

Planning and Budgeting for School Media Programs at the Building, District, and Regional Levels: O.R. in the Little Red Schoolhouse*

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The problems of resource allocation in the school library are analyzed and a practical operations research (O.R.) approach towards accountability is presented. A discussion of the nine-step solution procedure is given, including the use of four planning instruments: inventory of services, preference form, data collection guide, and program costing matrix. The use of cost-benefit analysis is shown to be helpful in determining the "best" allocation strategy. There is a presentation of implementation suggestions, and examples of the use of the methodology in actual school situations are given. Extensions of the work from building level school library media programs to district (system) and regional level learning resource (media) programs are also presented.

Introduction

The purpose of this article is to provide a discussion of the recently completed work of the authors to develop a practical approach to systematic planning for the school media center program. The methods and procedures developed have been tested in a realistic environment and have been successfully implemented to at least a partial extent in a variety of schools. Thus, we have an example of an actual application of library operations research.

There has been of late some criticism of the use of the so-called systems approach, especially in the area of public institutions [1], such as a library. If one were to set out to demonstrate that there was some applicability for operations research (O.R.) methods in libraries, which are often

in the public sector, he or she might attempt to analyze one of the large federal libraries, or perhaps even one of the national libraries. With their relatively large budgets and staffs, with teams of systems analysts and skilled technicians as part of the staff, and with some history of library automation and innovation, it seems natural that these large special libraries would be a prime target for O.R. models. Yet, we turn instead to the school library. This is a much smaller organization, founded on strong tradition, existing in a large public bureaucracy, often involved in local politics, concerned more with the issues of education than of management, coping with ever-increasing budget crises, often including problems of understaffing.

The school librarian must face increasing costs, an often increasingly divergent client population, increasing demands for a larger variety of services. Moreover, the school librarian may find stronger competition for scarce resources and budgets. The school librarian can be viewed primarily as a mediator, facilitating the interaction between clients and instructional materials in all media forms [2]. However, there is pressure to emphasize accountability, to be able to justify current expenditures, as well as requests for budget increases. In addition there is a need to apply modern, sophisticated management techniques in a systematic approach to management decision problems, rather than haphazard trial-and-error, rule-of-thumb, seat-of-the-pants management decision making.

The School Media Program

Let us begin to model the school library. Our focus is on the resource allocation decisions involved in planning a school media program. Figure 1 shows how resources relate through technical operations to school media program service outputs, which in turn affect instructional programs,

*Presented at the Joint National ORSA/TIMS Meeting, Miami, Florida, November 1976.

Received September 30, 1977; revised August 4, 1978.

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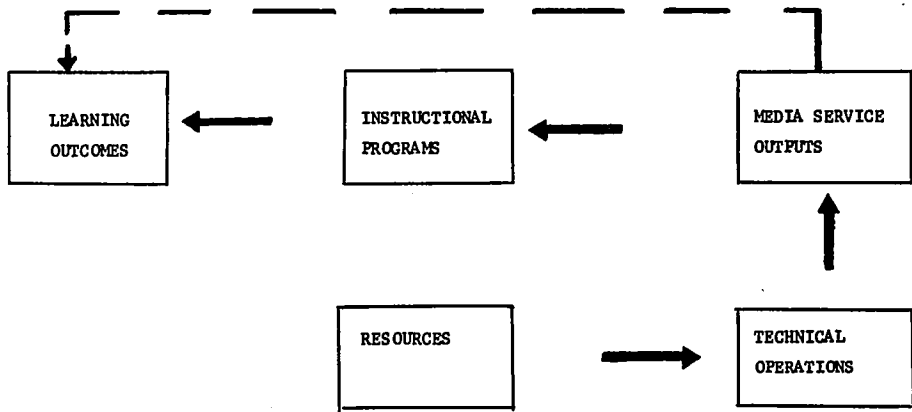


FIGURE 1. Model of media program accountability

which in turn affect student learning outcomes. This illustrates the importance of the fact that a school library is a support organization for an educational institution. We shall concentrate on the school media program itself—the resource inputs and the service outputs—leaving the idea of incorporating the concepts of educational programs and learning outcomes into a planning methodology for future research efforts.

Figure 2 illustrates the details of the school media program converting resource inputs into service outputs. This well-known “black-box” diagram, which has been used to describe more general information systems, divides the school media center into three sectors. The first sector, input resources, reflects the resources of materials, equipment, and space. As we shall see, these resources will be measured in terms of the budget required to provide these resources. The second sector, processing, involves the use of school media program staff time to perform the conversion operations that change the input resources into service outputs.

We shall see that these conversion operations will be measured in terms of both the time and cost of the staff who perform the operations. The third sector, service outputs, deals with the provision of various types and levels of service offered to the clients or users of the program. We shall make a distinction between those activities that are actual service output activities, or “ends events,” and those activities that are interim or “means events” as part of the processing sector. For example, answering a reference question is an output service activity, while cataloging a book is a processing activity. This distinction is made to facilitate the planning process.

The school media program is initially viewed at the building level, as a unique school media center or library within a school. The planning process can then be generalized to a program involving a whole system, or school district. The district program can be further generalized to a regional program involving several districts in a geographical region. The district or region may have a media center as

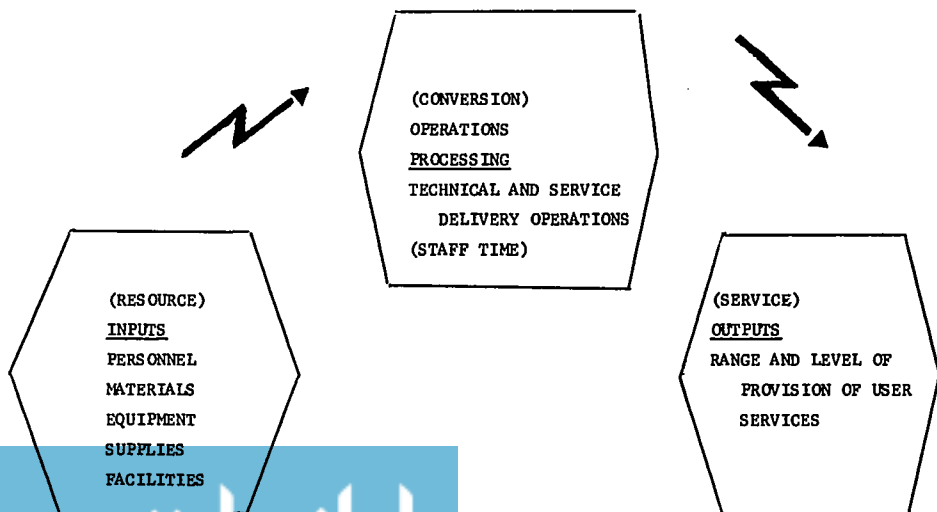


FIGURE 2. The media program model.

part of the program, but also offers other services including some services to school or district libraries.

The literature has several books and articles on management techniques and theoretical approaches to management decision making. Some of them are suitable for use in designing solutions to library problems [3,4,5,6]. However, often the techniques have often not been designed specifically for libraries nor have they been marketed to librarians. There is a need then to adapt the systems approach, based on scientific management, systems analysis, and O.R. methods, to school media programs.

The Planning Methodology

The planning process must, in part, respond to several important issues. The media program must be adequately defined in terms of functions performed for the client. The optimal mix of services must be determined for any given set of local conditions. In addition, one must be able to determine the operations, resources, and costs for a desirable mix of services, and to specify which of such mixes are feasible. However, one must also decide who gets to determine what services are important for a given set of conditions and how such a determination is to be made. Clients should be involved in the planning process to increase understanding as well as use of the services provided. These are basic issues that must be taken into consideration.

The methodology, if it is to properly serve its purpose, must be designed so that it meets several stringent requirements. Table 1 lists and describes these requirements in detail. The methodology must be system oriented; valid and reliable; suitable for self-application; practical, easy, and inexpensive to apply; quantitative; capable of allowing for comparisons of the results of policy and/or resource changes; and meaningful to clients, media specialists, and administrators.

The methodology we have developed for use in planning for school media programs consists of nine distinct steps. As we shall see, there are four planning instruments or printed forms that are used as part of the methodology. The nine steps remain relatively constant for the building, district, and regional programs. On the other hand, the details contained within the planning instruments for the building level program are quite different than those for the district and regional programs; although the basic structure of the forms is constant.

Step One

The first step in the procedure is a definition of the school media program service output alternatives. This entails an inventory of all the current and potential service outputs a school media program can offer its clients, which is the first planning instrument that will be used as part of the planning process. A brief outline of the inventory of services for a building level program is given in Table 2, while the inventory of services for a district or regional level program is given in Table 3.

TABLE 1. The media program planning methodology requirements.

Face Validity	Readily acceptable and meaningful to users, administrators, and media specialists
Suitability	Suitable for self-application by media program practitioners
Comparability	Useful for determining changes over time, and differences within and among media programs
Practicality	Capable of being carried out at reasonable cost, being nondisruptive of regular operations, and being nonburdensome to users
Quantitativeness	Capable of providing information expressible as numbers for manipulation and summarization
Reproducibility	Substantively valid and reliable
System Orientation	Capable of reflecting the media program's capabilities when acting alone, and when acting as part of a larger system

The inventory is divided into five main areas: Access to Materials, Equipment, and Space; Information (Reference) Services; Production Services; Instruction; and Consulting and Program Development Services. Each area is subdivided hierarchically to provide a list of all services, from self-help services (e.g., provision of a self-help reference tool such as a dictionary) to full-service items (e.g., compiling bibliographies and answering reference questions). The district/regional (higher) level inventory includes services provided by a media center plus services to lower-level media staff. In addition to access to its own collection of materials, the higher-level program may offer centralized technical services such as acquisition and cataloging to lower-level media program staff. Also, the consulting category must be described in much more detail for the higher-level inventory. Other differences can easily be noted from a comparison of the two figures.

The media program staff should analyze the appropriate inventory instrument and must fully understand and accept the inventory, since it is fundamental to the rest of the planning methodology. Any minor modifications, such as using different terminology more acceptable for a given set of local conditions, is fine. However, extensive revisions may invalidate the instruments, which have been extensively field tested.

Step Two

The next step is to survey the perceptions of the media program staff, clients, and administrators as to what services are currently being offered by the program. The inventory is formulated as a questionnaire [7], which asks each member in the sample about the media programs by allowing him to specify the level of service offered by the program. The instrument may also serve to help define each service.

The results of this step show that the differences between the clients' perceptions and those of the staff is large. There is often disagreement even among staff as to

TABLE 2. Inventory of school media program services—building level.

- I. Access to materials, equipment, space
 - A. Provision of materials
 - B. Provision of av equipment
 - C. Provision of space in media center
 - D. Use of materials, equipment, and space
 - E. Provision of materials not in media center collection
 - F. Provision of special collections
 - G. Provision of copying services for users
- II. Reference services
 - A. Provision of collection of reference materials for self-help
 - B. Assistance in identification and location of materials in media center
 - C. Assistance in identification and location of materials outside the media center collection; e.g., information about other collections and referral to other sources
 - D. Alerting the user and current awareness services
 - E. Assistance in compiling bibliographies
 - F. Answer services
- III. Production services
 - A. Provision of materials, equipment, and facilities for users to produce instructional materials, including graphics, photography, and reprography
 - B. Provision of technical assistance in producing instructional materials
 - C. Production of materials by media center staff, including instructional television programs
- IV. Instruction
 - A. Directional services
 - B. Provision of formal instruction and orientation programs
 - C. Provision of in-service training programs
 - D. Provision of informal instruction on request
 - E. Provision of guidance in reading, viewing, and listening
- V. Consulting Services
 - A. Provision of consultation to individual teachers regarding selection and use of instructional and professional materials and equipment and the design of instructional strategies and content
 - B. Provision of consultation to teaching teams and department or grade level groups
 - C. Contributing to overall curriculum planning in the school or system through participation on curriculum planning committees
 - D. The media center serves as a clearinghouse for instructional media

TABLE 3. Inventory of learning resources (media) services—district and regional levels.

- I. Access to materials, equipment, space
 - A. Provision of materials
 - B. Provision of av equipment
 - C. Provision of space at central location(s)
 - D. Use of materials, equipment, and space
 - E. Provision of materials and equipment not in the center(s') collection(s)
 - F. Provision of special collections on specific subjects
 - G. Provision of copying and duplication services for users
 - H. Provision of materials and equipment processing services
- II. Information (reference) services
 - A. Provision of reference materials for self-help
 - B. Assistance in identification and location of materials in the center(s)
 - C. Assistance in identification and location of materials not in the center(s); e.g., information about other collections, referral to other sources, files of community resources
 - D. Alerting the user and current awareness services
 - E. Bibliographic and searching assistance
 - F. Answer services
- III. Production services
 - A. Provision of materials, equipment, and facilities for users to produce instructional materials
 - B. Provision of technical assistance in producing and/or adapting instructional materials
 - C. Production of materials by staff for users
- IV. Instruction
 - A. Directional and orientation services
 - B. Provision of in-service training programs
 - C. Provision of instructional programs for students; e.g., actually conducting instructional programs
- V. Consulting and program development
 - A. Consulting
 - B. Staff selection
 - C. Cooperative activities
 - D. Promotional activities
 - E. Planning services

methodology should not go further. Unfulfilled promises can only lead to client frustration and dissatisfaction.

At the district and regional level, this step is really unnecessary. The use of the inventory questionnaire in a pilot study has resulted in a general survey of the range and extent of some district and regional programs [8], both in Texas and, to a lesser extent, nationwide. It was found that Production and Instruction services were less common than the other categories of service outputs. One can also distinguish between services provided in the media center (in-house) and those provided out of the center. Regional programs provide more Reference, Production, and Instruction services, and fewer Consulting services than district programs. In addition, special centers provide fewer but more specialized services, which is to be expected.

Step Three

The third step is the determination of client needs and priorities. Here we assess the relative importance of the

program policy and services. This discouraging result only points to a need for better public relations and policy formulation. The use of this planning process step has a secondary by-product. The clients in the sample become more aware of the media program; and they learn that there are services that could be offered that presently are not. Some services may even be new concepts to some users.

One word of caution is needed. The librarians must realize that they have promised that the users will have a major voice in the planning process. This step will raise expectations for new and improved service outputs. If a decision maker is unwilling to make needed program revisions in response to these client expectations, the planning

various services outputs. This step is crucial to setting the criterion by which resources will be reallocated. Because of its importance, we divide this step into five substeps.

Substep 1: The first task is to get administrative authorization and approval, in order to assess client priorities. In point of fact, this should be done for the whole planning methodology. This means getting the approval of the principal, superintendent, or regional director. If the process is explained properly, this generally should pose few problems, particularly in the current climate of accountability. We shall discuss this in more detail later as part of the implementation strategy.

Substep 2: The second substep dictates that a sample of media staff, clients, and administrators be chosen. These samples should generate a representative cross section of the populations. The members of the sample should have participated in step 2. Since the sample group will be asked to come together to discuss their preferences, the total group size should not exceed 20. One will probably want to include most, if not all, media program staff. Judgment may call for the addition of a few key administrators and influential clients to increase the possibility that needed changes can be implemented.

In the case that more than 20 people are selected, one can generate more than one discussion group. For a large district or region, the sample size need not be so restrictive, since the discussion will be carried out by mail in a Delphi-like method [8, 9]. Standard statistical sampling methods can be employed to generate rules for sample size and makeup [8, 9].

Substep 3: The second planning instrument consists of a preference weighting form. It is essentially an outline of the inventory, with space allotted for a weight for each service. Each individual should complete the form, specifying his/her own personal preferences for service.

The scale used is a linear, additive, fixed-sum scale. Each participant has a total of only 1000 points to allocate. This limit imposes a note of realism, in that one cannot check off all of the services as most desirable. The participant allocates points first among the five major categories. Then, the points allocated to a given category must be allocated to each subcategory. The participant goes down the inventory hierarchy, allocating the points in a subcategory to the corresponding sub-subcategories.

The participants are encouraged to weight heavily their true preferences, ignoring what services are currently being offered or the costs of such preferred services. Thus, there is also a sense of idealism. The participant is also instructed not to waste a few points spread here and there, trying not to give any service a zero. A few points will have little affect on a subcategory when compared to the cost of that subcategory, so one should place points only on truly preferred subcategories in reasonably large amounts.

Substep 4: The participants now come together in a group session and attempt to reach a consensus. Each participant should first present his/her personal preference

weights, perhaps displaying these weights on a large chart for all to see and compare. Then the discussion of the various points of view commences. Some of the differences should then be quickly resolved once the early discussion settles definitional problems. The media program staff must play an important role in defining service properly.

One must overcome resistance to this method of forcing a weight on a subjective preference. One must also reinforce the idea that the consensus values will actually be used to reallocate resources to provide preferred services.

Some trade-offs are to be expected: a few points added here in return for a few points given there. This give-and-take negotiation will result in a better awareness and understanding of what type of program the clients really want and need. Any refusal to bend from a given position should be documented; it may imply a special case deserving special attention. If consensus cannot be reached, averaging may be used as a last resort. The district and regional programs, being larger in terms of both population and geography, may require that consensus be attempted by mail. Here, one asks those with extreme positions on each subcategory to document their reasoning. Averaging will probably be required, since logistics allow only for a few rounds of mail discussion [8].

One issue that must be brought forward is the relationships between the various service outputs. These relationships are probably best understood by the media program staff, and they should assume a strong role in explaining them to others during the consensus discussions. For example, one relationship of interest exists between self-help production facilities and instruction. If one expects to provide facilities for users to produce their own instructional materials, e.g., overhead transparencies, then one must hold training sessions to teach users how to use the facilities. Another example is the relationship between instruction and reference. If one contacts users often in the course of instruction services, the use may become self-reliant in terms of answering some of his/her own reference queries.

Experience has shown that the staff from those media programs that are new or drastically underfunded tend to stress access to materials, while staff from programs with more developed collections tend to venture into other areas. Contrary to what one might suppose, we've been told by people using the planning process that users tend to be quite conservative, weighting heavily services currently being offered. It is the media program staff that tends to want to venture into new area of service. Another issue is that clients involved in district and regional level program planning tend to confuse the level at which service is offered. A teacher, for example, tends to want access to needed materials and does not care which program level does what to help provide them. Thus, such a client would place little emphasis on a district program providing centralized cataloging services to building level programs. Moreover such a client would not differentiate between materials provided at the building level and those materials provided at higher levels. When planning at these higher levels, con-

TABLE 4. Resource requirements for media program service.

Service Outputs	Processing Costs	Input Resources Costs		
		Materials	Equipment	Supplies
I. Access to materials, equipment, and space	Annual cost of staff time for processing, selection/evaluation, maintenance	Annual cost of additions and replacements in collection	Annual cost of additions and replacements	Annual cost of supplies for access operations
II. Reference	Annual cost of staff time for reference	Annual cost of additions		
III. Production	Annual cost of staff time for production assistance and services	Annual cost of production materials	Annual cost of additions and replacements	Annual cost of supplies for use with production materials
IV. Instruction	Annual cost of staff time for instruction services			
V. Consultation	Annual cost of staff time for consultation services			

sensus may not have much meaning. However, average weights for each category of service for each client group, plus documentation of differences, can be very useful.

Substep 5: The consensus results must be communicated back to the entire client group populations to test their validity. Some of the people in the general population who did not participate in the weighting sessions may wish to respond to the values that will help shape future media programs. Other interest groups, such as the PTA, should also be kept informed. Assemblies, newsletters, and student newspapers are some of the vehicles for such communication.

Step Four

The fourth step of the planning process is the assessment of the current level of media program resources and operations, in terms of what is required to provide the levels of service now being offered. That is to say, the concern is with how much the program costs. The difficult task of data collection, rooted firmly in scientific management [10] and cost accounting [11] concepts, now begins. Table 4 shows how the resources are distributed across the five major service categories. The resources are given in terms of cost. To facilitate the procedure, the third instrument has been designed. This is the data collection form, and it is a worksheet.

The first part of the data collection form relates to materials, equipment, and supplies. For each subcategory of service, we ask for the following material and equipment information: current holdings, number of items replaced, number of items added, average (unit) cost of the item, the cost range (maximum minus minimum cost of an item), the number of unfilled requests for such items, and the number of service outputs—both in-house and out-of-center use. The precise use for all of this data is discussed below.

We recommend that the media program staff select a sample of working days in the academic year, perhaps 20 days in all. This sample should be representative of the year, including days at the beginning, middle, and end of the week, month, semester, and year. Data is only gathered on these sample days.

The supplies are not necessarily broken down in separate subcategories, but can be lumped together in one section in order to avoid the difficulties of trying to cost out the numerous small items such as paper clips, typewriter ribbons, etc. Moreover, media programs often have separate budget categories for supplies.

The second part of the data collection form is devoted to staff time. For each subcategory of service, we have listed the major operational tasks involved. For example, under the subcategory of access to materials, we have the operational tasks of processing materials, selection and evaluation, and collection maintenance (including the taking of inventory and report generation). One can compute a daily average, in terms of minutes per day, spent on doing each operational task. Each of the staff members of the media program should be noted separately. One can also calculate a yearly average as a percentage of each individual's total annual time on the job. If any specific activities are not included in the sample of working days, one can modify the yearly averages to incorporate such activities, but only with extreme caution.

This part of the form also allows for the recording of operational outputs, intermediate products such as catalog cards, and service outputs and unfilled requests for services not included in the first part of this form.

One additional benefit of the planning process is the information gained about the program. Table 5 illustrates a chart that can be generated to show how staff time is spent. Since libraries are labor intensive this can be of considerable use.

One final point is that the emphasis is on direct costs. This seems reasonable in light of the fact that media pro-

TABLE 5. A worksheet for a media program work profile.

Service Outputs	Tasks Performed	Number of Performances	Average Time and Range	Percent of Total Time	Percent of Total Professional Time	Percent of Total Clerical Time
I. Access to materials, equipment, and space						
II. Reference						
III. Production						
IV. Instruction						
V. Consultation						

grams are part of a larger system, and as such the staff has little control over capital costs or overhead.

Step Five

This step is a determination of the costs of the current program, as well as a formulation of the basis of a model to calculate the costs of a preferred program. In essence, one performs an analysis of the data gathered in the previous step. The fourth and final planning instrument, the program costing matrix, is now employed.

The instrument is again organized along the lines of the service categories and subcategories, as dictated by the inventory of service outputs. For each major category and subcategory, the matrix lists first the appropriate materials and equipment items. The data for these items is virtually a transcription from the first part of the data collection form. However, one must now calculate for each item the total program cost as the product of the average cost times the sum of the items added and items replaced. This sum is the total number of items purchased. The previous step provides documentation for replacement, so an accurate picture of true collection growth can be given. One then adds the supply costs to the subtotals of materials costs and equipment costs, to yield a subtotal for each major category and subcategory.

The staff time for each major operation is recorded next in terms of the percent of time spent by each staff member annually. The annual salary of each person is also recorded, and the program cost is calculated as the product of the salary times the percentage for each staff member. These are totaled to yield a subtotal staff cost for each major category and subcategory.

With this, one can now generate a summary subtotal of program costs for each major category and subcategory. Then, one can generate a complete summary of each major category and the total program, in terms of staff cost, total cost, and percent of total cost. There is also room to show the consensus priority values for each major category, also expressed as a percentage. A complete picture of the current cost-benefit status of the media program as well as the consensus preferences can now be shown.

Step Six

This step is a calculation of program capability. One looks at preferred service levels and determines their cost. One can then examine the feasibility of such a preferred program. Moreover, one can look at current resource availabilities, and calculate the range and level of preferred services that are feasible. This will lead to a reorganization of the program, a reallocation of resources. The details of this reallocation will be presented in step eight below.

Step Seven

One must now communicate the current feasible levels of preferred services to the total client group. This means abbreviating the preference weighting form, indicating current capabilities of preferred services. A clear, documented picture is now available, with support to show what the media program can and cannot do, and why it is so. Moreover, needs for additional funding can be explicitly stated and demonstrated.

Step Eight

This is the reallocation step, which implements changes in operations to provide the range and level of preferred services. The basic data come from the data collection guide, preference form, and program costing matrix. The last instrument will be used most heavily. The purpose of this step is to improve the potential impact and benefit, or utility, of the media program by implementing the high-priority services at feasible levels.

The first phase deals with the reallocation of current resource levels. One examines the high-cost/low-preference service to see if they can be reduced in order to free resources for high-preference services.

The second phase, useful in all of the other phases, deals with analyzing and increasing efficiency. The focus is on the operational tasks and how one can accomplish the same levels of service at lower resource requirement levels.

The third phase is concerned with justifying requests for additional resources and budget support. The fourth phase

is a special case, concerned with coping adequately with reductions in resources. See Table 6 for details.

One can look at the problem in a linear programming problem format [3]. Of course, the librarians will not be shown the linear programming model, since there is no need to use the mathematics to get the point across to them. The data are not rigorous enough to satisfy the assumptions of linear programming, but the authors have used the approach to help structure the reallocation strategies.

Let

- Z = total annual program benefit,
- n = the number of different service outputs currently or potentially provided,
- c_j = the worth (preference weight) of service category j per unit of service output j provided,
- a_{ij} = the amount of resource i (materials, equipment, supplies, staff time) required to produce one unit of service output j ,
- b_i = the amount of resource i annually available for the media program,
- m = the number of different resources used in the media program, and
- x_j = the decision variable specifying the number of units of service output j provided annually.

This allows us to generate the model

$$\text{Max } Z = \sum_{j=1}^n c_j x_j,$$

$$\text{s.t. } \sum_{j=1}^n a_{ij} x_j \leq b_i, \quad \forall i = 1, \dots, m,$$

$$x_j \geq 0, \quad \forall j = 1, \dots, n.$$

The main drawback to using the linear programming model is the interactions between services, which currently cannot be modeled. However, experience has shown us that the professional librarians can consider such complexities, and generate realistic reallocation strategies that can be implemented and lead to genuinely improved media programs. A second problem is that the preference weights are not divisible; not capable of yielding a c_j value representing a unit worth. Perhaps future research will provide methods for measuring these worths.

One important note is that some people naively wish to equate preference percentages and cost percentages. This incorrect notion must be corrected in the minds of the media staff. It is their judgment that will prevail in the reallocation decisions.

Step Nine

This final step is really a periodic evaluation step, examining the services offered and documenting the changing needs of the clients. It is essentially a repeat of steps three through five. It also means preparing appropriate reports and resource requests, utilizing the appropriate data analysis as justification. Also it means implementing the

TABLE 6. Reallocation strategies.

- I. Reallocation of current use of resources (analyzing effectiveness)
 - A. Compare values and use of resources
 - B. Identify major discrepancies
 - C. Consider alternative reallocations
 - D. Consider incremental changes and strategies
 - E. Estimate reallocation performance targets (increases and decreases)
 - F. Assess net effect
- II. Analyzing efficiency
 - A. Identify operations to be analyzed (high cost/low value)
 - B. Examine types of possible changes
 - Can an operation be eliminated?
 - Can an operation be cut back without lowering the quality or level of service output?
 - Can an operation be delegated to less expensive personnel?
 - Can procedures be improved or replaced to reduce time and/or cost of an operation?
 - Can an operation be centralized or done commercially?
 - C. Specify the types and amounts of change
 - D. Calculate general and specific savings
 - E. Reallocate savings as in I
- III. Reporting and justifying resource requests
 - A. Document accountability and stewardship
 1. Current service achievements
 2. Use of resources to achieve service outputs
 3. Program changes made to increase effectiveness and efficiency
 - B. Identify services needing increases and document need
 - C. Calculate resources needed beyond current capability to provide the needed service increases
- IV. Coping with reductions
 - A. Identify amount of reduction in each resource category
 - B. Identify service areas to be cut back (high cost/low value and use)
 - C. Determine specific reductions and strategies in each service category selected
 - D. Determine specific savings and compare with necessary reductions (return to C if additional reductions are necessary)
 - E. Consider effectiveness and efficiency implications
 - F. Document results and implications of reductions (service outputs and operational efficiency and effectiveness)
 - G. Report results and user implications

changes in technical operations where performance inadequacies have been identified.

This step recognizes the importance of reporting the results of the planning process and implementing those results. It recognizes the dynamic nature of a media program, requiring continuous monitoring and control. It also completes the planning methodology.

Implementation Strategies

A few comments are appropriate as to how a school librarian can begin to use the planning methodology in his/her program [8]. Table 7 presents a sequence of steps that should be followed for building level programs. The level of participation (conducts, assists, or participates) is indicated for each participant group for each step.

TABLE 7. Implementation sequence—building level.^a

	Media Staff	Principal	Advisory Committee	Student Council	Teachers	Students	Teacher Sample	Student Sample
1. Explanation and decision	C	P						
2. Orientation, <i>inventory</i> , <i>preference</i>	C	P	P					
3. Begin data collection	C							
4. General orientation	C	A	A	P	P			
5. Select <i>inventory</i> and <i>preference</i> samples	C	A	A	A				
6. <i>Inventory</i> survey	C P	A P	A P	A P	P			P
7. <i>Preference</i> survey—individuals	C P	A P	A P				P	P
8. <i>Preference</i> survey consensus (dept. grade level, students)	C	A	A	A			P	P
9. <i>Preference</i> consensus—overall	C	A					P (reps.)	P (reps.)
10. Present results of <i>inventory</i> survey	C	A	A	P	P	P		
11. Complete <i>matrix</i> and program analysis	C	A	A					
12. Present priorities, capability, changes	C	A	A		P	P		
13. Implementation of new program	C							
14. Reevaluation and program revision	C	A	A	P			P	P

^aKey: C, conducts; A, assists; P, participates.

TABLE 8. Implementation sequence—district or regional level.^a

	Learning Resource Program Administration	Learning Resource Program Staff	Planning Task Force	District or Region Administration	Client Advisory Committee	Client Group Samples
1. Initial consideration of process	C	A				
2. Presentation and decision	C			P		
3. Develop implementation plan	C		A	A		
4. Orientation and data collection instructions	C	P	A			
5. Begin data collection	A P	P	A P			
6. Select client samples	C		A	A	A	
7. Conduct preference survey	C		A	P	A	P
8. Review and revision of data	C	P	A			
9. Complete matrix and program analysis	C	P	A	P	P	
10. Report priorities, capability, and proposed changes	C	P	A	P	P	P
11. Prepare resource requests and other reports	C		A	P		
12. Implementation of program changes	C	A	A			
13. Reevaluation and program revision	C	P	A	A	P	P

^aKey: C, conducts; A, assists; P, participates.

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The same process for regional and district level programs is given in Table 8. Moreover, there have been a few attempts to model the implementation process as a PERT model [8, 12]. This allows a time sequence to be placed on the implementation process.

Summary

The authors have attempted to develop a practical, systematic approach to planning media programs. These tools have been discussed in workshops around the country, and have been tested and used in a number of programs. Early results indicate successful use and satisfaction with the process.

Acknowledgment

This work was partially supported by the Texas Education Agency, Division of Instructional Resources, and by the Maryland State Department of Education, Division of Library Development and Services.

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