the descriptions are written by Pruett’s colleagues, as are two of the twelve chapters in this volume.

The second volume also comprises twelve chapters, including some very brief ones on special formats (conference literature, dissertations and theses, government documents, in-house and proprietary information, serials, maps, microforms, numeric data, patents, software, standards and specifications, technical reports, and translations). Of the seven subject-area chapters, only the one on geoscience is by Pruett, but there is little repetition or overlap.

Although I am favorably impressed with the work, there are occasions when the author’s judgment does not coincide with mine. She suggests the utility of a list of “citations that could be expected to be asked for from a sci/tech library” as a self-administered test for comparisons of sci/tech collections and document availability. But apart from certain core materials, sci/tech libraries are so much shaped by lo-
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I noted two instances of repeated sentences (word-processor syndrome?). In an illustrative example on the Bradford distribution, we find the sentence "The core collection of books then consists of everything which has not [sic] circulated in the last 60 months," which is presumably just a typographical error but might confuse a student. Finally, I don't think the index is up to the quality of the work as a whole. Most of the entries seem to be taken from section headings, and information in paragraphs without separate headings may be difficult to find; for example, in volume 2, the chapter on physics has a brief but useful survey of literature on the browsing behavior of physicists and other researchers, but neither volume index has
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the heading "browsing." However, lapses in general are minor and could be corrected in a second printing of what is clearly going to be a standard work.—


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