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ABSTRACT

The Leadership Training Institute at the School of Library Science, Florida State University, has compiled a guide for evaluating programs in library leadership training. There are chapters on the qualifications of a training director; the evaluation process; context evaluation, which includes a statement of the problem, objectives, and criteria; selecting alternatives; evaluating a program in process; assessing results; external evaluation; and heuristics, or evaluation based on personal experience. In addition, there are three articles on practical applications, dealing with forecasting for long range planning, evaluation tips, and a process monitoring feedback system. Appendixes contain evaluation techniques and forms from several projects, a bibliography, and a short glossary. (LS)

PLANNING & EVALUATING LIBRARY TRAINING PROGRAMS

A Guide for Library Leaders, Staffs and Advisory Groups

Brooke E. Sheldon, Editor

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The Leadership Training Institute
School of Library Science
Florida State University
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The Leadership Training Institute, School of Library Science, Florida State University, has prepared this guide, "Planning and Evaluating Library Training Programs."

The book is the result of much discussion and evaluation at the several sessions for Institute directors which were sponsored by the LTI earlier this year.

In recent years, evaluation as a logical component of educational activity and as a requirement in contract awards has become a much-bandied term. It has come to mean specific measurements (quantitative) yet also concern for goals, objectives, results (qualitative). All of education and much of librarianship is or should be closely involved in a continuing process of evaluation.

Unfortunately, most librarians and educators have received little or no formal training in the skills and reporting of evaluation. This handbook should help fill the gap of individual knowledge at the same time that it provides a useful tool for applying a well-publicized model to individual situations.

This working tool will be even more valuable if it is used as a guide, rather than as a final answer to problems of evaluation. The staff of the Institute is convinced that the sessions of the workshops which helped test and react to the guide are representative of a broad range of evaluation problems. The interest and follow-up of participants at these activities is reflected in these pages.

It is hoped that you will provide additional comment to the Leadership Training Institute staff as you read and use the guide. Your reactions and examples could help make concrete a continuing attention to, and realization of, evaluation as a basic element of every training and educational activity.

Harold Goldstein

Harold Goldstein, Director
Leadership Training Institute
Florida State University

June, 1973

Planning and Evaluating Training Programs

A Guide to Evaluation for Training Directors, Staffs and Advisory Groups

I. Introduction

The Leadership Training Institute, funded by USOE, HEA, Title IIB, provides selected training activities designed to meet library leadership training needs and problems as identified by library institute directors, faculty and key library and media personnel.

A problem area frequently reported is planning and evaluation. The initial draft of this handbook was compiled for use at three training sessions on evaluation conducted early in 1973 for Institute directors and staffs. The final product is based on the advice, criticism and input of these institute participants. It attempts to interpret some current evaluation theory, and translate it into a workable structure for practical application by training directors.

The danger in this is the ever-present one of over-simplification. The handbook may prove useful if it pulls together certain concepts that trainers and planners can use, but it must also point out that the techniques of planning and evaluation must not be applied in a vacuum that ignores rather than facilitates our concern with the creative activities of teaching and learning.

It is not important or even desirable that any one management system or evaluation model be used. It is important for the educator or director to look at the potential in each of a number of systems and test and adapt those components which not only seem useful for his own situation, and managerial style, but are also most effective in promoting maximum freedom for the learning process.

Some of the concepts presented have been selected because in practice they have provided a structure that lends itself to maximum participation of community, students, staff, and director in solving educational problems.

In assembling the hand book many ideas have also been adapted from other USOE Institutes, books documents, articles A complete list of sources will be found in the bibliography as well as additional publications reflecting a variety of viewpoints.

This approach to evaluation attempts to:

1. provide a brief review of a current approach to management as background for implementation of the evaluation process. *Management by objectives, or management by results, has been defined as a system requiring a clear identification of objectives, the establishment of a realistic program for their achievement, and an evaluation of performance in terms of measured results in attaining them.*
2. emphasize that training evaluation must be two way: that both students and faculty must provide the insights that lead to improved decision making;
3. emphasize internal on-going or process evaluation as distinct from the traditional concept that evaluation takes place only after the training has been completed.

II. The Training Director as Manager

In education, perhaps to a far greater degree than in any other field, the concept of participative management must be stressed. Interaction between teachers, students, and the subject matter is the heart of the educational process. This, however, is not likely to happen unless the training director views himself as the manager, or leader, and is able, with staff and students to conceptualize clearly the objectives of the program, and alter the system, when necessary, to achieve these objectives.

To do this, he must work *with* advisory groups, staff and students to draw up objectives which include not only the personal and professional goals and satisfactions of the teaching staff, but also the personal and professional goals and satisfactions of the students.

Are Librarians Managers?

In the past years, many librarians and library educators have projected, unintentionally perhaps, the attitude that since libraries are not threatened (as is industry) by closure if they fail to produce, the compulsion to be a good manager does not exist. There has also been a tendency by the profession to overemphasize the difficulties of quantitative measurement in education and provision of information service

This approach to librarianship is hardly valid today. However, we found in a small and highly unscientific survey based on informal conversations with at least 30 colleagues at professional meetings that many librarians who will agree that librarians must practice better management, also have difficulty relating the idea to their own job situation. Almost all librarians and/or educators give lip service to the idea, but three out of four go on to either qualify or dismiss the subject with variations on the following theme: (in order of popularity)

a. "But my situation is a little bit different I work in a small independent government library, and supervise only three people."
b. "Well, yes, but you can't go gung ho on any one system."
c. "Personally, I'm more the Simon Legree type."
d. "Try to practice good management and reward people for results in that bureaucratic jungle I work in!"

This handbook suggests that skill in working with staff, students, and advisory groups in formulating common goals and objectives offers the most promising approach not only to managing a training program, but also to evaluating it. Continuous evaluation, accountability, and measurement is a large slice of the management process.

The purpose of evaluation is to provide information for decision making. Few training directors would quarrel with the statement that there are four crucial areas of concern in designing and implementing training:

1. Exploration of needs and choice of policy goals, and statement of program objectives,
2. Selection of training activities to achieve these objectives;
3. On-going monitoring and modification of programs to achieve stated objectives, sometimes mid-stream modification of initial objectives;
4. Concluding activities and product evaluation for recycling decisions.

Objective Setting and Evaluation

Our theory, based on reading many program proposals submitted to the Office of Education for funding, in addition to working with prominent librarians in attendance at evaluation sessions, is that not many are trained to break down a broad abstract goal into a specific measurable objective for program planning. Lacking this basic background, they are often "turned off" at evaluation sessions in which seemingly complex evaluation models are presented, but no clear background provided to show that these models are tools to be used and adapted in meeting institutional objectives.

This is not intended to imply that the whole process of evaluation should relate to the attainment of program objectives. An evaluation which simply asks "Were the objectives met? If so, to what degree? is very sterile as it discourages mid stream modification and a full examination of all the factors which will be invaluable for future planning decisions.

However, it is still true that it will be very difficult, if not impossible, to either manage or evaluate any project without well formulated program objectives.

Current approaches to sound management being used, not only by industry, but by many social and educational organizations, place heavy emphasis on the manager's ability *to work with his staff* in translating broad, philosophical goals into measurable, attainable, understandable objectives. This approach,

the management by objectives or appraisal by results system, demands that administrators become results oriented; this means concentration on processes which produce results; elimination of efforts which do not.

Advantages of MBO

How does management by objectives achieve this, and also provide other advantages as a management system? Whether you supervise one person or 300, the following points about MBO are worth noting.

1. It offers an organized framework to encourage teamwork, renewed effort, because there is agreement between supervisor and subordinate (training director, staff and students) on a common objective. It is written down, and there is commitment by all (or both) to accomplish what must be done to achieve it. This however is *not* an acceptance of the director's objective by the group it is the group's objective and the time spent in sitting down to consider the problem and reach agreement on it is time-consuming, but the most important part of the process.

2. The administrator now has a basis to rate people on the basis of results, not on personality traits. You begin, as a management team to *identify those who achieve, not those who conform*. To reward, not those who fit into the organization, but those who make a positive or creative contribution. In conflict, we begin to talk about *what* is right instead of *who* is right. We eliminate the fuzzy thinking that allows us to get bogged down in *how we're going to do something* before we have decided *what* we want to accomplish.

3. In going through this process, we not only achieve better communication, a group consensus about the common goal, but also agreement about *areas of responsibility, span of control*. Everyone in the organization knows where his job fits into the whole picture. Often his conception of himself and the contribution he can make will expand considerably, as he helps to suggest ways to solve the problem. It allows the creative, ambitious, energetic staff member to get "a piece of the action" and is a fantastic morale builder. There is, however, a trap to this. Having raised expectations, having encouraged his participation in the decision making process, the administrator cannot drop the ball. At least some of the agreed-upon changes must happen, and happen soon. When certain objectives can't be met, the staff and students must not only have the feedback, but also a chance to participate in a reassessment and modification of objectives.

The other challenge for the director is to provide the conditions (resources, time, working conditions) under which the group will find it possible to meet the objectives. This is probably his hardest task, but if he and his staff have a mutual understanding of where they are going, and if they have selected together strategies "to get there", the director is less likely to resort to management by crisis, charisma, or so called "common sense."

For the training director and decision maker, a primary need is a systematic plan so that decisions are not based on impulse or intuition, but are rational and deliberate because they are based on information systematically gathered, and relate directly to accomplishing (or modifying) program objectives.

Our problem in doing this is that in running a project or training program, we tend to become so involved in the process, we become impatient with theory that seems to get in the way of getting the job done. It's easier to let an outside evaluator (see section VIII) tell us what we did wrong than to go through the somewhat tedious process of delineating objectives for each segment of the program, and then analyze what is actually happening, or listen and respond to the feedback; but, this is the only way we can really learn from the experience, and eliminate our mistakes as we go along and in the next go-around. In practice this process becomes almost automatic for both director and staff.

III. Evaluation . . . A Process

The usual way to evaluate is to proceed through a project or training program according to plan, and, when it is finished, determine whether or not it has been successful. Often, we are aware, in mid-stream that program modifications should be made, but we find no easy way to effect such changes through all stages of the project.

The social sciences have not yet discovered "the answer" in terms of a single scientific approach to achieving and measuring results, but there are many new and current tools (others in various stages of development) for project management and evaluation. This handbook does emphasize certain basic approaches to evaluation, thus it does have a "point of view," but the importance of adapting a concept that is appropriate to one's own situation cannot be overemphasized.

We have, therefore, in this section, taken some time and space to mention a few of the current educational evaluation systems. The idea is to provide a sketchy overview with citations to facilitate further investigations.

Current Systems

The development of PERT (Program Evaluation and Review Technique) and PPBS (Planning, Programming, Budgeting Systems) provided promising techniques to improve project management. PERT, developed by DuPont in the 1950's is a probability system which seeks to reach objectives in the shortest time possible with minimum cost. The PERT network is a graphic representation of the plan (see Fig. 1).

PPBS is a method of achieving cost effectiveness through budgeting by program rather than on a line item basis. It begins with the identification of objectives; it then groups the organization's activities into programs that can be related to each objective. PPBS focuses attention on the competition for resources within programs, thus forcing detailed analysis of alternatives, and careful selection of priorities.

In spite of wide adoption of PPBS by federal and state government agencies, there is criticism of PPBS by some educators who see it and other management systems as an arbitrary, strongly centralized system with an ultimate objective of cost reduction rather than cost benefits.[1]

It is also unfair to imply that management by objectives has been universally accepted by the educational or behavioral science community. A

creative and articulate spokesman for another point of view is Lawrence Halprin who states, "One of the gravest dangers that we experience is the danger of becoming goal-oriented. It is a tendency that crops up in every field of endeavor . . . It doesn't work! The results of this over-simplified approach, now coming into general vogue, are all around us in the chaos of our cities and the confusion of our polities . . ."[2]

One problem with adopting PPBS and similar systems such as OR (Operations Research)[3] as the total answer is that they are designed primarily to help a monolithic decision making structure plan and evaluate. The techniques are useful to any planner but educators and librarians should also examine more comprehensive evaluation models designed to provide information for decision making for a variety of groups and individuals with different value systems as are found in any community. *Teachers, boards, advisory groups, students, special interest groups, parents are the decision makers in the educational process.*

Alternatives

A number of evaluation systems or models to meet the needs of a pluralistic society are being tested and compete for use in the educational field. For example the Discrepancy Evaluation model tested by Malcolm Provus in the Pittsburgh school system suggests that performance must be compared against standards, and feedback given to decision makers about discrepancies. This feedback permits staff to change either the behavior or the standard. At each of five stages of the model (Design, Installation, Process, Product, Cost) this assessment is made so that there is on-going evaluation and a large degree of staff involvement.[4]

Stake

Like Halprin, Robert Stake, University of Illinois, negates the value of objectives in evaluation as a starting point for planning educational processes. He calls them "judgement data better treated by the rules that govern mass subjective responses than by the honors bestowed upon 'fundamental truth'."[5] Stake nevertheless calls for a continual rationale and definition of purpose of the instructional program and sees educational process as a continuous series of transactions between student teacher materials. This transactional data must be identified, and analysed for its contribution to the program, and improvements made as instruction continues.

Scriven

Michael Scriven's work has emphasized an important distinction between formative (process) and summative (product) evaluation. In formative evaluation the data is used to make judgements about what works about specific aspects of the on-going program. Summative evaluation is an assessment of the entire program, and thus may call for a completely different set of criteria for evaluation. If the program is then judged as part of the total educational program, different but also appropriate criteria is used.[6]

Metfessel and Michael have pointed out many of the outcomes intended and unintended that might be included in the evaluation of a program[7] and suggested methods of measuring them.

Tyler

An emphasis on continuous questioning of the educational program in relation to *student needs* is an overriding characteristic of the evaluative theory developed by Ralph Tyler. He deplores the practice of selecting students because they have the ability to meet program requirements, as contrasted with creative objective setting to fulfill an educational challenge. The model tends to focus on product evaluation.[8]

There are dozens of other educational researchers working in the field and the creative trainer manager should also give some attention to the work of the Phi Delta Kappa National Study Committee on Evaluation and several university research and development centers (i.e. University of California, Berkeley), some of them conducting research funded by the U.S. Office of Education. Eleven regional educational laboratories and eight Research and Development Centers have recently been transferred from the Office of Education to the newly created National Institute of Education. The National Institute assumes responsibility for basic and applied research; the regional laboratories; researcher training and experimental schools; and dissemination of research results.

CIPP

No planning-evaluation model has yet been designed specifically for evaluation of library programs. However, the CIPP model (Context, Input, Process and Product) developed by Daniel Stufflebeam at Ohio State University, intended for use in meeting problems of accountability and decision making in education, has recieved national exposure in the library profession through a year long USOE Institute for State Library Agency planners and subsequent follow-up training sessions in individual states, and at regional library meetings (SELA-SWLA, November, 1972). The CIPP model is not always clear as to methodology, and clearly was designed for use by an organization large or complex enough to be able to assign staff to carry out the evaluation as a major part of their function. Obviously this is not practical for most educational and library situations. However, the model does lend itself to simplification and adaptation for individual or staff use; and because it emphasizes on-going evaluation as well as obtaining relevant data for decision makers, it merits consideration.

This handbook utilizes the CIPP format for presentation of concepts, and most models are adaptations of CIPP for possible use by library training directors. However, as noted above, rapid advances in the design of evaluation models in a number of fields necessitates a very open approach.

Desmond Cook has suggested that there may be enough theoretical background available, and what we need are the skills to apply what is known rather than the development of new models. He makes a strong case for further emphasis on the provision of information, adequate and useful data for decision making.[9]

The CIPP model defines evaluation as the process of delineating, obtaining and producing useful information for judging decision alternatives. The process includes 3 basic steps: the delineating of questions to be answered and information to be obtained, and obtaining of relevant information, and

the providing of information to decision makers for their use to improve on-going programs.

Four kinds of decisions are specified by the CIPP model. *Planning* decision determine objectives. *Structuring* decisions project procedural decisions for achieving objectives. Decisions in executing chosen designs are *implementing* decisions, and *recycling* decisions determine whether to continue, terminate, or modify a project.

> These decision types are served by the following types of evaluation. Context evaluation provides information about needs, problems, and opportunities in order to identify objectives. Input evaluation provides information about the strengths and weaknesses of alternative strategies for achieving given objectives. Process evaluation provides information about the strengths and weaknesses of a strategy during implementation, so that either the strategy or its implementation might be strengthened. Product evaluation provides information for determining whether objectives are being achieved and whether the procedure employed to achieve them should be continued, modified, or terminated. Basically, the CIPP Model answers four questions: What objectives should be accomplished? What procedures should be followed? Are the procedures working properly? Are the objectives being achieved?[10]

An adaptation of the CIPP model for library training appears in Figure 1. Subsequent sections are intended to clarify the model.

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[1] Leo Ruth, "Behavioral Objectives and the Danger of System Think" *Research Resume: Proceedings of the 24th Annual State Conference on Educational Research*. No. 48, Nov. 1972, 83-84.

[2] Lawrence Halprin, *The RSVP Cycles: Creative Processes in the Human Environment*. (New York: Braziller, c1969) p. 4.

[3] Operations Research is a system that uses mathematical techniques to provide management with a logical base for decision making.

[4] Malcolm Provus, *Discrepancy Evaluation for Educational Program Improvement* (Berkeley: McCutchan, c1971).

[5] Robert Stake, "Objectives, Priorities and Other Judgement Data," *Review of Educational Research*, Vol. 10, April 1970, p. 183.

[6] Michael Scriven, *the Methodology of Evaluation*, AERA Monograph Series on Curriculum Evaluation, No. 1 (Chicago: Rand McNally, 1967).

[7] Newton Metfessel and William Michael, "A Paradigm Involving Multiple Criterion Measures for the Evaluation of the Effectiveness of School Programs," *Educational and Psychological Measurement* 27:931-43, 1967.

[8] Provus, op cit. p. 150.

[9] Desmond Cook, "Management Control Theory as the Context for Educational Evaluation," *Journal of Research and Development in Education*, Vol. 3, No. 4, Summer 1970, p. 14.

[10] Daniel Stufflebeam, "The Relevance of the CIPP Evaluation Model for Educational Accountability," *Planning and Evaluation for Statewide Library Development: New Directions*, Ohio State University, 1972, p. 21-33.

IV. CONTEXT EVALUATION

1. Statement of the Problem

The analysis of the problem should include a description of the environment in which change is to occur, an outline of *what is* and what should be. The need is the discrepancy between the current situation and the desired situation. At this stage the decision makers should set forth what barriers exist to block the desired change, and opportunities that exist in creating the change should be identified. The group going through this process (director, faculty, student representatives, etc.) will utilize all appropriate data: community, local, state and national need projections; reports; demographic and economic surveys; citizen advisory group inputs, statements of professional, national and local priorities, employment needs as expressed by all types of libraries; student opinion, academic vocational records; resources, available and potential. There are also several technical forecasting techniques that decision makers can use in assessing needs, and forecasting future events. For example, the Delphi technique was developed to assure that forecasts and predictions of the future reflect rational judgement, not just the influence of certain opinion makers. Delphi is described in an article by DeLayne Hudspeth in Section X.

Having explored the problem it is sometimes helpful for the decision makers to illustrate the situation in a very basic way (Figure 2).

2. Setting Objectives

From the contextual information gathered should flow the statement of training objectives. These should represent states or conditions which are logical solutions to the well-defined problem and should contribute to but not be confused with the overall goal of the project.

Goals

A goal may be described as timeless, or long range (the group may never reach agreement on when it is achieved) *and broad in scope*. This does not however mean that time should not be spent by the group in reaching agreement on the overall or long range goal. *The overall goal will provide an umbrella statement with a policy focus that gives direction to the entire program*. For example, a training goal "to produce better educated librarians" gives very little direction for implementation of a project, but a goal stated as: "Provision of training for minority group persons in the library

ADAPTATION OF CIPP MODEL FOR LIBRARY TRAINING

	CONTEXT	INPUT	PROCESS	PRODUCT
	What's out there?	What to Do about It?	Are We Doing It?	Did We Do It?
1 Delineate	Gathering data to provide complete background of problem.	All possible ways to meet objectives, decision making group brainstorms.	Techniques to be used— for establishing milestones or checkpoints, time-cost performance.	Data to show results for each objective.
2 Obtain	Faculty, advisory group, student representatives review all facts— isolate needs, problems, opportunities, formulate criteria for decision making.	Facts about each alternative (cost, feasibility). Apply criteria formulated in context.	After individual and group input, who acts to effect modification?	A report of the project— description findings— summative conclusions.
3 Provide	Set forth overall training goal specific, measurable objectives. Rank in order of importance (document).	Group chooses best alternatives. Formulate (in writing) detailed plan of action: who does what? Time frame pattern for decision making.	Provision for feedback loops. Flexibility for making changes and results.	Transferability to other programs.

Figure 1: Adapted from *Planning and Evaluation for Statewide Development*. Ohio State University Evaluation Center, 1972, p. 27.

profession" is general and timeless but provides a focus for planning and programming.

Objective

An objective, on the other hand, will take the goal and translate it into a statement that *shows specific outcome expectations*. An objective must meet three criteria: it must be measurable, understandable, attainable (sometimes with difficulty) within a given time frame. Eg. "Twenty-five minority group students will be trained at the Masters level in urban information centers by June, 1974."

Often the chief problem is in the way the objective is stated, not in the inherent idea. Usually objectives which begin with "to provide," "to assess" are troublesome for the administrator, evaluator, instructor, student or advisory group to measure because they imply a continuing process, and therefore the final product is sometimes obscure.

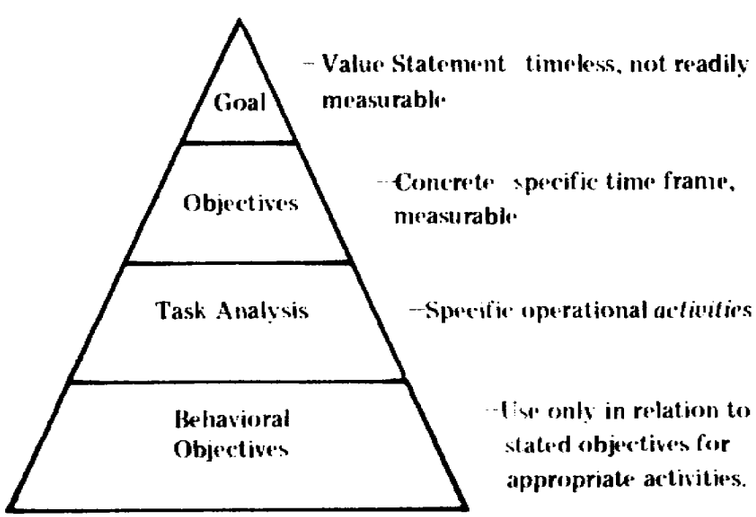
Behavioral objectives may be defined as statements which describe precisely what students will be able to do after completing a course of instruction. Again the focus is on outputs or results.

A problem common to training programs is that students frequently are frustrated because they do not understand what is expected of them. Several studies have shown that students do better if they are provided with objectives; how much better would they do if they *participated* in the objective setting process?

Behavioral Objectives

Behavioral objectives are the lowest step on the ladder in the hierarchy of objectives. Certain operational objectives are not related to the course of instruction, but in planning a training program each type of objective is an equally important tool in reaching the overall goal.

The relationship of behavioral objectives to the overall structure may be expressed as follows:



Examples of objectives from funded proposals follow. Column A contains the original objective (or Goal); Column B the objective stated in more measurable terms; Column C the objective (or a small portion of it) stated in behavioral terms.

A	B	C
Provide a planning phase for the development of a curriculum for the training of media librarians to serve public libraries in an inner city environment.	Model curriculum developed for training of media librarians to meet needs of public libraries in an inner city environment to be completed by June 30, 1972.	MLS candidates will isolate political structure of an inner city community or barrio, and design a plan for involvement of the community and power structure in providing information services.
To create an awareness of current, critical issues in cable communications.	Institute participants will be able to interpret current critical issues in cable communications for other members of the profession, and the public for improved decision making.	By June, 90% of Institute participants will conduct workshops in their own states interpreting the concepts presented here.
To experiment with techniques of motivating the urban poor to take advantage of the services of social agencies and public libraries	Five new techniques designed to motivate the urban poor to take advantage of the services of social agencies and libraries will be tested and compared by Institute participants during the academic year 1973-1974.	Each student during field work assignment based on community needs assessment, will plan and suggest a new concept in provision of information services. The student will be able to provide a written evaluation of the plan (accepted or rejected).

BASIC PLANNING

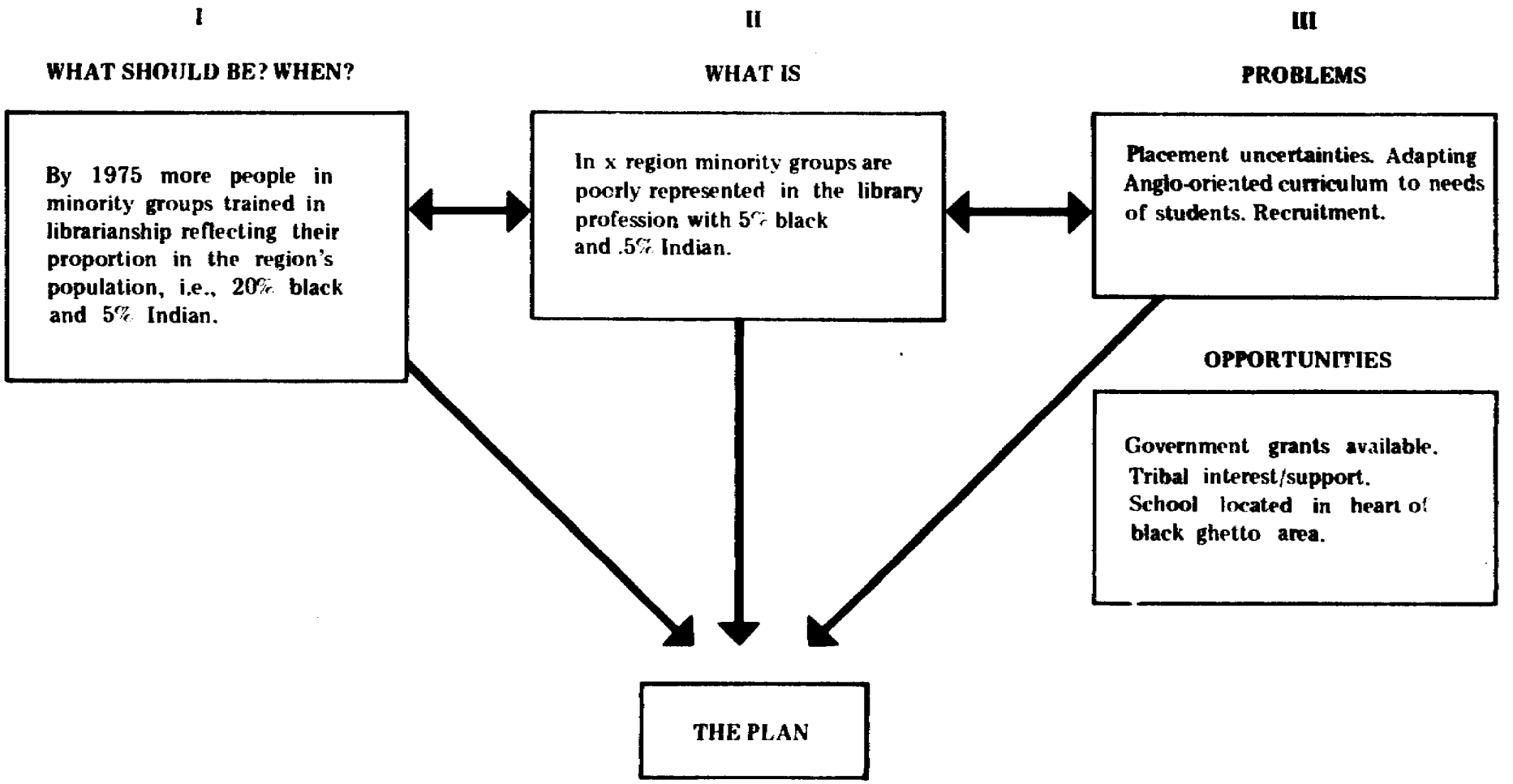


Figure 2

The following chart of a hypothetical hierarchy of objectives will serve to illustrate how each objective can be broken down into manageable operational levels. Such a chart also helps insure that no aspect of reaching the ultimate goal is overlooked (Figure 3).

If it is decided that the training program should have a broad goal for purposes of flexibility and change, then it is essential for evaluation that the goal be broken down into clearly stated operational objectives:

Example:

Goal: Provide para-professional library training for minority group personnel

Objectives: 15 Indian students with AA degree placed in para-professional jobs within three months of program termination.

Ten Indian students trained and employed in school media centers.

Twenty minority students accepted into regular on-going library training programs of the college, based on success/failure factors of this training program, by 1975.

Behavioral Objectives

Students will be able to name and generally describe the use of 40 reference tools commonly found in school media centers.

Students will be able to articulate the role and function of the media center in relation to the total school program.

Students will be able to utilize the Abridged Dewey in accomplishing basic cataloging procedures.

Students will complete a bibliography of all readily available media relating to his particular Indian heritage for use on the job, and for exchange with other students.

Criteria for Decision Making

In assessing needs, setting objectives, and evaluating results, the decision making group should agree on and set forth criteria so that judgements will be based upon a generally acceptable standard, rule or test. This helps avoid subjective decision making.

The problem of establishing criteria is that usually several sets on several levels of the training program are needed in order to measure various aspects of the program. Therefore, any statement of criteria should indicate what the criteria will be used for. Eg. criteria for assessing curriculum effectiveness. Gary Wegenke and Harriette Robbins have delineated four major categories of criteria:[11]

1. *Goal relatedness*—The importance of judging ideas as activities in relation to stated goals and objectives. How does the activity fit into overall project goals, i.e. how does this training program meet national priorities for library training? The authors also suggest four criterion measures to use in evaluating objectives. Do they clearly state: what is to be done? by when? for whom? and why?
2. *Feasibility*—This refers to the potential the activity has for being successfully completed. Usually factors such as financial resources, personnel, time, physical facilities, are listed as criterion measures to be considered. Eg., a program to combine practical experience with course work may be highly goal related, but impractical because of time and financial constraints on participants, lack of suitable opportunities in local libraries, etc.
3. *Efficiency*—Here the question is asked: will this training yield a higher return in terms of changes it is proposed to bring about? This should be measured in terms of dollar costs and staff and participant effort spent to achieve the result. This category overlaps with others but focuses on the relationship between cost factors and performance factors. Eg., the work study program is tested against its relatively high cost vs. improved on-the-job performance it is expected to achieve.
4. *Effectiveness*—refers to the impact of the training program—the contribution it makes toward meeting overall objectives; the production of the desire effect or result. Performance indicators in this category should be well defined. These might include:
   a. number of students completing program;
   b. on-the-job performance ratings at employing institutions;
   c. adaptation of similar training program or components into regular school curriculum.

[11] Gary L. Wegenke and Harriette L. Robbins, "The Problem of Criteria" in *Planning and Evaluation for Statewide Library Development*, op cit. pp. 58-68.

V. SELECTING ALTERNATIVES (INPUT)

Probably the single most neglected area of program planning is the consideration of alternatives. Th· potential for some really creative approaches to meeting objectives is most often lost in adoptingtried methods that are not always the most effective. One of the major weaknesses in planning and decision making is to yield to the temptation to come up with

Hierarchy of Objectives

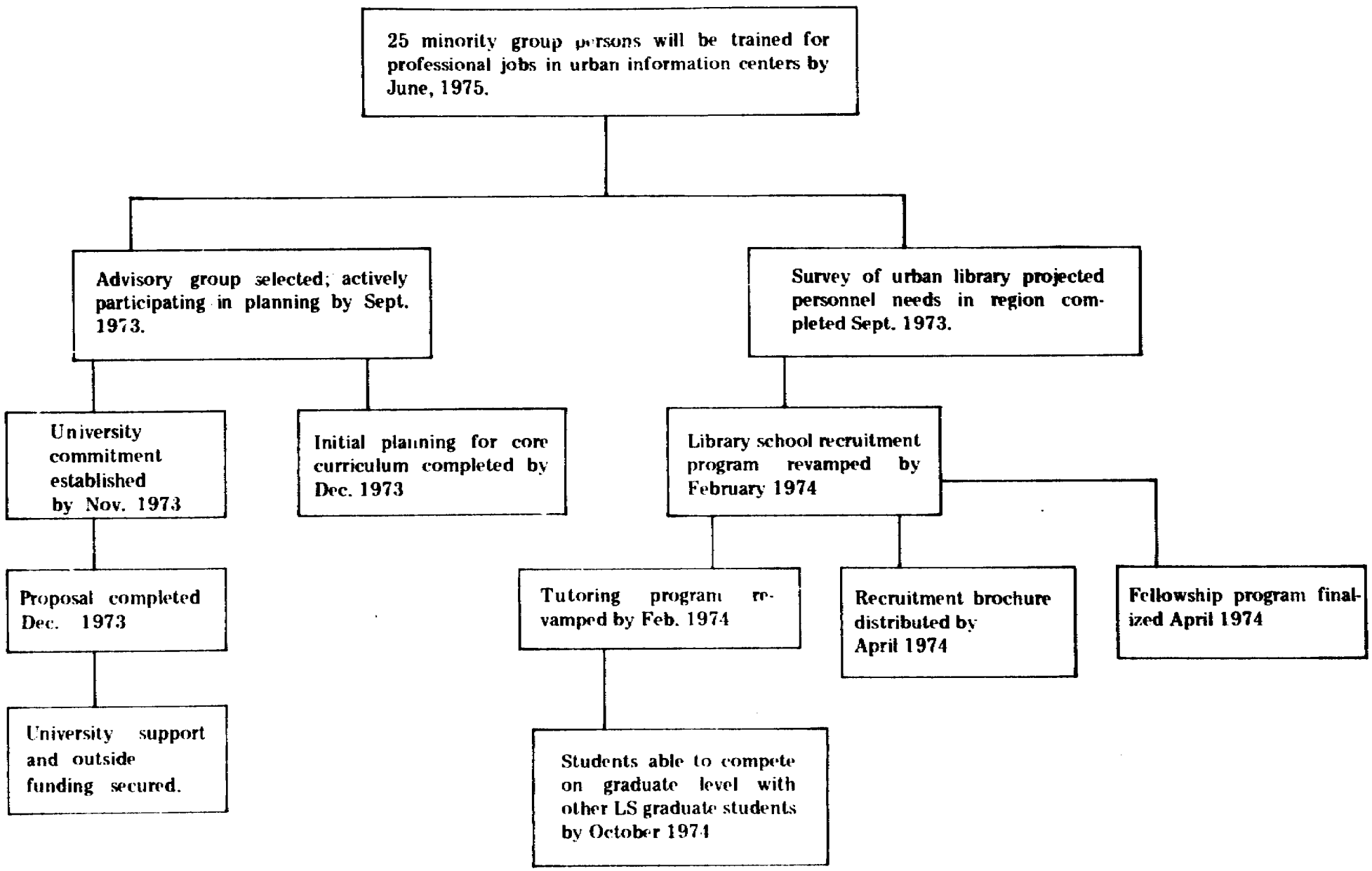


Figure 3

the right solution at once. *The obvious strategy is rarely the one that will give us the best answer to the needs and opportunities of the situation.*

Having reached agreement on objectives, every possible implementation strategy should be laid out by the decision making group in a free-wheeling brain storming session, and the pros and cons of each recorded. All alternatives should be ranked according to feasibility, experimental value, cost effectiveness, available resources, etc. (See criteria above.)

Thus Input evaluation will provide a rationale and record of why certain alternatives for program implementation were chosen. If later on, certain operational objectives are not being met, this information will be valuable in the process of choosing another implementation strategy.

Choosing Strategies: Sample

Objective: Twenty minority students accepted into regular library training programs by 1975.

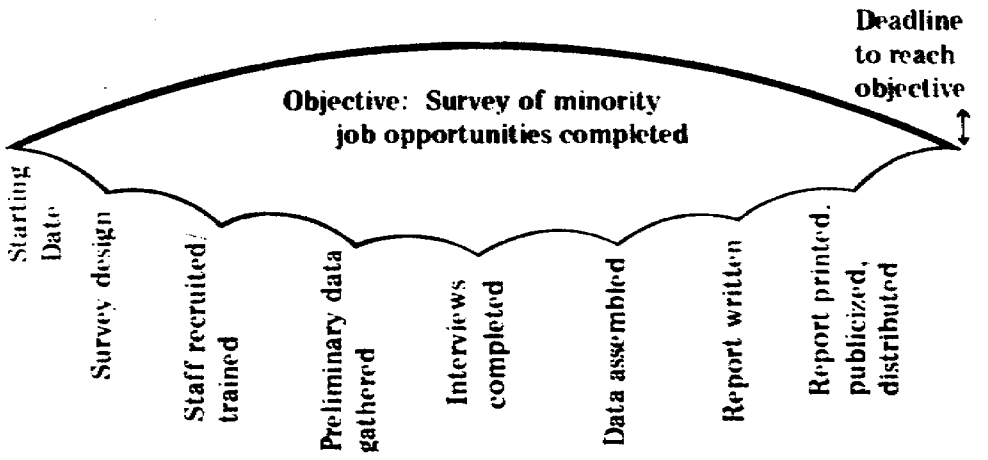
Suggested alternative strategies:

1. Newsletter produced by Institute students to acquaint student/faculty with program;
2. Meetings with Library School and University administration;
3. Tutoring program for potential applicants;
4. Financial aid, fellowships for minority group members;
5. New admissions policy;
6. Survey to show job market potential and employer commitment;
7. Invitations to "regular" faculty to guest lecture;
8. Pressure from minority group associations on campus.

In considering all alternatives to meet the above objective, it is vital that the group share fully its experience with the Library School administration—both the success and failure factors of the Institute program will be useful. For example: if it is found that a two year program combining field experience and academic study in fact produces more effective beginning librarians (as evaluated by library employers) then these facts should be made available. If, on the other hand, the Institute tutoring program fails to achieve the expected results and it is found for example that multi-lingual students cannot in the short span of the tutoring program achieve the oral/written competences needed, then this problem must be explored and solutions sought by the Institute staff and the library school faculty together.

The Plan

When alternative methods are chosen, we then have to make certain that these decision are translated into action. To do this we need an action plan that spells out who does what and when, and we must be certain that each person understands his role. The plan does not have to be elaborate, and its form should be flexible so that it can be quickly modified in mid-stream. There are some simple planning devices that are useful in establishing whether or not it will be possible to complete all activities in time to reach the deadline. An example is the diagram below:



Each point represents an event that must occur to reach objective. Such a diagram forces the planner to put down exactly what must happen, and acts as a reality check so that he does not find himself attempting the impossible.

Another device is the PERT chart which can be fairly simple but is probably more useful for fairly complex projects. In PERT, events and activities are sequenced on a network so that you have not only a critical path (activities which must be performed to achieve the objective) but also sub-critical paths showing inter-dependencies but non-essential program elements. The critical path is the one that will consume the most time in reaching the objective.

A PERT network is composed of events and activities. Events represent the start of completion of an activity and do not consume time, personnel, or resources. An event is represented by a circle. Activities consist of work processes which lead from one activity to another, and are represented by arrows.

In PERT, three time estimates are made for the expected duration of an activity—the pessimistic time, most likely time, and the optimistic time. These estimates should be made by the person responsible for the event, not the program manager.

It is suggested that PERT is most useful in planning a new project whose completion will take at least two months, and in which the network will consist of at least 10 distinct events.

A sample PERT Chart may be seen in Figure 4.

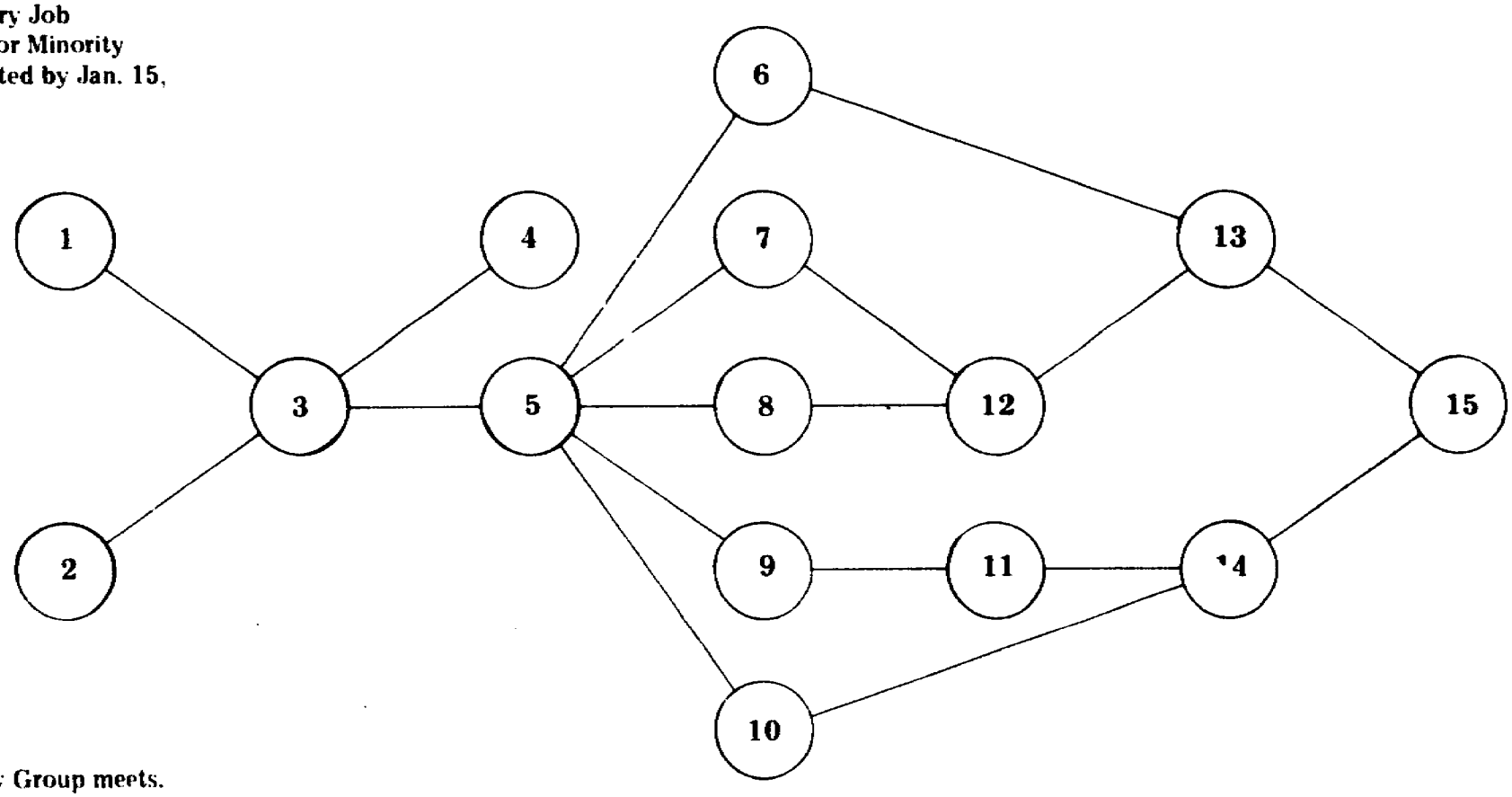
The remainder of the handbook will deal with two major aspects of evaluation: Process or formative which is of primary concern, and product or summative which is only useful when properly recorded and utilized for future or recycling decision.

SAMPLE PERT NETWORK

July 1, 1973 | July 15 | Aug. 15 | Oct. 15 | Nov. 15 | Jan 15, 1974

Objective

Survey of Library Job Opportunities for Minority Groups Completed by Jan. 15, 1974.



1. Advisory Group meets.
2. Survey instruments prepared.
3. Survey design completed.
4. Advisory group approves, modifies design.
5. Parttime help recruited, trained.
6. Preliminary data gathered.
7. Local/regional interviews completed.
8. Advisory group meets.
9. Prospective employer commitments secured.
10. National professional opinion secured.
11. Distribution plan for report formulated.
12. Data assembled into final draft.
13. Publicity on survey findings prepared released.
14. Draft report mailed to advisory group, key professionals, library directors, national associations.
15. Final report, written, distributed.

Figure 4

VI. IMPLEMENTATION (PROCESS)

Process or formative evaluation provides information about a strategy while it is being implemented so that decisions can be made on the spot for modification or another strategy can be substituted. Some pertinent questions might be: Are we actually using the tactics we planned? Are the procedures working? Will this approach enable us to reach our objectives?

1. Conflict Management

At this point, it should be noted that the emphasis on group planning/decision making is not intended to imply that such procedures can or should eliminate conflict. There must always be dissent in a healthy creative organization, and it is far less to be feared than conformity. It is possible to minimize conflict through creating respect for disagreement among the group and eliminating of an autocratic approach but a successful manager will recognize his limitations and in inevitable moments of extreme conflict will "create baffles and buffers to buy time, to absorb heat, to promote collective wisdom, to insure a maximum sense of legitimacy for decisions finally agreed upon."[1,2]

But how do we get decisions made? In our zeal to examine all the alternatives in a situation, to allow for every point of view, to avoid the mistake of reaching agreement on a solution when we have not succeeded in isolating the problem, there is a huge temptation to simply postpone the decision until the next meeting.

At times, as Bailey suggests, this is the best way to handle the problem, but clearly we must also find ways to make decisions as we go along.

Often it is necessary to set an arbitrary time limit on decisions that should be made immediately. An agenda for a faculty meeting might state: "By the conclusion of the March 15 meeting, an alternative method of choosing agencies for field work will be selected." The problem here will be to have sufficient data available for the group, so that it will have a rational basis for decision making.

2. Establishing Milestones

Working out a simple system to enable us to modify the internal or on-going process seems to be most difficult for training directors, library administrators, and project managers, as it is for industry.

The Gantt chart was developed around 1900, and is a series of bars plotted against a calendar scale; each bar represents the beginning, duration and end in time of some segment of the total job to be done, and together the bars make up a schedule for the whole program.

The Gantt chart is not an effective management tool in that it does not show program function interdependence, and is inflexible. One attempt to improve the Gantt Chart is the Milestone system, a key step in the development of PERT. Milestones are key events or points in time which can be identified when reached as the program progresses. It provides a sequential list of the tasks to be accomplished. The milestone chart is not as flexible as PERT but it does promote increased awareness of the interdependencies between tasks.

The simple Milestone Chart in Figure 5 is intended to illustrate time sequences for evaluation milestones, and what types of evaluation techniques will be used.

The Appendix is made up of sample evaluation forms including student rating forms on instructors, course work, rating forms for supervisors, a sample problem solving session, report form, etc. These are not necessarily presented as exemplary, but have been developed by Institute staffs for use in their training programs, or are currently in use at library schools.

The Appendix also includes a description of a project process feedback system that has been tested and found workable by Dr. Ken Eye at the Ohio State University Evaluation Center. It is designed to be operated quickly and cheaply for small projects as well as large.

A planning session for project on-going evaluation should be held before formal training sessions start so that there is clear agreement among faculty as to how this will be carried out, degree of student involvement, etc. Ideally, students should participate in design of any evaluation instruments to be used.

At faculty and faculty-student meetings the variety of topics to be explored are myriad but certain areas should be examined on a regular basis. These include:

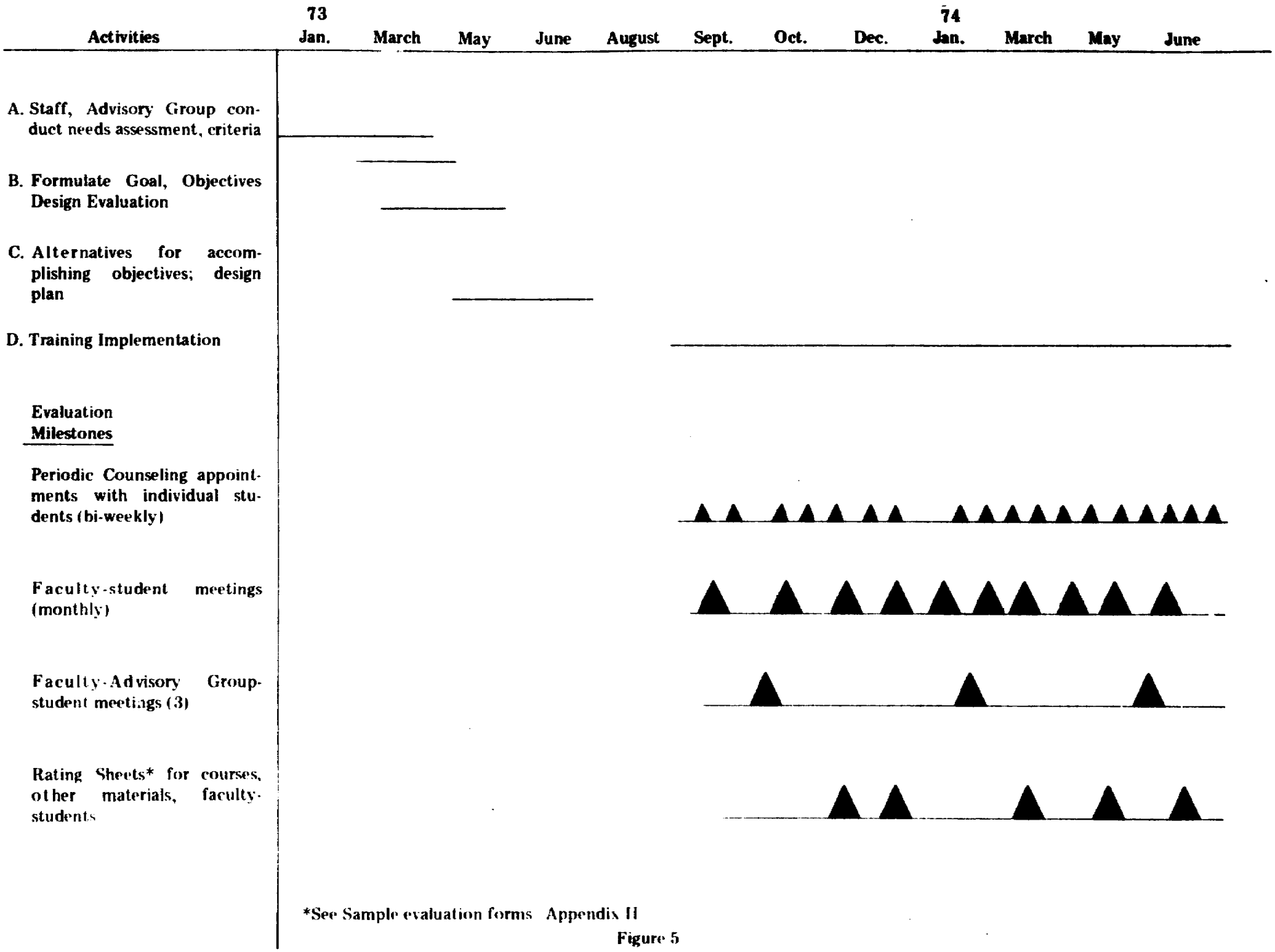
a. Suitability of training to student's needs;
b. Relevance of type of training to the problem to be solved (usually each course should have specific behavioral objectives);
c. Variety and appropriateness of training methods;
d. Attitude of trainees toward and specific interest in courses; (frequently student objectives are *not* the same as the faculty's.

These meetings should allow them to discuss their feelings openly—and will result in frequent program modification if communication channels are open.

There are always crisis situations of various sorts calling for an immediate decision. These decisions are sometimes made formally but more often informally, always repetitively, with conscious review, checks and balances. *The only added feature of process evaluation is that it formalizes and records the process, to make it more deliberate, rational, thereby enabling replication of effective procedures and modification of ineffective ones.* Things may very well go other than anticipated. This, by the way, does not connote a lack of success. In any case, the decision making group should try to analyze not only *what* is different, but also *why*. Thus we can document what happened and use it later in other programs.

Where discrepancies or exceptions between what is planned and what is actually occurring are noted, analyze why and adjust the program accordingly. Any format which provides the information needed, when needed, and in an understandable format for your program to facilitate

Milestone Chart for Training Program to be Completed, June, 1974



*See Sample evaluation forms Appendix H

Figure 5

Bi-Monthly Record of Program Modifications

September 1 — November 1, 1974

Objective	Progress Achieved	Exceptions to Progress Achieved	Program Modification Agreed Upon (or change in objective)
		Analysis (why?) Alternative solutions 1. 2. 3. 4.	

Figure 6

decision making, is adequate (see Figure 6 and Ken Eye's article in the Appendix).

ADAPTATION OF CIPP—MODEL FOR ON—GOING EVALUATION, ACTIVITIES IN LIBRARIES

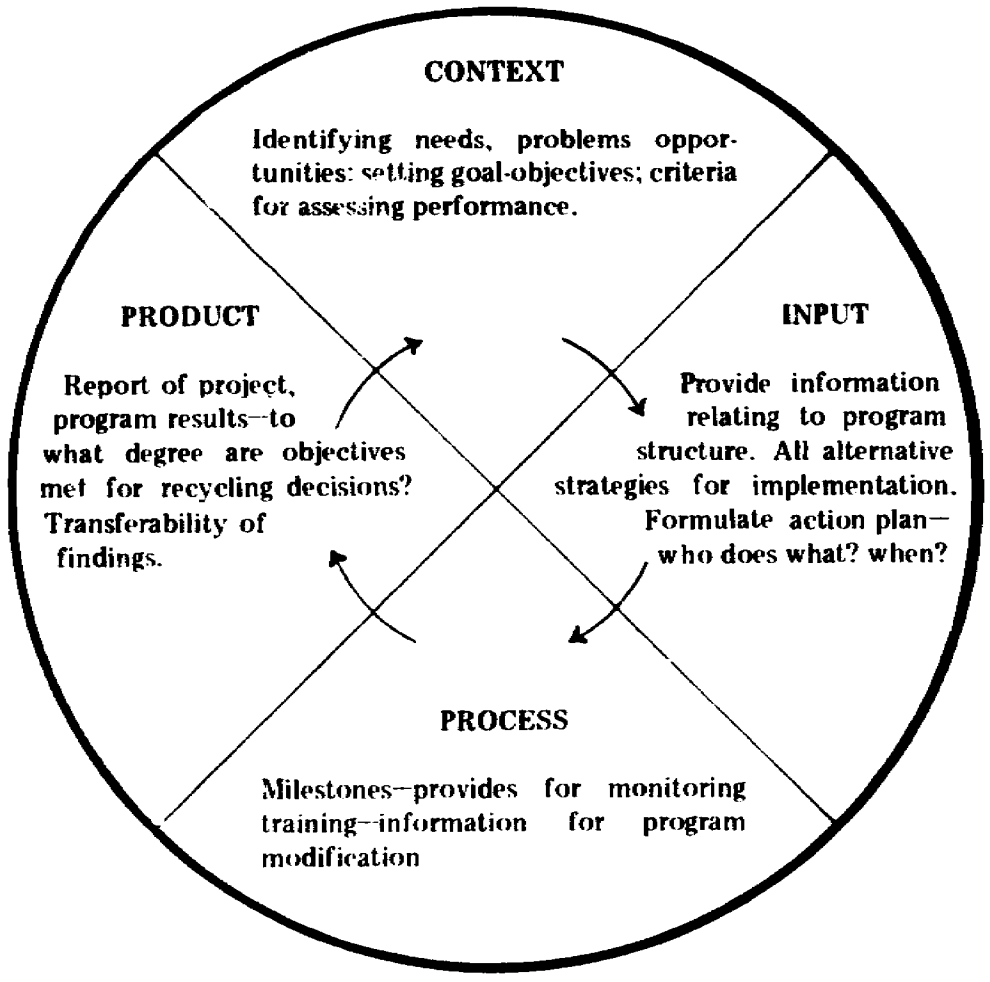


Figure 7

[12]Stephen K. Bailey, "Conflict Management. The Lessons of Political Theory" in *Planning and Evaluation for Statewide Library Development* op cit. p. 22.

VII. EXTERNAL EVALUATION

To what degree have training objectives and project goals been achieved? Product evaluation provides information for determining whether the entire project should be continued, modified or terminated.

Sometimes called summative evaluation, this aspect of the evaluative process is also concerned with impact. Here we are seeking answers to the question, "If the project is successful in meeting its stated objectives (or most of them) what difference will it make in the 'real' world—library, media center, traditional library school curriculum, etc.?" Has it reduced the need—the gap between *what is* and *what should be*? If so, to what extent?

Criteria previously selected (as part of context) are applied to the project goal and training objectives. Among groups from which such data should be collected are:

Participants (morale, interest in profession, self-confidence, etc.)
Faculty
Project personnel
Field supervisors (staff)
Parents/community
Consultants
Potential or actual employers of participants (on-job suitability of training)

Among the techniques which lend themselves to data collection for summative evaluation are:

Standardized tests	Rating scales
Ad hoc tests	Attitude scales
Questionnaires	Case studies
Interviews	Audio tape or visual (video tape, films) records
Performance ratings	
Observation schedules	Analysis of costs

In summary the CIPP model answers four basic questions:

1. What objective should be accomplished (and why)?
2. What procedure should be followed?
3. Are the procedures working properly?
4. Have the objectives been achieved?

Each of the four major components of the CIPP model represents a continuous process of data gathering, reaffirming or modifying objectives, considering alternatives, and so on. To illustrate the continuous recycling process, the following adaptation of CIPP is suggested for use in training staff (Figure 7).

VIII. External Evaluation

As noted in the introduction, our approach in this handbook has been on the problems of internal evaluation. However both internal and external evaluation are vital to any training program.

> It would be foolish to ignore that there has always been a certain amount of tension between the areas of action and research. Brooks describes a situation in which "The action-oriented professional has regularly lambasted the ivory tower, whose inhabitants supposedly spend all their time gathering data aimed not at solving concrete human problems, but at building bigger and better theories to be discussed at stuffy conferences and debated in unreadable journals. Such persons are often reported, only half-jokingly, to be incapable of making the most innocuous of judgements without a supporting body of empirical data; and such bodies are frequently subject to more than one interpretation, the data itself immobilizes the researcher and makes him unwilling to formulate policy implications . . .
>
> The researcher, for his part, is often heard belittling the action-oriented practitioner for his failure to conceptualize clearly; for his inability to think in terms of systems; for his tendency to act on the basis of subjective whims or impressions, ignoring existing empirical data which might suggest altogether different actions; for his failure to realize that the action which he takes in the future could be made more rational and effective if only he would engage in (or support) a little follow-up research on the actions he is taking today; and for his apparent fear of evaluation on the grounds that it might call his own actions into question."[13]

Brooks however goes on to indicate that this tension is easing and there is growing dialogue between the two areas "as researchers come to recognize their responsibilities in the areas of public policy and social action and as action-oriented practitioners become increasing aware that the findings of research can be put to good use in devising more effective programs."

The outside evaluator, evaluation team or consultant often brings new ideas, a fresh approach to a program. He is often hired for his superior ability to diagnose and identify problems and for his independent objective opinion as an outsider. He may also be an effective mediator where there is internal conflict.

Since, however, the inside evaluators (training director-staff-students) have the advantage of a detailed knowledge of their program, its resources and restraints, they have a distinct obligation to involve and inform the outside evaluator at each step of the operation beginning with initial planning. If this is not possible the staff should at least specify and reach agreement with the evaluator on the criteria by which they wish to be evaluated, so that useful information will be provided.

System Model vs. Goal Attainment Model

In this section we would like to make a case for outside evaluation which does not simply assess the degree of success a program has in meeting objectives, sometimes called the "goal attainment" model, and argue for the "system model" which attempts to assess the degree to which an organization realizes its goal under a given set of conditions.[14]

For example an objective like "Each student will be able to isolate the political structure of an inner city community and design a plan for involvement of the community and power structure in providing information services" can be evaluated quite simply in terms of: Did each student design a plan, showing steps to take in obtaining political and community support? If only 4 of 20 students did this under the goal attainment model, the evaluator might well determine that the course failed to meet the objective. But under a system model the outside evaluator might *with* instructor/students formulate several hypotheses or approaches as to how the power structure might be approached and techniques to use in designing a plan. If certain of the approaches fail, others are successful, the evaluator will have some useful data on which to base his evaluation, and the course instructor will have useful information on which to base curriculum and field work modification.

As the above implies the training director should seek an outside evaluator or consultant with the ability to train staff in evaluative techniques and skills to help them develop their own expertise in internal planning/evaluation.

Consider Pros and Cons

When the outside evaluator is brought in only at the conclusion of a program, the staff should make certain that he takes unintended consequences, both positive and negative, into consideration. A professional evaluation is more than just an assessment of what happened. We are, in short, suggesting that training directors demand more of professional evaluators or consultants. It is obvious that to do this, training directors must themselves develop more expertise in the area of evaluation. The usefulness of the outside evaluator may be largely determined by the quantity and quality of data provided by the program staff.

An effectively managed training program will not rely on the evaluation team to provide solutions to problems; it will, however, expect the team to "ask the right questions," and to strengthen internal capabilities for improving evaluation methodology.

IX. Heuristics

During and at the conclusion of any training project, the director and his staff face two major questions "what have we accomplished?" and "what have we learned?" The answer to the first is determined by an examination of the data; the answer to the second, by reflection upon one's experiences. Contributions to our knowledge base can result both from systematic inquiry *and* heuristic observation.

Heuristics are what has been learned by successive discovery action

research to guide future action. Heuristics are the mark of experience, not conflicting with formal preparation in theory and methodology, but somehow apart from it. Heuristic reasoning is plausible, yet lacking in rigorous proof. Often intuitively felt, heuristics are sometimes articulated and passed in oral tradition, as rules of thumb from one group to another.

Directors of training projects in tackling new problems, developing new curriculum, or developing new models are learning, through the crucible of experience, informal guideline principles. These are put to the test daily. We are suggesting that it is time this hard-won knowledge be acknowledged as "respectable" so that others can share and benefit from it. If each Director began to record this kind of knowledge, it could then be communicated to other professional colleagues concerned with similar problems. Ultimately, through this mutual sharing of tentative principles, a set of heuristics may be developed to serve as guides for all those involved in improving library services, media services, and learning systems.

Alice Rivlin, in assessing the success of evaluation in governmentally funded social action programs, points out that considerable progress has been made in identifying problems and in assessing impact on target groups, but very little progress has been made in comparing more effective programs with less effective programs. Kermit Gordon in the foreward to Rivlin's book states, "We are not likely to discover more effective ways until we conduct systematic experiments with different ways of delivering social services, and analyze the results."[15]

Systematic analysis and recording of results in a final report will not change the imperfect state of the art of evaluation in library training and programming, but it will provide a body of data for use by other training directors planners, so that success factors can be utilized in other training efforts, and tested as to viability in a different environment. We may thus avoid testing the same theories over and over again, with each project hailed as an innovative new technique.

Of probably greater long range significance is that the data be used to effect change in library education. The success of the federally funded library training program rests largely on the degree of impact it could have on library education and the library profession in general.

[13]Michael P. Brooks, "The Community Program and Applied Research" in *Readings in Evaluation Research.* (Sage, New York, c1971), p. 60-61.

[14]Herbert C. Schulberg and Frank Baker, "Program Evaluation Models and the Implementation of Research Findings", *Ibid*, p. 77.

[15]Alice M. Rivlin, *Systematic Thinking for Social Action* (Washington: Brookings Institution, 1971), p. viii.

X. Practical Applications

The preceding section asks library trainers to share their knowledge so that others may benefit. In this section and in the Appendix we are attempting to follow this advice by including three articles that are intended to be specific and thus helpful to persons who are in the process of adapting planning and evaluation theory to their particular situation.

All three authors have worked with librarians in a variety of training situations to improve long range planning and evaluation techniques in libraries. Dr. Hudspeth, Director of Educational Development, College of Pharmacy at Ohio State, worked with state agency staffs in an extended Title IIb Institute on statewide library planning as did Dr. Eye and Dr. Walker. Ken Eye was a major presenter and consultant for two of the Leadership Training Institute workshop sessions in 1972-73.

Delphi Forecasting for Long Range Library Planning

DeLayne R. Hudspeth

Long range library planning capability must increasingly be developed to enable librarians to identify the challenges which lie ahead, to develop a modern philosophical base upon which to justify operation and to prepare the profession for leadership in an age of rapid change.

The Delphi technique is a methodology which systematically uses intuition to plan for the future. It is a process for eliciting and refining the opinions of individuals derived from a series of "events" about plausible activities or occurrences in the future.

Originally, Delphi was used as a *technological* forecasting method to try to determine when and under what conditions certain kinds of technology would become viable. More recently, the Delphi technique has been used for *social* forecasting. Long range planning of this sort typically is less precise and involves "softer" variables than do intuitive judgments concerning technology and science. For long range library planning the Delphi is particularly appropriate when it is used in such a way that a variety of public segments can be tapped for their view of the future and the consensus, or lack thereof, with respect to their values and desire for library service.

Especially, as library resources grow tighter, the problems of growth must be considered in terms of comprehensive and long range considerations of library goals. Further, as libraries have moved into receiving federal funds and dollars from a variety of sources, they are being held increasingly accountable for the processes they use and the products they proclaim.

Advantages of the Methodology

The Delphi forecasting technique is an iterative questionnaire designed to measure consensus with respect to plausible events of the future. There are

several reasons why the Delphi technique is useful for library planning. Delphi allows library planners the luxury of some ambiguity while, at the same time, providing data about the degree of consensus with respect to library options. The nature of this consensus (in terms of "tight" agreement vs. very little agreement) supplies valuable information about a map of the future. Delphi offers librarians reasonably precise data (not to be confused with accuracy; only time can provide an answer as to whether a given judgment was accurate) and has certain additional advantages in its data collection format.

These advantages are two-fold. The first is that the questionnaire allows an expert to express an opinion in a threat-free environment. That is, it reduces the probability that polarity occurs because of face-to-face confrontation. As library operations grow more complex (e.g., TTY networks, computerized retrieval systems, new microform systems, etc.), it becomes increasingly important that members of these specialized support systems be able to provide this information about the future without polarizing opinions based on their specialty and their hope for ther own professional interests.

The second advantage is that Delphi is suited for displaying a wide range of events. Although specific links between singular events and a composite picture of the future are best done with techniques other than Delphi, this forecasting procedure nevertheless allows for a wide range of topics to be considered within some broad objective. Especially, with social forecasting, it is important that seemingly far-out events be considered within the construct of potential library utilization so that long range planning can include those synergy points which occur when new expectations arise (i.e., cable television microfilm) or when new social expectations develop (such as the Right-to-Read program).

In summary, the Delphi forecasting technique allows the library planner the option of dealing with futuristic events with a panel of "experts" to determine the degree of consensus about the plausibility of these events occurring in the future. Data collected with this instrument can include parameters of time, value, probable occurrence, price, technological feasibility, and almost any set of conditions for which experts can apply a numeric value.

Disadvantage of Delphi

Although Delphi can provide some hueristic insights to the person or group administering the instrument, one major disadvantage must be pointed out. A Delphi forecast only provides consensus data concerning expert opinion with respect to a series of events, in some future time frame. The Delphi process does not in any way provide those logical or causal links concerning the relationship *between* the Delphi events (as the Delphi is traditionally used). Caution must be exercised in not anticipating that the data obtained can be plugged directly into the decision making process. Although the data can be useful in resource allocation, determining training programs, deciding on facilities, etc., development of an *overall* future picture is probably best done with other procedures such as contextural mapping or even scenario writing.

The Focus Delphi

Investigators using traditional Delphi studies have selected their "experts" using a variety of means. The number and quality of the author's publication is an index to his expertness. National reputation within their discipline is another index and is sometimes determined simply by telephoning other experts in the field and polling their opinions, thereby using similar experts as a panel of judges.

Especially in social forecasting, however, I argue that "expertness" might be determined by the role which an individual plays with respect to the system being considered. For example, there is no one more expert at being a patron in a library than a person who is a patron. If information provided by a typical patron is essential to long range library planning in that the patron can accept or reject a planned innovation, then it becomes extremely important that patrons provide data to long range planners. Similarly, if future planning involves federal funding, then it is logical that someone who knows and can intuit about federal funding procedures be used to forecast the future of those resources.

In short, we are usually concerned in futuristic planning with a system. A system can be viewed as having input, thruput, output and some suprastructure within which the system operates. People play different roles within a system and can provide the planner with essential data, based on their role, in terms of what if valued, what they will support, use, reject, etc. Differences between groups is extremely valuable planning data.

If the major function of the long range planning is to clearly explore alternatives to traditional library practice, then it is necessary to analyze the levels of consensus of groups within the system. Where traditional Delphi tends to force consensus, the Focus Delphi is typically used to discover where or where not consensus exists. Knowledge of the differences of opinion held by those with different roles within a system is valuable for the policy maker; identifying disagreements might lead to one kind of long range plan: identifying areas of agreement (all sectors having agreed as to when an event might occur and to its potential value) would lead to another kind of planning strategy. In short, where traditional Delphi attempts to use one panel of experts to arrive at the degree of consensus by which a given technological innovation will occur and when this technological innovation might impact on other events, the Focus Delphi tends to consider the complex nature of social forecasting and to measure the degree of consensus within and between the social system for the purpose of long range social planning.

Determining Events

There are several ways in which events can be chosen for inclusion in the Delphi study. The first and most commonly used is that the panel of experts are invited to submit eight or ten "most plausible events in the future which impact upon libraries." Typically, this list of events is returned to the investigator, cut apart and sorted into logical topic areas. Typically, 12 to 15 topics will emerge from the concerns and interests of the experts. Either

composites of these events or representative statements are drawn from each topic pile and formatted into the Delphi questionnaire.

Another way of determining events is to search the literature using future oriented criteria and compile events as represented in the literature. Frequently, minimal training and relatively unsophisticated individuals can perform this search and determine a surprising number of future oriented events which can be used in a Delphi.

Under either condition, it is possible for the investigator to write and insert his own events based on the function the Delphi is to serve. Ideally, both procedures are used and the results tabulated to see if there is a significant difference between what the authors are purporting and what the experts in the field are postulating concerning a reasonable state of affairs in the future.

Once the events are edited and displayed (and usually it will take respondents from 60 to 90 minutes to adequately cover 40 to 50 events), then the questionnaires are sent out for the first "pass." Typically, rather simple estimates are called for in the first pass such as an estimate at some level of probability as to when the event will occur, plus perhaps some numerical estimate as to the value of this event vis-a-vis the individual, the institution or the profession.

Once the data has been analyzed, the second round goes out for the purpose of eliciting the consensus of the experts. The interquartile ranges of the date estimates from all responses could be tabulated and displayed to participants on the second round with an invitation to change their prediction if they desire. In addition, if their estimates were outside the interquartile range, they might be asked to state a reason for retaining their estimate. During the second round, participants could also be asked to state briefly whether they felt the "consequence" of an event to be desirable or undesirable.

In the third round, the interquartile ranges from round 2 could be displayed and a similar reestimation solicited (typically, the most consensus in terms of date estimates occur between the second and third rounds). In addition, participants could be asked to state briefly what they might do to enhance or retard the accounts of the current events based on their assessment of whether this event was valuable or detrimental to the functioning of a library operation.

Analysis of Data

Deriving conclusions from data to "prove" a hypothesis, is obviously an impossible task with respect to future events. Instead, the data profiles from a Delphi forecast should be viewed as stimulus for long range planning. A number of guidelines can be used in examining the data obtained from the Delphi. Essentially, these consists of the following:

1. What is the *time estimate*? What is the relationship of this time estimate to precedent and antecedent events which relate to the event in question?
2. What is the *degree of consensus* within the total group (a narrow versus a wide spread of estimated dates)?
3. Is this *consensus* of the total group or are there *significant differences within certain subgroups?* Can these subgroups be viewed as advocates or decision makers for the event in question?
4. Both broadly and narrowly, what are the *interrelationships* of the event in question to other events? Do the data, including statements to enhance or retard an event, indicate that they will be an advocate group? Are the advocate group estimates tight or broad with respect to time estimates, advocacy procedures and value assessments?
5. Has there been a significant *shift in time estimates* between the first and third rounds of the Delphi? Viewed in light of the value assessment and the forecast range of dates, is any particular subgroup more amenable to discussion concerning their actions which might enhance or retard the development of a particular event?

Conclusion

The value of data collected with a procedure like the Delphi is not that it provides information for a certain future (although this is possible with a tightly structured instrument), as much as to let the library planner project himself into the minds of the people regarding a pattern of events which *could* occur in the future. As decisions are thrust upon planners with increasing rapidity, it becomes absolutely essential that these planners understand the broad gestalt of a rapidly moving world in order that decisions and planning be made from the broadest base possible. One way to obtain this broad base is to look at the plausible events which might impact upon libraries and then through a series of forecasts examine the options which are feasible so that when the time comes to make a set of decisions, these decisions are made with respect not only to the primary consequences but to the secondary and tertiary effects.

During ancient times (say, 50 years ago), it was possible to begin a program and judge that program based upon its immediate consequences. As we are subject to exponential change, that is no longer possible. We must make decisions based not only on the question "Will the operation succeed?" but on the much more important question "What happens if we are successful?"

Summary

The Delphi forecasting procedure is a very useful, relatively inexpensive instrument for obtaining consensus about events in the future. Data from this instrument can be used both in terms of making decisions and as a pedagogical or "mind expanding" tool. Delphi can be of considerable utility in developing alternatives for library planners so that they are not shocked by some event in the future and find themselves unable to rationally consider the options thrust upon them in a rapidly changing world.

Twenty Evaluation Principles

Ken Eye and Jerry Walker

The following twenty general evaluation principles were developed by Dr. Jerry Walker and Dr. Ken Eye, both of the Ohio State University. The intent is to introduce a mind set for people applying, often for the first time, evaluation in the field. The principles are general guides to help the evaluator apply the notions of evaluation to situations specific . . . We have done the easy part . . . it is for you, the real experts, to apply the ideas to the real world. The twenty principles are separated into the four CIPP types of evaluation; however, there is no intention of "selling" the CIPP framework, for the concepts apply to other evaluation models as well. The illustrations are simple memory aids that Jerry and Ken use so we can "operationalize and implement the overarching conceptual frameworks" and other assorted jargon.

Thus, it must be kept in mind that the simple general principles apply to very complex processes designed to provide decision-making data to decision-makers. We have oversimplified, but have not misrepresented the content, yet we sometimes fear that the complexity of applying principles to the real world will be lost in our simple illustrations. We feel that to live out these principles will be difficult, sometimes risky, and if applied will result in a new breed of people attacking old problems in new ways to help create a better future. The authors are pragmatic idealists who have great faith in the ability and will of library people to work toward more viable alternative futures, and we offer these notions as a part of the mind-set necessary to create a better Tomorrow out of Now. For if we don't do it, who will?

Context Evaluation Principles

1. **Anomaly**—A-normal; something ain't right. Evaluation is costly and difficult, thus use it first where the need is greatest, and if time and resources are available, apply it to lesser problem areas later.

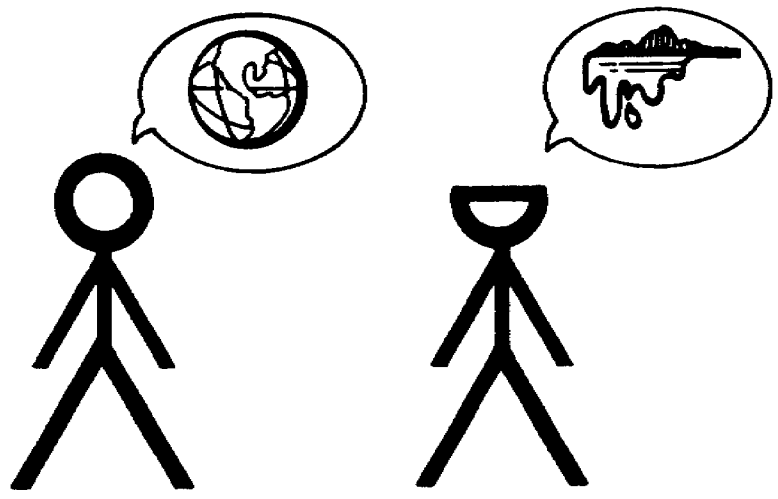
   2 + 2 = 3 Needs Evaluation Now

   2 + 2 = 3.5 Evaluate Next

   2 + 2 = 4 Evaluate Maybe Later

2. **Assumptions**—Evaluators and decision-makers always have assumed *constraints* and *values* that affect perceptions; the assumptions need to be expressed openly and understood by both the evaluators and the decision-makers served; if this is not done consciously, it is unlikely to be done, and the consequences of conscious or unconscious hidden agendas are nearly always negative.

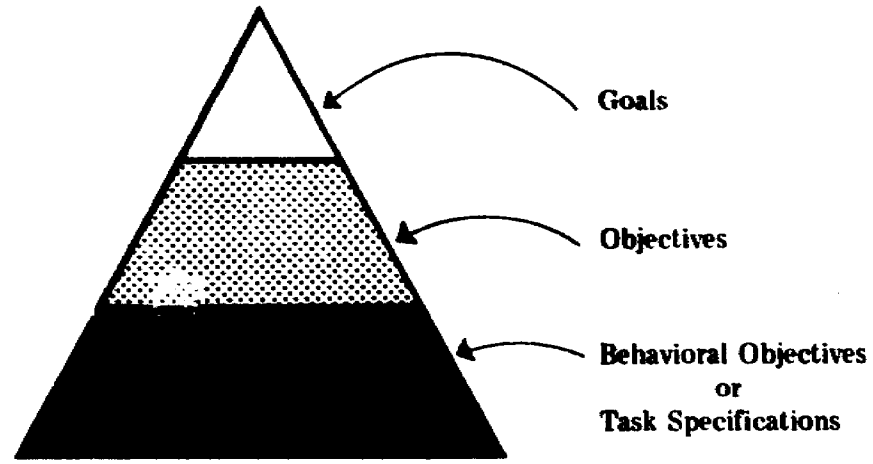
Round/Flat Worlders



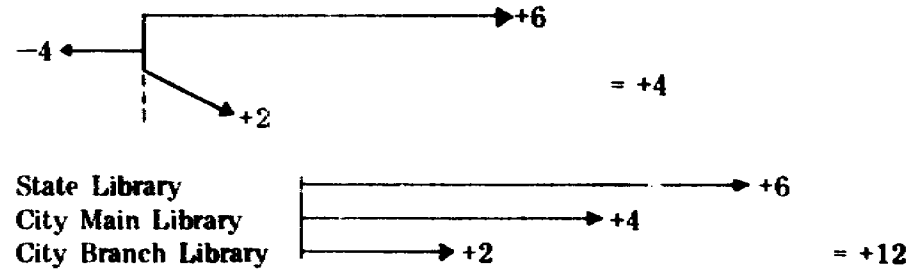
"Let's go for a boat ride."
"Okay. How far?"
"Oh, as far as we can go."

3. **Objectives ≠ Goals**—Objectives do not equal Goals, however, they are rationally related in a hierarchy. Objectives are finite and concrete, and Goals are value laden; thus, the accomplishment of Objectives is rational evidence of a high probability that Goals have been achieved, or at least approached to some degree.

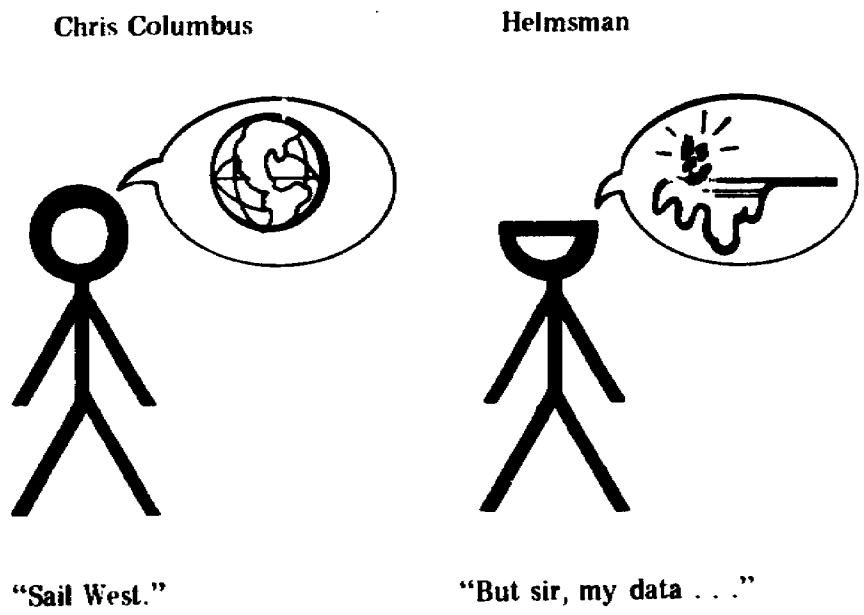
Goal and Objective Hierarchy



4. **Compatible Ends**—Overall system continuity is achieved or increased when the focus or efforts of all the system parts are directed toward common purposes. The output of a system is the vector sum of the parts.

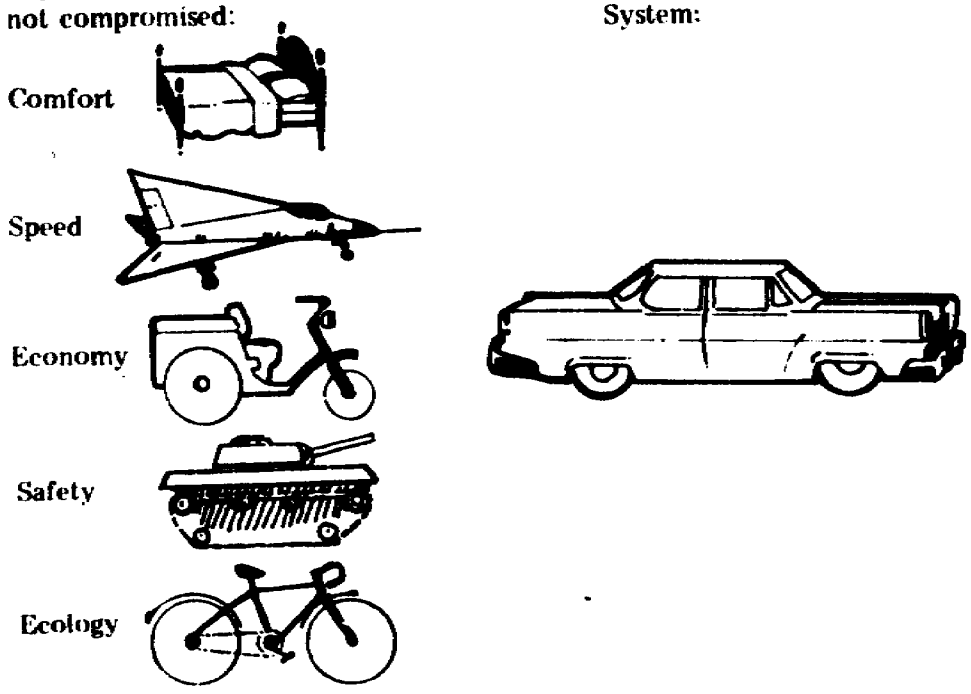


5. **No Irrational Decisions**—For both evaluator and decision-maker "mental health", it should be assumed that people do *not* make irrational decisions, rather, often other people have data we do not; thus, the evaluation data so carefully and objectively obtained by the evaluator may seemingly be ignored when in fact the decision-maker has other data that must control the final decision.

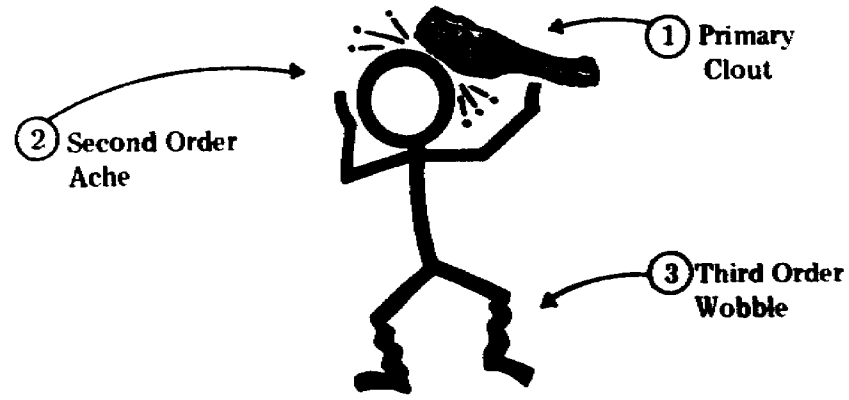


Input Evaluation Principles

1. **Suboptimization**—This notion is that to optimize the overall system, each part must sub-optimize; the overall system will only reach its greatest potential if all the parts reach less than theirs; thus, systems optimize only when subsystems compromise.



2. **Interactive**—All parts of a system affect all other parts to some degree; any change in means or ends should be examined for second, third, etc. order effects.



3. **Consider Alternatives**—Systematic consideration and analysis of alternatives increases the chances of a "best" choice in the particular situation.

OBJECTIVES

M	1	3	5	0	-1	8
E	5	5	4	1	1	16 ← Best Bet
A	3	0	1	2	0	6
N	-1	4	2	0	0	5
S	0	0	5	5	0	10

CRITERIA: 1) resources
2) time
3) politics
etc.

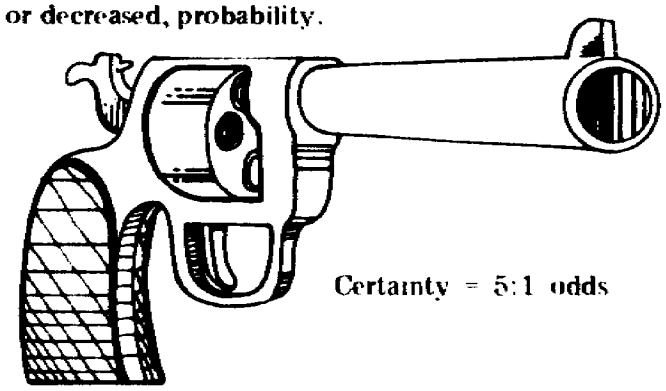
Rate on 1—5 scale

4. **Strategy, then Design**—Folks often begin to think in terms of low level design details before the overall strategy is fully considered; Think Goals, then Strategy, and then specific enabling Design; the three interactive,

thus, when a design is finally selected, one must re-cycle the process to insure the Design derived in fact supports the Strategy and Goals.

1 Goal	2 Strategy	3 Design
A ⟶ B	Fly	Delta 707
	Bus	Greyhound
	Car	↓
	Walk	
	Hitchhike	
	Horse	
	Bike	
	etc.	etc.

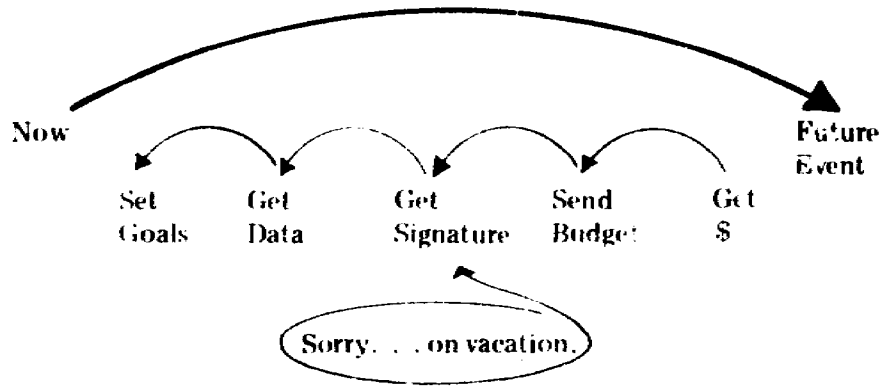
5. **Probabalistic**—Consider the universe to be based on probability rather than absolute truth and certainty; optimum actions do not guarantee, rather, they only increase the odds of success. Thus, our traditional concepts of truth and certainty must be translated into terms of high or low, or increased or decreased, probability.



Certainty = 5:1 odds

Process Evaluation Principles

1. **Anticipate Antecedents**—To reach a Goal one should ask, "what must come before that?", and then "Before that?" until the future event is projected back to now: that is, a pucker must preceed a kiss.



2. **Timeliness**—Evaluation data must get to decision-makers in time to be useful; evaluators have no "morning after pill."

"But I'm only one minute late!"

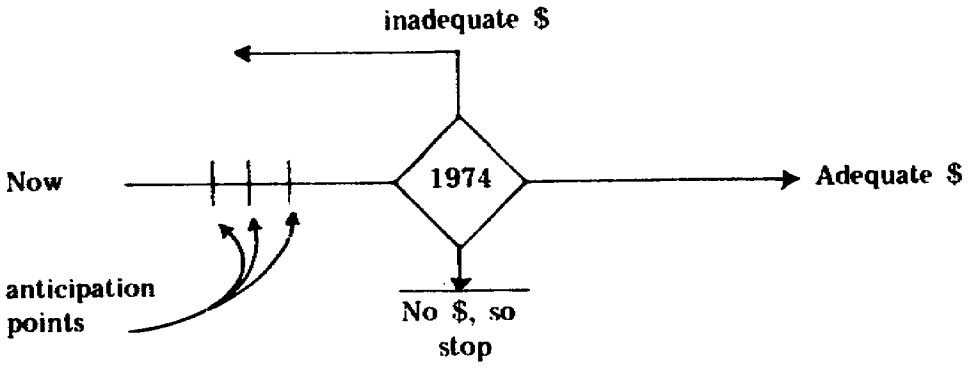
3. **Efficiency**—Time and resources are limited, thus they must be used wisely. For example, relative to data collection, gather only that which will be used from as few sources as necessary to get reliable, valid, and timely data. Thus, ask the right sources the right questions at the right time in the right way as few times as possible.

DATA NEEDED

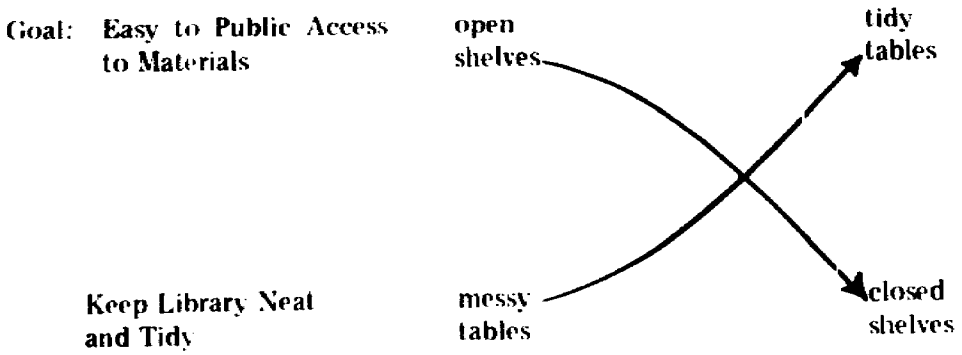
S O U R C E S	Social	Time	Physical Plant	Population	Financial	etc.
Literature						
Experts		X	X		X	
Users	X		X	X		X
Law					X	X
etc.	X					X

4. **Recycling Readiness**—As decision points are approached, it is possible to get ready to decide, particularly if the decision to be made is clear cut and

the data leans heavily toward one alternative; or if the decision choice is not obvious one can begin to think about "what if?" relative to the expected choices. This process helps create a surprise free future; surprise birthday parties are more fun than surprise 50% staff cuts.

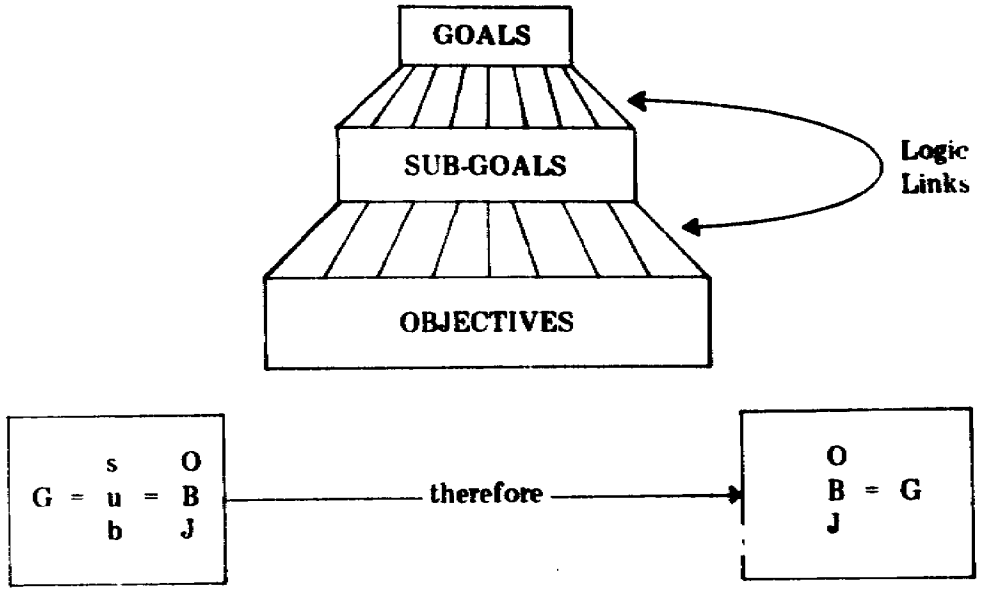


5. **Goal Drift** - Over a period of time initial Goals and even Objectives tend to drift as everday processes and pressures cloud our desired ends. For example, social goals or stated program ends often are shifted to a lower priority as re-funding becomes more critical, which then lessens the probability of the outcomes warranting being refunded: age old problem . . . money over what matters.

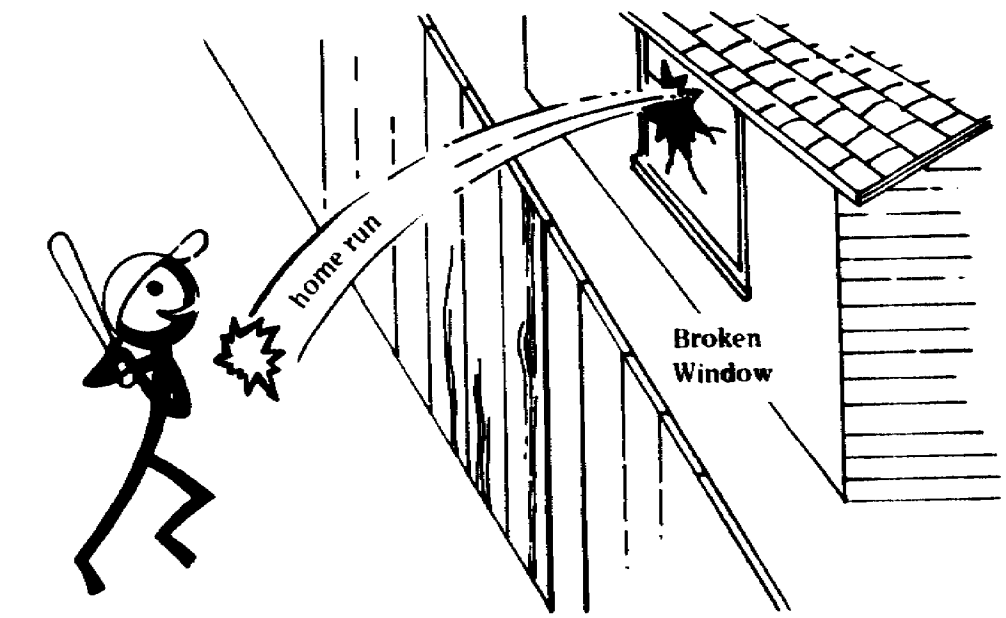


Product Evaluation Principles

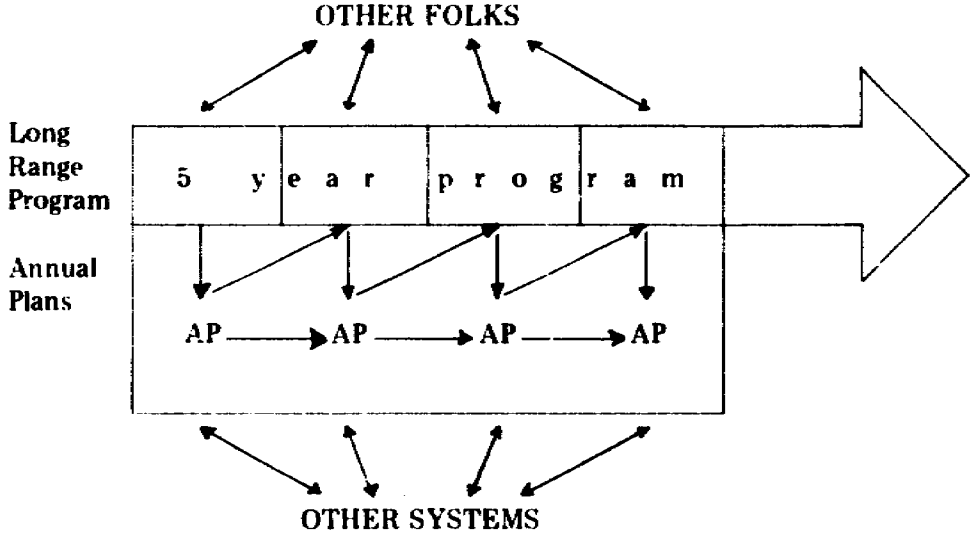
1. **Logic Links** The lines between levels in a Goal and Objective hierarchy are by definition *logical*. Thus, based on logic, one must *accept* that if the Objectives are met, the Goals are therefore to some degree met; further, the meeting of Objectives does not prove Goals have been met . . . only the *probability* of Goal attainment has been increased.



2. **Consider All Consequences**—Outcomes or any action should be analyzed for unintended consequences. For example, if an objective is to increase library use from 10% to 90% of the potential users, it might be necessary to increase the budget by 300%, and such a jump on a tax levy would likely result in defeat, and thereby jeopardize the ongoing program for the 10% plus potential new users for several years.



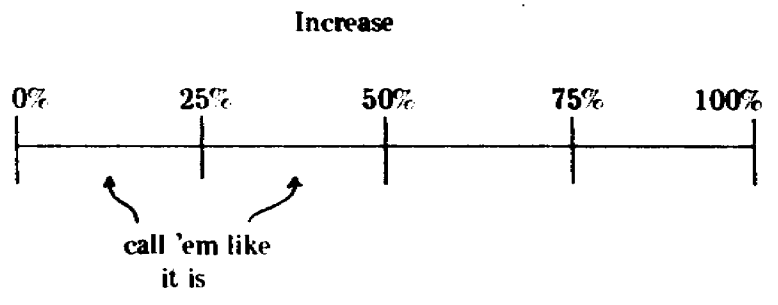
3. **Share and Learn**—Sharing has two dimensions: internal and external. First, what happens this year should be considered in next year's internal annual plan. And other systems and people will profit by our success or failures if we will share data, and vis-a-vis. Secrecy perpetuates reinvention of the wheel, often with one flat side.



4. **Avoid Overkill**—Too much or too complex data is inefficient, if not detrimental; use a #10 hook for a #10 fish, and a #2 hook for a #2 fish.
   1) Simple Question:
      "Did literacy increase?"
   2) Intermediate Question:
      "How much did each person change and at what rate?"
   3) Complex Question:
      "What variables caused the most change?"

   The statistical horsepower needed to answer question 3) is wasted if applied to question 1), and the data needed for question 1) will not adequately answer question 3).

5. **There Are No Negative Findings**—Data is a fact; it is neither good or bad, or positive or negative, until people apply value criteria. The evaluator should supply factual data upon which value judgements can then be made by decision-makers. Thus, if an objective is to increase night use of a library by 25%, the evaluator should report the facts, say the increase was 18% or 38% . . . it is for the decision-maker to decide if the finding reflects a positive or negative condition, for maybe a funding cut had happened and 18% is the best news since the printing press . . . .



The above principles are guides to a mind set. They overlap and interact, and can be applied to management as well as evaluation tasks. And one of the great evaluation problems is clear-cut role definition, for few systems can afford a person to act only as an evaluator. In the real world you may wear evaluator, administrator, decision-maker, and worker hats at different times or sometimes simultaneously, and to confuse any one with another will confuse them all. Thus, do your best to separate the roles and functions as you go about gathering and processing data upon which you or others will base decisions. And in conclusion, it must be recognized that evaluation will neither lessen nor even simplify your decision-making tasks, nor will evaluation data provide absolute concrete answers; and it must never be forgotten that:

The Purpose of Evaluation
Is Not to Prove
But to Improve.

APPENDIX

Project Process Monitoring System for Work Activities

Ken Eye

This process monitoring feedback system is designed to provide process data feedback to a Project Director, Unit Heads and staff. The data is primarily quantitative, relative to time line adherance although the Monitor can ask quality questions if necessary. The system has several advantages: 1) simple operation, 2) keeps a sequential longitudinal process record, 3) requires little time to operate, 4) disseminates progress data simply to Project Directors, Unit Heads, and staff 5) no great technical skill is needed by the Monitor to operate, 6) no great technical knowledge is needed by the Monitor in the content area being monitored, and 7)the system projects short-range activities. In the large project that had several hundred scope of work activities being monitored in which the author developed, tested, and used the monitoring system, total staff time required, including typing, for each cycle varied from 4 to 8 hours; and Unit Head interview time was never more than 15 to 30 minutes, including coffee and chit-chat. Thus, the cost-benefit ratio is low.

The following will outline the sequence of monitoring activities referencing to sample monitoring forms at conclusion of article.

Goals, Objectives and the Scope of Work

It is assumed the project has a written hierarchy of Goals and Objectives upon which a Scope of Work can be developed for each Objective. Written Goals and Objectives are not necessary to operate the monitoring system, however, it seems rather pointless to closely monitor an activity for which the end product(s) or process(es) are not specified.

The Scope of Work is a statement of what activities will occur between what times relative to a specific Objective. The Scope of Work 1) should be as

detailed as necessary to reflect *actual* and *realistic* activity and time estimates, and 2) it should have slippage time built in to allow for unexpected delays, the amount depending on past experience.

Note that each Scope of Work item can be used to develop budget allocations to document expected and than actual costs. Also note that the Scope of Work items can be broken down further into an operational task analysis in which specific personnel and resource allocations can be specified. Thus, both the Project Director and the staff will have a guide for daily or weekly task assignments.

(See Sample 1 for a Goal, Objective, and Scope of Work.)

Making the Forms

The first monitoring task is to make several forms. First, from the Scope of Work make a Master Scope of Work Time Line for the appropriate time span. It will be best to make up a blank Master from which copies can be made, and on the working copies put on the time line for each Scope of Work item. Then the filled in Master Scope of Work Line can be disseminated to all persons involved.

(See Sample 2 for a Master Scope of Work Time Line that has been filled in.)

The second monitoring task is to make scope of Work Monitoring Forms. Again, make a blank master from which copies can be made to fill in. It is important to note that a filled in Scope of Work Monitoring Form must be made for *each page* of the Scope of Work, and on the individual Monitoring Forms the Scope of Work activity number is placed in the left column of the Monitoring Form to correspond with the placement of the scope of work activity on the Scope of Work page. Thus, for each monitoring period there will be a Scope of Work Monitoring Form that may be placed side-by-side with each page of the project Scope of Work . . . *the page-by-page item correspondence allows for fast and easy filling out of the Monitoring Forms and provides a simple means to file the data*, which will be noted later.

(See Sample 3 for a Scope of Work Monitoring Form that corresponds to the sample Scope of Work in Sample 1.)

Preliminary Administrative Decisions

The third step is for the Monitor or Evaluator, or the Project Director is he or she happens to serve both functions, to decide which Scope of Work activities are to be monitored. In small projects all activities can be monitored, but in large projects only the important milestones need be monitored. For example, in the sample Scope of Work in Sample 1, the Project Director may choose to monitor activities 3, 5, 7, 8, 9, and 11, or possibly only activities 5, 9, and 11 would be selected.

The fourth step is for the Project Director to specify how often the Scope of Work activities need to be monitored. The time span selected will depend on the overall span of the project, the criticalness of the activity being on time, the turn around time necessary to make activity adjustments once feedback data is obtained, and the time and resources available for the monitoring task. Here it will be assumed that the time selected was the 15th of each month.

Once the monitoring activities and dates are specified, the fifth step is to note them on the Master Scope of Work Time Line . . . a check mark or "x" in red ink can be used to highlight the important activities and dates.

(See Sample 2, where activities have been identified with a check mark for the month of February.)

Once the decision is made the Project Director should alert the staff involved of when and how the process monitoring is to be carried out . . . and it would be a good idea if staff members were in on as much of the decision-making as possible so folks would both feel a part of the operation and would know what to expect. And at this time each staff member should receive a filled in Master Scope of Work Time Line on which is noted the overall project monitoring scheduled from which each individual can note the items relevant to them. This keeps the whole staff informed of the work flow of other people and units, and shows how each task fits into the whole.

Doing It

The sixth step is the actual monitoring. First, the Monitor notes by circling the activity number on each page of the Scope of Work Monitoring Form the activities that are to be monitored; this data can be taken from the Master Scope of Work Time Line, going down the month column to note items checked for monitoring at any time during the month (See Sample 2, for the month of February.)

On the 15th of each month the monitor interviews each Unit Head or person designated to report. The interviewer places page-by-page the Scope of Work Monitoring Form beside the corresponding Scope of Work page and asks the following:

1. "Did you complete the work specified during the previous two weeks?"
2. "Did you begin work specified during the previous two weeks?"
3. "Do you expect to complete the work specified during the next two weeks?"
4. "Do you expect to begin work specified during the next two weeks?"
5. "Have you started or completed, or expect to start, activities not specified in the Scope of Work?"
6. If any answers are "no" for questions 1-4 above, the monitor then asks: 1) for new dates, 2) for the reasons for the change, and 3) what are the expected consequences of the delay?
7. All of the information is noted on the Scope of Work Monitoring Form *by the monitor*. This process is repeated page-by-page for each item to be monitored.
8. At this time the Unit Head can relay to the Project Director, or vis-a-vis, any other information about needs, opportunities, or problems that

bear on the Scope of Work, and the Monitor can include this data in his or her report to the Project Director.

(See Sample 4, for a filled in Monitoring Form for the month of February, 1971.)

There are other strategies for gathering the data. For example, each Unit Head could be given the Monitoring Forms to be filled out and returned to the Project Director or Monitor on the 15th of each month or the Unit head could receive several months supply of Monitoring Forms to be submitted on the 15th of the month. However, the interview strategy is most likely to produce data on time every time, and data analysis is easier if only one person does the recording . . . usually a person can read his or her own writing, and typing is not necessary.

Data Analysis and Reporting

The seventh step is for the monitor to analyze the collected data. In so doing a number of tasks need be done: First, using a colored line, a progress line is drawn in on the Master Scope of Work Time Line to represent the progress data reported for each Scope of Work activity.

(See Sample 5, for a filled in Master Scope of Work Time Line for the month of February, 1971.)

Second, the Monitor notes critical activities that are not on time and that will disrupt the project work flow.

Third, the monitor files each page of the Scope of Work Monitoring Form behind the corresponding page of the Scope of Work in a master file. As this process is repeated monthly a longitudinal record of the work flow will be compiled for each item in the overall project Scope of Work.

Fourth, the monitor gives the Projector Director 1) a copy of the up-to-date Master Scope of Work Time Line with the progress line drawn in 2) a report of items likely to disrupt the work flow, and 3) possibly makes recommendations of how personnel or other resources can be reallocated to help make up for the noted discrepancies . . . this report also can be filed with each unit's Scope of Work, or it can be filed separately in a cummulative report file.

And Then . . .

The entire process is repeated periodically or as often as needed, for in critical times the monitoring schedule can be moved up to daily, weekly, or bi-monthly without disrupting the monitoring system.

A Master Scope of Work Time Line can be centrally posted to inform all staff members of project progress . . . this tends to keep individual units from losing sight of where they fit in to the overall effort. Also, it is always possible to revise the project Scope of Work and the Master Scope of Work Time Line in keeping with changes that may occur, for if one unit falls behind it will possibly effect some or all of the other units unless corrective action is or can be taken.

There are a variety of ways the monitoring data can be used. First, the Project Director will be informed about overall or individual unit work flow; second, the Project Director can reallocate personnel and other resources to adjust work flow; third, the Unit Heads can be kept informed of how they are progressing relative to the overall effect by having the up-to-date Master Scope of Work Time Line posted centrally, or they may monthly receive a copy of the report that the Monitor gives to the Project Director; fourth, the longitudinal data can be a source for reporting Scope of Work changes to funding sources such as the federal government come quarterly report or refunding proposal time; and fifth, the data provides a historical process record should the effort be transported to be replicated by staff at another site.

A Philosophical PS

It is important that the monitoring process be open and non-threatening to staff members; thus, the style of administration of the Project Director is critical. The data should *not* be used as a basis for personnel assessment, for that would severely limit staff willingness to report delays . . . for the purpose of the feedback system is to give on-line process data to correct process discrepancies quickly so that competent people can do a good job better. The purpose of the process evaluation feedback system is *not to prove*, but *to improve*.

Sample Formats For the Project Monitoring System

1. Sample Goal, Objective, and Scope of Work

GOAL 1: To develop an evaluation training package for new Project Directors.

OBJECTIVE 1: To conduct an initial field test of the prototype training package.

SCOPE OF WORK

	Activities	Start	Complete
1.	Identify 5 experienced Project Directors	1-1-74	1-5-74
2.	Identify 5 new Project Directors	1-1-74	1-5-74
3.	Telephone the 10 Project Directors (1 & 2 above) to get their cooperation	1-8-74	1-9-74
4.	Develop field test directions letter and reproduce 15 sets of materials	1-8-74	1-10-74
5.	Mail materials to the 10 Project Directors	1-11-74	1-11-74
6.	Make follow-up telephone calls to 10 Project Directors	1-19-74	1-19-74
7.	Analyze field test returns	1-23-74	1-27-74
8.	Rewrite training materials package	1-30-74	2-28-74
9.	Conduct second field test if necessary,	3-1-74	4-21-74
10.	(Etc. for other activities)	1-10-74	6-30-74
11.	(Etc. for other activities)	2-15-74	9-15-74

2. **Sample Master Scope of Work Time Line**

MASTER SCOPE OF WORK TIME LINE — 1974

Goal 1, Objective 1	JAN. 1	FEB. 2	MAR. 3	APRIL 4	MAY 5	JUNE 6	JULY 7	AUG. 8	SEPT. 9	OCT. 10	NOV. 11	DEC. 12
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												

3. Sample Scope of Work Monitoring Form

Goal 1 SCOPE OF WORK MONITORING FORM: January 1, 1974–December 31, 1974
Objective 1 Monitoring Date _____

	ON TIME		IF "NO"		REASONS FOR CHANGE
	Beginning	Completion	New Dates		(Use Back of Page if Needed)
	Yes	No	Beginning	Completion	
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					

4. Sample filled in Scope of Work Monitoring Form for the month of February, 1974

Goal 1
Objective 1

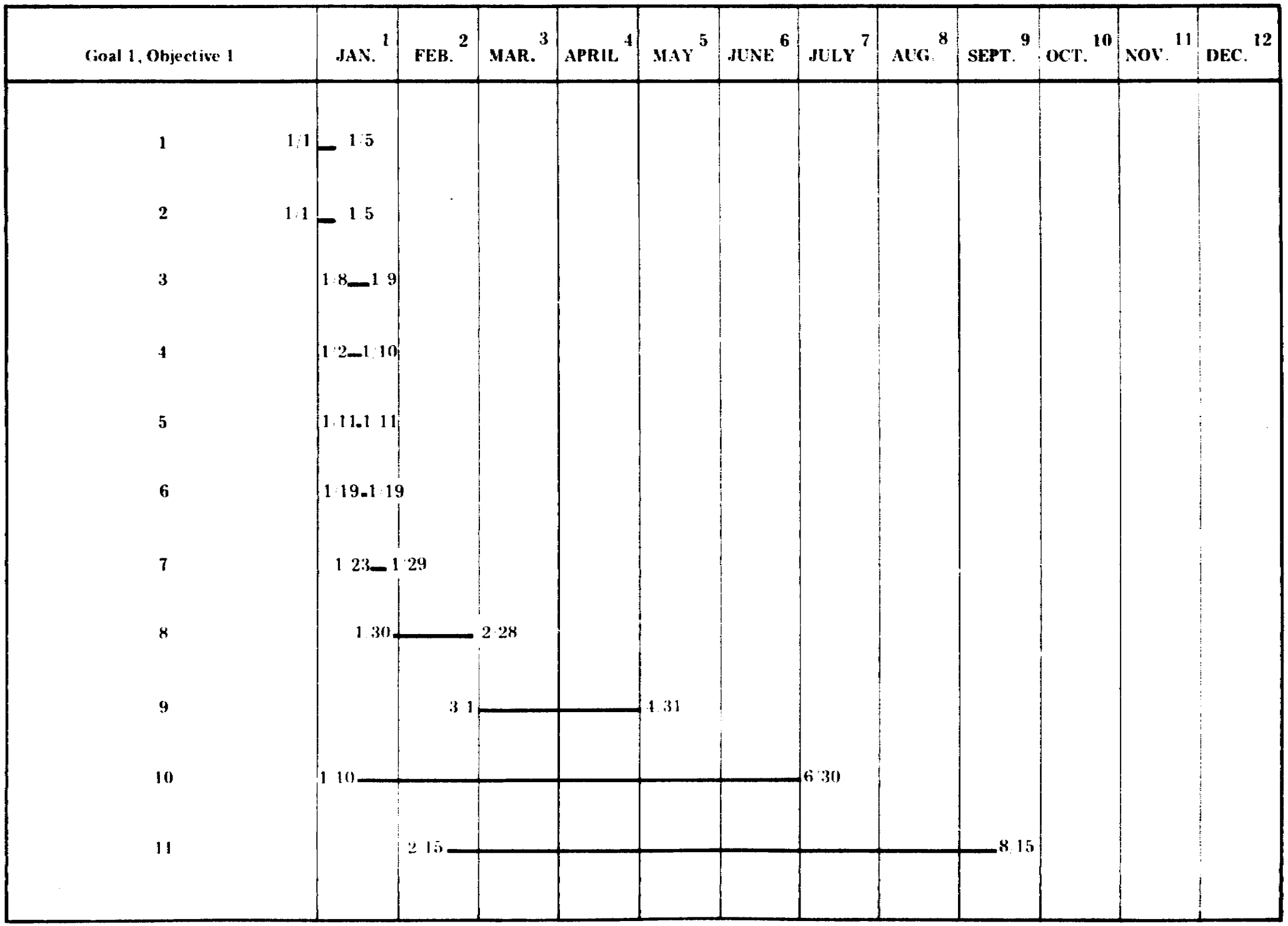
SCOPE OF WORK MONITORING FORM: January 1, 1974–December 31, 1974

Monitoring Date _____

	ON TIME		IF "NO"		REASONS FOR CHANGE
	Beginning	Completion	New Dates		Use Back of Page if Needed
	Yes	No	Beginning	Completion	
1					
2					
3					
4					
5					
6					
7					
8	✓				
9					
10	✓	✓			Progress OK
11		✓	2/18		Staff member ill; late start will be made up OK.

5. Sample filled in Master Scope of Work Time Line for the month of February, 1974

MASTER SCOPE OF WORK TIME LINE – 1974



Forms and Guides Now in Use at Library Schools and Training Institutes

CASE WESTERN RESERVE UNIVERSITY

School of Library Science

Field Work Evaluation

Student _____ Date _____

Agency _____

Supervisor _____

Please describe the strengths of the student and the areas where improvement is needed with regard to:

Competence in performing responsibilities assigned—

Relationships with staff and with users of the service—

Dependability, responsibility, reliability—

Urban Services Program

School of Library Science

Case Western Reserve University

Field Work Guidelines

I. The main purposes of the student's field experience are to enable him to observe and learn:
the general as well as the unique characteristics of this community;
the information and service sources and needs of this community, including the library;
the way in which a special project based on the student's knowledge of II and III can enhance both library and agency effectiveness

II. Community profile
A. We hope the student will have an opportunity to:
1. review existing community studies
2. study census and other demographic data
3. identify agencies and services
4. become acquainted with schools
5. learn other sources of contact and information
B. What community planning/problem-solving groups and/or problematic social situation can the student staff, co-staff or or observe on a regular basis?
C. Can there be other learning opportunities for the student such as orientation, staff meetings, contact with other community welfare agencies or groups, contacts with individuals, contact with other institutional groups or representatives, study or research projects?

III. Role and Performance as a student
A. Ability to look at one's own performance objectively
B. Reference to professional reading and class discussion
C. Promptness and other indications of self-discipline
D. Careful preparation of roles for discussion and review

IV. Professional potential
A. Interest in and empathy with individuals
B. Understanding and support of community goals
C. Imaginative grasp of opportunities—and limitations—of professional role in community

NOTE:
A checklist based on the above guidelines will be prepared for use in evaluation of the field experience.

School of Library Science
CASE WESTERN RESERVE UNIVERSITY

Supplementary Field Work Guidelines — Spring, 1973

From February through May, 1973, the Seminar in Modern Urban Library Service is devoted to the role of librarian as educator. It deals with the planning, implementing, and evaluation of educational programs involving children, young adults and adults. By "educational programs" we are speaking of a very broad range of activities—formal and informal—which have an educative goal.

Since the seminar and the field work are intended to be complementary, it is hoped that students will have the opportunity to expand their experience in educational activities. To the extent that it is possible for the particular library or agency, the following experiences would be desirable:

1. Participating in planning meetings on the development of educational programs
   a. with staff,
   b. with community groups and/or potential program participants.
2. Observing a variety of educational program sessions.
3. Planning and implementing a program.
4. Evaluating a program and/or participating in evaluating meetings.

FLORIDA STATE UNIVERSITY
SCHOOL OF LIBRARY SCIENCE

Faculty Comments: This is actually a two way form—can be used, with slight modification, by student intern as well as field supervisor. For this program, interns also keep brief diaries of their work experience. This decreases the possibility of overlooking problems/opportunities to be discussed during on-site visits.

INTERNSHIP EVALUATION

Intern: _____ COUNTY: _____
Last Name First Name

Directing Librarian: _____

Principal: _____

School: _____ Address: _____

PERSONAL AND PROFESSIONAL QUALITIES AFFECTING SUCCESS

Key to Evaluation: 1. Inadequate 2. Some success, but needs improvement 3. Average 4. Above average 5. Superior N.O. (Not observed)

Personal:

_____ Adaptability
_____ Appearance
_____ Voice usage
_____ English usage
_____ Enthusiasm
_____ Initiative
_____ Rapport
_____ Attitude toward criticism
_____ Sense of humor
_____ Cultural resources
_____ Poise, self-confidence

Professional:

_____ Technical knowledge
_____ Knowledge of materials
_____ Reading guidance
_____ Supervision of assistants
_____ Assistance of faculty
_____ Instruction in library usage
_____ Curriculum development
_____ Over-all school planning
_____ Awareness of objectives of the library in school
_____ Ability to lead in library improvement in school
_____ Ability to interest pupils in library materials and to work with them
_____ Potential

1. Strengths of the intern

2. Criticisms, suggestions, recommendations

3. Strengths of program planned for intern

4. Criticisms, suggestions, recommendations for the program.

Evaluator: _____ Check one: Preliminary _____

Title: _____ Final _____

Rev. July, 1972

FLORIDA STATE UNIVERSITY

STUDENT INSTRUCTIONAL RATING SYSTEM FORM (REVISED)

(Adapted from Michigan State University SIRS Form)

Instructor ______________ Course No ______________ Section ______ Quarter F W Sp Su (Circle one) 19______

DIRECTIONS

This form is designed to [illegible] rate an instructor [illegible] characteristics. Please omit (leave blank) any items which you feel do not pertain to the course you are rating. Space is provided on the reverse side of this form for free-response items as well as additional comments. With a soft lead pencil respond to the items below using the KEY printed on the right.

KEY

- SA if you **strongly agree** with the statement
- A if you **agree** with the statement
- N if you **neither** agree nor disagree
- D if you **disagree** with the statement
- SD if you **strongly disagree** with the statement

1 The instructor was enthusiastic when presenting course material .... 1 SA A N D SD
2 The instructor seemed to be interested in teaching .... 2 SA A N D SD
3 The instructor's use of examples or personal experiences helped to get points across in class .... 3 SA A N D SD
4 The instructor seemed to be concerned with whether the students learned the material .... 4 SA A N D SD
5 You were interested in learning the course material .... 5 SA A N D SD
6 You were generally attentive in class .... 6 SA A N D SD
7 You felt this course challenged you intellectually .... 7 SA A N D SD
8 You have become more competent in this area due to this course .... 8 SA A N D SD
9 The instructor encouraged students to express opinions .... 9 SA A N D SD
10 The instructor appeared receptive to new ideas and other's viewpoints .... 10 SA A N D SD
11 The student had an opportunity to ask questions .... 11 SA A N D SD
12 The instructor generally stimulated class discussion .... 12 SA A N D SD
13 The instructor attempted to cover too much material .... 13 SA A N D SD
14 The instructor generally presented material too rapidly .... 14 SA A N D SD
15 The homework assignments were too time consuming relative to their contribution to your understanding of the course material .... 15 SA A N D SD
16 You generally found the coverage of the topics in the assigned readings too difficult .... 16 SA A N D SD
17 The instructor appeared to relate the course concepts in a systematic manner .... 17 SA A N D SD
18 The course was well organized .... 18 SA A N D SD
19 The course materials appeared to be presented in logical content units .... 19 SA A N D SD
20 The direction of the course was adequately outlined .... 20 SA A N D SD
21 This course made a significant contribution to your overall personal educational objectives .... 21 SA A N D SD
22 What percentage of the course material covered do you feel you actually learned? (a) more than 90% (b) about 80% (c) about 70% (d) about 60% (e) less than 60% .... 22 A B C D E

STUDENT BACKGROUND: select the most appropriate alternative

23 Was this course required in your degree program? .... 23 Yes No
24 Are you a major in the area in which this course is being taught? .... 24 Yes No
25 Was this course recommended to you by another student? .... 25 Yes No
26 How many other courses have you had in this department? (a) none (b) 1-2 (c) 3-4 (d) 5-6 (e) 7 or more .... 26 A B C D E
27 What is your overall GPA? (a) 2.2 or less (b) 2.3-2.5 (c) 2.6-2.9 (d) 3.0-3.3 (e) 3.4-4.0 .... 27 A B C D E
28 What grade do you expect to receive in this course? .... 28 A B C D F

OPTIONAL ITEMS: Items 1 through 15 below may be used to respond to items specified by the instructor

Do not overprint in this area

1 .... 1 1 2 3 4 5
2 .... 2 1 2 3 4 5
3 .... 3 1 2 3 4 5
4 .... 4 1 2 3 4 5
5 .... 5 1 2 3 4 5
6 .... 6 1 2 3 4 5
7 .... 7 1 2 3 4 5
8 .... 8 1 2 3 4 5
9 .... 9 1 2 3 4 5
10 .... 10 1 2 3 4 5
11 .... 11 1 2 3 4 5
12 .... 12 1 2 3 4 5
13 .... 13 1 2 3 4 5
14 .... 14 1 2 3 4 5
15 .... 15 1 2 3 4 5

DO NOT WRITE IN THIS AREA

SIRS FORM — FREE RESPONSE SECTION

The following items are designed [illegible] communicate directly to the instructor your particular feelings and suggestions concerning the course.

A The thing I liked the **most** about this course was ____________________

B The thing I liked the **least** about this course was ____________________

C Additional comments and suggestions ____________________

Fisk University

Feedback Sheet

	Yes	No	Comments
1. Were you given a definite job assignment?			
2. Do you know what was expected of you this week?			
3. Were the assignments that you were given meaningful to you?			
4. Were your assignments professional?			
5. Did the activities seem well planned?			
6. Were the week's activities overly-structured?			
7. Was the area coordinator helpful?			
8. Do you think that the area coordinator was sensitive to your needs?			
9. Were conferences held with the coordinator?			
10. Were other members of the staff helpful?			
11. Were work conditions (facilities, etc.) satisfactory?			
12. Do you understand the goals of this week's activities?			
13. Do you think that these goals were achieved?			
14. Was the schedule satisfactory?			
15. Do you recommend that the activities be repeated for other interns?			
16. Was the seminar meaningful?			
17. Was the field trip meaningful?			
18. Do you think that a concentrated period in this particular subject area was necessary?			
19. Are the goals of the concentrated program clear to you?			

INSTITUTE ON THE SELECTION, ORGANIZATION, AND USE OF MATERIALS BY AND ABOUT THE NEGRO

Fisk University Library
June 15 – July 24, 1970

Assignments for Evaluation of the Institute

The twenty-five participants are asked to evaluate the full organization and operation of the Institute on the Selection, Organization, and Use of Materials By and About the Negro. The participants have been divided into five groups consisting of five persons each. The chairman of each group represents a library in which some of the major research resources on the black man are found.

Each group will be responsible for evaluating the sessions for the weeks indicated, for example, Group I will evaluate the sessions for the first week. The chairman of each group will serve as recorder for the group. Written, evaluative reports should be submitted to the Director of the Institute on the Monday morning following the week of the group's evaluation. Group V will be responsible for evaluating sessions of the last two weeks of the Institute.

The chairman of each group will serve as members of the final Evaluative Committee for the entire Institute. This committee should appoint its own chairman. Suggestions, criticisms and comments given in the reports of the five evaluation committees, including any remarks that the participants may wish to add, should be considered. The report from this committee should be given orally on the morning of the last day of the Institute, July 24, and should be presented to the Director in written form.

COURSE EVALUATION INVENTORY

University of Indiana

Course _____ Instructor _____ Date: _____

Please be frank and objective in your responses. Omit irrelevant items. Thank you for your co-operation.

I. Student Self-Evaluation

1. The amount of work I did for this course was
   very great 1 2 3 4 5 quite small
2. The quality of my work for this course was
   excellent 1 2 3 4 5 poor
3. My contribution to the class as a whole was
   excellent 1 2 3 4 5 poor
4. I learned from this course
   very much 1 2 3 4 5 very little
5. The subject matter, methods, or skills learned will be
   very useful 1 2 3 4 5 useless
6. On the back of this sheet, write your evaluation of your own participation and involvement in the work of this course.

II. Instructor

7. The instructor's knowledge of the subject was
   excellent 1 2 3 4 5 poor
8. The instructor expressed his ideas clearly
   always 1 2 3 4 5 never
9. He avoided confusing or useless jargon
   always 1 2 3 4 5 never
10. His speaking ability (enunciation, volume, etc.) was
    excellent 1 2 3 4 5 poor
11. His treatment of students was
    courteous 1 2 3 4 5 discourteous
12. The instructor was
    over confident 1 2 3 4 5 too unsure
13. He was aware of students' needs and difficulties
    always 1 2 3 4 5 never
14. He was able to alleviate students' difficulties
    always 1 2 3 4 5 never
15. He encouraged students to work independently
    always 1 2 3 4 5 never
16. His reaction to differences of opinion was
    encouragement 1 2 3 4 5 intolerance
17. On the back of this sheet, indicate your opinions about the instructor of the course.

III. Organization of classroom proceedings

18. The instructor was well-prepared
    always 1 2 3 4 5 never
19. The basic concepts were clear and logically developed
    always 1 2 3 4 5 never
20. The class was too-teacher dominated 1 2 3 4 5 too student-dominated
21. The lectures were
    stimulating 1 2 3 4 5 boring
22. The lectures were
    informative 1 2 3 4 5 wasteful
23. The discussions were a waste of time
    always 1 2 3 4 5 never
24. The committee/lab work was a waste of time
    always 1 2 3 4 5 never
25. The instructor covered the material
    too quickly 1 2 3 4 5 too slowly
26. His coverage of material was
    too superficial 1 2 3 4 5 too technical
27. The class was most interesting at the
    beginning 1 2 3 4 5 end

IV. Requirements

28. The text, with respect to course objectives, was
    relevant 1 2 3 4 5 irrelevant
29. The text was
    too difficult 1 2 3 4 5 too elementary
30. Reference materials were useful
    always 1 2 3 4 5 never
31. The text was
    up-to-date 1 2 3 4 5 outdated
32. The assignments were clear
    always 1 2 3 4 5 never
33. The number of assignments was
    too great 1 2 3 4 5 too small
34. The assignments were
    too difficult 1 2 3 4 5 too simple
35. The assignments were necessary (not busywork)
    always 1 2 3 4 5 never

V. Evaluation

36. There was sufficient time for preparation for exams/papers
    always 1 2 3 4 5 never
37. The criteria for grading were clear in advance
    always 1 2 3 4 5 never

continuation of Course Evaluation Inventory Form

38. The concepts emphasized on exams/papers were relevant
always 1 2 3 4 5 never
39. The number of exams/papers was
too great 1 2 3 4 5 too small
40. The exams/papers were
too long 1 2 3 4 5 too short
41. The exams/papers were
too difficult 1 2 3 4 5 too simple
42. The instructor graded fairly
always 1 2 3 4 5 never
43. The instructor returned papers promptly
always 1 2 3 4 5 never

VI. Content

44. The subject matter was intellectually stimulating
always 1 2 3 4 5 never
45. The subject matter was
up-to-date 1 2 3 4 5 outdated
46. The course should be given to students who are
more advanced 1 2 3 4 5 less advanced
47. Considering the credit-hours, the work required should be,
more 1 2 3 4 5 less
48. This course should be
required 1 2 3 4 5 dropped
49. I would like to take another course in this subject area
definitely 1 2 3 4 5 definitely not
50. Please write specific suggestions for improving the course, student participation and involvement, or instructor on this sheet.

Department . . . . . .
Course Number . . . . . .
Date . . . . . .

INDIANA UNIVERSITY
Student Evaluation of Instruction
I. EVALUATION OF INSTRUCTION

Please carefully evaluate the effectiveness of the teacher of this course. Place an "x" in ONE of the blanks under each of the major categories. (Comments may be extended to the other side of the sheet.

KNOWLEDGE OF SUBJECT MATTER *Comment*
..... Exceedingly well informed
..... Adequately informed
..... Not well informed
..... Very poorly informed

ATTITUDE TOWARD SUBJECT *Comment*
..... Enthusiastic, enjoys teaching subject
..... Rather interested
..... Only routine interest displayed
..... Uninterested

ABILITY TO EXPLAIN *Comment*
..... Explanations clear and to the point
..... Explanations usually adequate
..... Explanations often inadequate
..... Explannations absent or totally inadequate

SPEAKING ABILITY *Comment*
..... Voice and demeanor excellent
..... Adequate or average
..... Poor speaking distracting
..... Poor speaking a serious handicap

ATTITUDE TOWARD STUDENTS *Comment*
..... Sympathetic, helpful, concerned
..... Usually helpful and sympathetic
..... Avoids individual contact, routine attitude
..... Distant, cold, aloof

PERSONALITY *Comment*
..... Attractive personality; I would like to know him better
..... Satisfactory personality
..... Not an outgoing personality
..... Personality conflict

TOLERANCE TO DISAGREEMENT *Comment*
..... Encourages and values reasonable disagreement
..... Accepts disagreement fairly well
..... Discourages disagreement
..... Dogmatic, intolerant of disagreement

COMPARED TO ALL COLLEGE INSTRUCTORS YOU HAVE HAD, HOW WOULD YOU RATE THIS INSTRUCTOR AS A TEACHER?
..... Outstanding
..... Better than average
..... Average
..... Below Average
..... Poor

IF YOU COULD CHOOSE BETWEEN THIS INSTRUCTOR AND OTHERS IN A FURTHER COURSE, HOW WOULD YOU RATE YOUR PRESENT INSTRUCTOR?
..... Would prefer him/her to most teachers I have had at I.U.
..... Would be very pleased to have him/her again.
..... Would be satisfied to have him/her again.
..... Would rather not have him/her again.
..... Would not have him/her again under any circumstances.

THE REVERSE SIDE OF THIS SHEET MAY BE USED FOR FURTHER GENERAL COMMENTS

Do not sign name. Please indicate class standing.....

Major subject..... Approximate accumulative average.....

UNIVERSITY OF INDIANA

Please evaluate this particular section of this course.

ORGANIZATION OF THE COURSE *Comment*
..... Well organized
..... Adequate, but could be better
..... Inadequate organization detracts
..... Confused and unsystematic

ORGANIZATION OF DAILY LECTURES (OR CLASS WORK) *Comment*
..... Well organized in meaningful sequence
..... Usually organized
..... Organization not too apparent
..... Little or no organization

FREQUENCY OF TESTS *Comment*
..... Right number, well timed
..... Too infrequent
..... Too frequent
..... Timing should be improved

CONTENT OF TESTS *Comment*
..... Satisfactory
..... Too detailed
..... Not comprehensive enough
..... Wrong type of test for this course

OPPORTUNITY FOR QUESTION AND DISCUSSION *Comment*
..... Ample opportunity
..... Occasional opportunity
..... Rare opportunity
..... Never

ASSIGNMENTS *Comment*
..... Assignments clear and reasonable
..... Clear but too long
..... Unclear
..... Always unclear and unreasonable

TEXTBOOKS *Comment*
..... Textbooks good
..... Textbooks satisfactory
..... Use of text should be modified
..... Urge a different text altogether

WORK RELATED TO CLASS LEVEL *Comment*
..... Work suited to class level
..... Attempt made to suit class level
..... Work completely above class level
..... Work completely below class level

ON THE REVERSE SIDE OF THIS SHEET PLEASE MAKE SUGGESTIONS FOR IMPROVING THIS COURSE.

Do not sign name. Please indicate class standing .....
Major subject .....
Approximate accumulative average .....

University of New Hampshire
Merrimack Valley Branch

STUDENT EVALUATION FORM 101A

(To be filled out by supervising librarian at end of first 15 week work period)

NAME OF LIBRARY_____

NAME OF SUPERVISING LIBRARIAN (S)_____

NAME OF STUDENT_____

Would you kindly comment on the following areas of student performance as a trainee from the Library Institute during his work period at your library?)
Please use additional paper as needed.

1. Suitability for library work: (temperament, attitude, interest etc.)

2. Readiness to learn, adjustment to work environment, eagerness to try, etc.

3. Ability to learn: are there tasks for which the student seems more fitted than others? i.e. direct service to public, typing, cataloging support, book processing etc.

4. Your comments concerning student:

NEW CAREERS
JOB SITE EVALUATION

Name: _____ Class: _____

Job Site: _____ Date: _____

ATTENDANCE
(Attends work site)

- Regularly
- Most of the Time
- Irregularly
- Frequently Absent

PUNCTUALITY
(Arrives on time)

- Regularly
- Most of the Time
- Irregularly
- Frequently late

WORK PATTERNS

A— (Ability to work with peers)

- Very good
- Good
- Fair
- Poor
- Very poor

B— Accepts directions (from supervisor)

- Very good
- Good
- Fair
- Poor
- Very Poor

C— Accepts work assignments and cooperates with supervisor

- Readily
- Just accepts it
- Accepts with reluctance
- Puts up an argument

D— Completes work assigned (follow through)

- Regularly on time
- Mostly on time
- Often late
- Unsatisfactory

E— Initiative

- Excellent
- Good
- Fair
- Poor
- None

F— Quality of work (considering experience and training)

- Excellent
- Very good
- Good
- Average
- Poor

G— Interest

- Very good
- Good
- Average
- Poor

PERSONAL
(Appearance and grooming)

- Good
- Satisfactory
- Needs improvement
- Poor

Does Careerist show potential for supervising
(Pages, NYC'rs, other clerks)

- Very much
- Some
- Haven't had any opportunity to exercise

Arizona State University

Name _____ Semester _____

Year _____

LIBRARY TRAINING INSTITUTE
STUDENT PROJECT REPORT

Describe briefly the nature of the project you will be working on this semester.

Where will you be doing your project work?

Approximately how much time will you devote to your project?
(Hours/week; hours/semester; days/semester)

Please give the name, title, and address of the person who will supervise your project work.

Director's Comments: We allow our participants a great deal of latitude in defining a volunteer project for the semester. The attached form assures us that the student has identified a suitable project. At the conclusion of the semester we request the supervisor of the project to evaluate the participant's performance on the job. This information is in many respects a more *valid* assessment of a participant's potential than his academic course evaluation.

Arizona State University

INDIAN INSTITUTE — LIBRARY MEDIA TRAINING

EVALUATION QUESTIONNAIRE MAY 1972

Participant: _____

Interviewer: _____

I. Academic Plans

1. Do you want to come back to school next year?
2. Do you think you will have a 2.0 grade point average at the end of this semester?
3. If you don't have a 2.0 CPA, what might you do differently next year to remove deficiencies and get your average up?

II. Evaluation of 1971-1972 Institute

1. What has the Institute done this year that has been enjoyable or helpful to you?
2. How should we change the Institute next year to make it more enjoyable or more helpful to you or others?
3. What additional activities would you like to see next year:
   (a) in the regularly scheduled meetings?
   (b) in internship experiences?
   (c) other kinds of activities?

Director's Comments:

At the end of the year we conduct a debriefing interview with each participant. The participants' suggestions during this evaluation have been particularly rich in ideas for improving the quality of our program.

Arizona State University

Indian Library Media Institute

Progress Report:

Name _____ **Date** _____

1. Have you missed any classes since our last meeting?
   How many?
   Reason for absence?

2. Do you have any specific problems with any of your courses?
   Describe the problem:

3. Have you had any tests or written assignments in your courses during the last two weeks?
   Did you have difficulties on tests or in completing your written assignments?

4. Are you registered with E.O.P.?
   How many times have you sought E.O.P. tutoring since our last meeting?

5. Have you received any grades or test results since our last meeting?

   Subjects: Grades:

6. Have you worked on an internship project since our last meeting?
   Describe your activity?

7. Do you have any other problems that should be called to the attention of the staff?

COPY

ARIZONA STATE UNIVERSITY

TEMPE, ARIZONA 85281

EDUCATIONAL TECHNOLOGY
PAYNE HALL B-146

MEMORANDUM

TO: Dr. Sullivan, Mr. Crawford, Dr. Gerlach, Mr. St. Germaine, Ms. Burger

FROM: Norman Higgins

SUBJECT: Summary of Participants' Meeting, September 14, 1972

DATE: September 15, 1972

Staff attending: Norman Higgins, Carole Burger, Ellen Martin.

Indian Advisory Board attending: Bill DeHaas

Participants attending: Irma Barehand, Nellie Buffalomeat, Rita Ann DeHaas, Delpha Delaware, Debbie Drye, Helene Little, Stu[illegible]e, Frances Makil, Verna Masayesva, Theresa Savale, Lydia Whitey, James Winship, Joycelyn Smith.

The agenda for the meeting was outlined by Dr. Higgins. Suggestions for additions to the agenda were made by participants.

Stipends. Dr. Higgins reviewed participant standing for dependent stipends. There was a general discussion concerning pay periods. Debbie Drye expressed concern for the January pay period and it was explained that the total stipend amount is set, but that participants could elect a different time/amount pay period. There was a general discussion. The participants voted to continue with the same pay schedule.

Lydia Whitey suggested that the BIA might be able to hire a few participants during semester break. Mr. Cleo Crawford will be asked to explore this possibility and report to the group as soon as possible.

Summer was discussed. Dr. Higgins outlined a proposed project for paid internships during summer.

Tutoring. Bill DeHaas stated that a delay in a computer print-out listing students enrolled at ASU has delayed the start of the Indian Tutorial Program. Bill announced that students in Secondary Education, SS310, will work as tutors as part of their course requirements. The English Department will also provide tutoring service. Ms. Burger is working through the Dean's office to obtain a room for tutoring activities.

Internships: Projects for internships were discussed. Dr. Higgins stressed that student interest, and projects of an educational nature, are the primary considerations in selecting an internship experience.

Ellen Martin described the Material Evaluations project. The main objective is to see that materials used in schools accurately depicts Indians and their way of life.

Mary Ausman, director of the Instructional Resources Laboratory in Payne, was introduced by Dr. Higgins. The development of a picture file to be used by the IRL was suggested as a project. Mary announced that the IRL is open from 8:00 a.m. to 7:30 p.m. on Monday and Tuesday, and is open from 8:00 a.m. to 5:00 p.m. on Wednesday, Thursday, and Friday.

Bill DeHaas discussed the Indian Student Affairs work-study and counseling project.

Invited Guests: Dr. Higgins announced that travel pay and honorarium funds to $500.00 are available for guest speakers. Dr. Higgins emphasized the following order of priority for inviting speakers:

1) a library-media person
2) an educator
3) an Indian speaker

Nellie Buffalomeat suggested Vine Deloria, writer, as one possible speaker.

Future Meetings: Dr. Higgins asked for any suggestions for meeting activities. An interest in learning to operate AV equipment was expressed. It was suggested that photo-copying might be demonstrated. Another activity suggestion was that of visiting Hayden Library and seeing the Curtis Collection. It was also suggested that general photographic skills be taught.

The next meeting of the staff and participants is scheduled for 4:00 p.m. Thursday, September, 28, 1972.

Director's Comments:

We hold participants' meetings every two weeks. Each meeting is documented with the attached report.

These reports are distributed to: (a) participants who are unable to attend our meetings; (b) Co-director of the project; (c) local BIA area officer; (d) Chairman of University Indian Advisory Board; (e) Graduate assistant assigned to advise and counsel students.

These reports document the developments and changes in our institute.

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Glossary of Terms

ACCOUNTABILITY—The process of explaining the utilization of resources in terms of their contribution to the attainment of desired results (objectives).

BEHAVIORAL OBJECTIVE—Statement which describes precisely what a student will have learned or be able to do after completing a unit of instruction.

CIPP—(Context, Input, Process, Product) An educational evaluation model developed by Stufflebeam structured to emphasize the provision of useful information for judging decision alternatives.

CONTEXT EVALUATION—Provides information about needs, problems, opportunities in order to identify objectives.

COST EFFECTIVENESS ANALYSIS—A systematic process of comparing alternative actions with regard to the benefits to be gained as opposed to the costs to be incurred. A major activity of Operations Research.

CRITERIA—Pre-determined standards used in making judgments as to the validity of a program and its objectives.

CRITICAL PATH—Those activities which *must* be performed within a certain time period to complete the project or achieve the objective. In a network representation (Critical Path Method—CPM).

DELPHI—A long range planning technique which elicits and refines the opinions of individuals as to the probability of future events. In library planning Delphi has been used to query a variety of publics with respect to their view of the future as related to needs for library service.

EVALUATION—The process of providing useful information in planning and decision making for improved program effectiveness.

FEEDBACK—Data which can be either positive or negative but generally reports discrepancies between intended and actual operation.

GANTT CHART—A series of bars plotted against a time scale to show the beginning, duration, and end in time of a project segment. Together the bars make up a schedule for the whole program.

GOAL—A state or condition to be achieved which may be long range or even timeless, but provides a policy focus for setting objectives and program planning.

HEURISTICS—Knowledge gained from experience that is valuable for future planning.

INPUT EVALUATION—Provides information during the planning stages about the strengths and weaknesses of alternative strategies for achieving given objectives.

MBO—MANAGEMENT BY OBJECTIVES—A system characterized by staff identification of objectives, establishment of a plan to achieve them, and performance evaluation in terms of results in attaining them.

MILESTONE—A program event or task which is essential to the final completion of a project or an objective. A Milestone Chart provides a sequential list of tasks to be accomplished with an indication of how certain events are interdependent.

MODEL—A diagram to help structure the complexities of the decision making process into a logical framework.

NETWORK—A flow chart of plan showing all activities or tasks which must be accomplished to complete the project and/or reach the objective. Interdependencies of activities are shown.

OBJECTIVE—A state or condition to be achieved within a certain time frame that is measurable, specific, and attainable.

OR—OPERATIONS RESEARCH—A system using various mathematical techniques to provide management with logical data for decision making.

PERT—(PROGRAM EVALUATION AND REVIEW TECHNIQUE)—A system which seeks to reach objectives in the shortest possible time through utilization of a chart or graphic representation of the tasks or events to be completed. Usually showing three time estimates for each task: Optimistic (if all goes smoothly), Pessimistic (longest time, when major setbacks occur), and probable time. The PERT Chart is used to monitor and evaluate project status.

PPBS—(PLANNING, PROGRAMMING, BUDGETING SYSTEM)—A decision system for allocating resources for the accomplishment of high priority objectives rather than on a line item basis.

PROCESS EVALUATION—Provides information about the strength and weaknesses of a strategy during implementation, so that either the strategy or its implementation might be strengthened.

PRODUCT EVALUATION—Provides information for determining whether objectives are being achieved, and whether the procedure employed to achieve them should be continued, modified or terminated.