

PPBS: A Management Innovation

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PPBS, the planning-programming-budgeting system, is creating controversy. What is it? What will it do? What won't it do? Is it good or bad for Extension? This and the article by Stauber that follows discuss PPBS from different viewpoints, giving the reader some perspective on these questions. Solem and Werner stress the advantages of using PPBS in the decision-making process—in choosing among alternatives for achieving specified goals. They discuss the system in relation to cost-benefit analysis and systems analysis and the components (planning, program structure, budget). Stauber says PPBS means a lot of hard work and hard choices for Extension. And Extension may not have the choices of adopting or not adopting it. As a policy making tool, he says PPBS links planning directly to budgeting.

ALONG WITH the new language of PPBS will come new concepts in the management of Extension programs and the allocation of resources to Extension activities. The planning-programming-budgeting system (PPBS) should be regarded by Extension personnel at all levels as a new and exciting tool to be used in the development, management, and evaluation of Extension programs.

The special attraction of PPBS for Extension personnel should be in the development and evaluation of new alternatives or new courses of action for achieving specific Extension goals. Many Extension programs have not been subjected to the thorough review provided by "systems analysis." Every Extension administrator wants to do more than his resources will allow. PPBS will help that administrator make choices between competing programs.

Those who master the concepts, learn the techniques, and begin the process of implementation will benefit both in terms of the quality of their own programs and in the amount of scarce resources allocated to them. PPBS is best thought of by the Extension administrator as a package of techniques for assisting in the allocation of

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resources, management of programs, and evaluation of total Extension effort.

Basic to PPBS is the development of very specific objectives for the organization and the structuring of programs to meet these objectives. This is accompanied by the development of analytical studies to identify alternative means of reaching objectives, their costs versus their benefits, and the development of a management information system that will assist program administrators in determining how well they are doing what they set out to do. Given the objectives, the programs, and the analyses developed, those responsible for resource allocation among competing programs (in both administrative and legislative roles) will have their decision process sharpened and the total resources available to the organization will be more effectively used.

ELEMENTS

Henry Rowen of the Rand Corporation defines the essential elements of PPBS as:

1. A careful specification and a systematic analysis of objectives.
2. A search for the relevant alternatives, the different ways of achieving the objectives.
3. An estimate of the total costs of each alternative, both direct and indirect costs and those to which the alternative commits us for future years, both dollar costs and those costs that cannot be measured in dollar terms.
4. An estimate of the effectiveness of each alternative, of how close it comes to satisfying the objective.
5. A comparison and analysis of the alternatives, seeking that combination of alternatives that promises the greatest effectiveness, for given resources, in achieving the objectives.¹

Planning

PPBS as a management tool offers real opportunities for administrators at all levels within Extension and the total university in improving total program effectiveness. Special attention should be given to the opportunity to develop a new mix of program techniques and education media. This opportunity will only come to those who carefully develop objectives, stated in operational terms.

¹ *The Planning-Programming-Budgeting System: Progress and Potential, Hearings Before the Subcommittee on Economy in Government of the Joint Economic Committee* (Washington: U.S. Government Printing Office, September, 1967) p. 185.

The first requirement is *planning*. This can be subdivided into identifying current objectives, developing criteria, determining needs, and establishing current goals. This planning process should improve the information system and internal management by developing objectives to guide the decision-making process. Some of the planning factors to be considered include the level of national income, taxes, resources, and population projections for several decades. The planning function must be output-oriented and related to the objectives of the total organization to prevent possible conflict with inter-program development. Ideally, a high governmental unit should develop these long-run projections to limit the inconsistency of separate program goals and criteria.

Program Structure

The second requirement of the PPB System is the development of a program structure to meet the planned objectives. Once the goals have been established, each agency must form into programs all projected activities related to these objectives. Without quantifying objectives in the planning stage, however, it is impossible to establish exactly the effectiveness of a program and to rationally choose between alternatives. The PPB System emphasizes, first, the identification of needs and the development of objectives and, second, the program analysis for solution of these needs.

The purpose in building a program structure is to provide the decision maker with an objective-oriented framework to facilitate the analysis of programs. The program structure becomes a series of output-oriented categories which encompass all the activities of the governmental unit. A program category or a group of agency activities should serve the same broad objectives. A program subcategory division and further sub-units are helpful in understanding the relationships of all the operations. Each program element is an integrated activity which combines the personnel, equipment, and facilities (inputs) to one specific output within the program category.

An example should clarify this. A city could have a health program. A program subcategory would be "prevention of communicable disease" and an element of the program would be the health department's vaccination unit. Under the program subcategory of "treatment" would be hospital care. For analysis and comparison, the element of vaccination would be compared to the element of hospital care for patients. Analysis would determine the rate of financial savings for an additional dollar spent in vaccination compared to the cost (space, labor, medicine) of hospital care.

Budget

The major element of the PPB System is the budget document. Since PPBS is quite new, federal agencies which have been applying the system have faced many problems. One problem has been the power of political realities and Congressional preference for the traditional one-year line budget. The "budget crosswalk" document translates the PPB budget into total dollar costs for the same fiscal year—with the costs for achieving each objective identified. As the output of the PPB System, however, the agencies have developed the "program and financial plan" which provides both outputs and costs on all of the agency's programs. The first year of the PPB System is the year of the current budget and provision is made to reveal the program costs for subsequent years.

The last item in the PPB System can be included as a part of the budget. This is the review-analysis and evaluation of the entire process. By requiring a regular review of each program, including cost effectiveness studies and examination of alternative programs, the PPB System will improve its operation. The result will be an examination of the costs of each program to see if it is reaching its objectives. If benefits received are close to those estimated earlier, the decision making was successful—the administrators have concentrated on those programs which reach the given goals with a minimum of resources expended.

CONFLICT

A PPB System will not necessarily reduce the conflict there now is within every organization as to how resources ought to be used. Conflict will now be over the output of government programs rather than the inputs—the number of people, typewriters, or mileage allowance. With PPBS, conflict will come when what we are to do and how well we are to do it is determined. Today, if more money is allocated to the government, it is spread to several programs on an incremental basis. Each program gets a little bit more, an increment, than it had before, with no determination made as to the effectiveness of the program or the overall need for the particular program objective.² This satisfies everyone and solves no problems.

An economist would plead for some examination of the functions of the state government, education, protection of property, health, income, and welfare. The political leadership should outline the

² To find comments on incrementalism in budgeting see Aaron Wildavsky, *The Politics of the Budgetary Process* (Boston: Little, Brown and Co., 1964), pp. 14-15.

major problems of the state and set the priorities, whatever they might be. If the first priority is the education of the population to reduce poverty and sickness, this would imply an increase in the expenditures in these areas and a concentration of effort in these programs. An improvement in health would imply the building of more hospitals, the testing of people for certain communicable diseases, the education of more doctors, or similar activities. The examination within program areas would be the special technical job of the economist and analyst; given that we want to reduce VD incidence from point Y to point Z, how can it be done? The examination of alternative programs (education vs. health vs. parks and recreation) would be the role of the political leadership of the state or political unit.

COST-BENEFIT ANALYSIS

Through the adoption of PPBS, some of the tools of the economist are being applied to the decisions made in the public sector. The economist is concerned with the allocation of resources to competing demands. As part of the program examination it might be well then for administrators to examine the alternatives to meeting the needs of the people.

In some cases an activity must be carried out under conditions of political necessity. The role of the analysis then will be to find the set of programs which reach the target while minimizing the use of resources. In other cases the program to be chosen might involve a trade off between targets or specific target groups. Basic Extension activities (e.g., off campus courses for credit) would be an example of a minimizing situation. Here the analysis would attempt to show the mix of educational media and techniques that would provide the acceptable level of program effort with the minimum amount of resources. If teaching off campus by TV tape is X per cent less effective in terms of student performance, but a significant increase in total numbers of students can be obtained with modest increases in cost so that the total cost of the program is minimized, this may be the preferred alternative. In cost-benefit analysis or cost-effectiveness studies, there is a thicket of problems to be considered, including secondary benefits, the length of project life, and the choice of the proper discount rate.³

³ A. R. Prest and R. Turvey, "Cost-Benefit Analysis: A Survey," *Surveys of Economic Theory*, III (New York: St. Martin's Press, 1966), 155-207. Also see R. N. McKean, *Efficiency in Government Through Systems Analysis* (New York: John Wiley and Sons, 1958).

In a study of the benefits and costs of Extension education, it should be possible to demonstrate cost benefit ratio for most activities. A part of costs would be the teachers' salaries, supplies, and interest and depreciation on capital. Other costs would be the private tuition cost and the incidental cost to the individual, including costs of travel and books.

The benefits to the individual and to society are measured in the increased incomes to participants in the courses. This can be estimated by data from local sources or imputed by using national data. Obviously it is not proper to credit *all* increased income to additional education, but this might suggest the types of education that will have a high payoff to the individual. This could include education that results in a high school certificate or training in a specific trade. Secondary benefits are those that accrue to society at large from the education of a given person, and to estimate them will require some staff capability. Those educators that attempt to demonstrate the unique worth of their projects on the basis of the contribution to overall society (the intangibles or the secondary benefits) will have a difficult time.

The length of the project life will probably not be a great consideration in Extension work, but it might be a consideration in comparing a new system of teaching (as a TV tape) with the teacher role. The life of the equipment will be one of the crucial estimates to be made. Another consideration will be the selection of a discount rate for discounting the stream of benefits; usually a low rate favors long lived capital with future benefits; a very high rate would favor systems with an immediate payoff and low capital use.

SYSTEMS ANALYSIS

An important part of PPBS is systems analysis. It is a methodology, a way of looking at problems of choice under conditions of uncertainty. As a methodology, it demands as its first step a very clear statement of organizational goals or objectives. These objectives must be stated clearly and operationally—in terms of the things done to meet objectives.

The notion of a system and its analysis implies that if the objectives, the means, and functional responsibilities are specified, the task can be performed more efficiently. The system components can be arranged so that compatibility and purposeful performance can be achieved by organization and adjustment of system components.

The concept of a system and the analysis of the components and their relationship to the total system is a skill that all Extension

staffs must begin to develop. A county director looking for a topic for his next administrative conference would do well to forget about rehashing the intricacies of the expense account forms and spend a day in a systems analysis workshop. He might even forego the administrative manual and spend some time on Stanford Optner's excellent little book, *Systems Analysis for Business and Industrial Problem Solving* (Prentice-Hall Inc., 1965).

Systems analysis demands a multi-discipline approach to the problem. A systems analysis team ought to include economists, sociologists, political scientists, as well as the program experts of Extension. In many ways, the county staff of Extension is a systems analysis team, if its members can just be taught to look at their problems in an analytic, systems-oriented way.

Using the operationally defined statement of objectives, systems analysis then proceeds to examine the alternative ways of achieving these objectives, the costs of the various alternatives and the benefits obtained as applied to costs.

Given the necessity for quantifying objectives for educational programs, the most immediate payoff for systems analysis in Extension today may well be in the area of identifying new alternatives. The challenge of PPBS and systems analysis for Extension is in the imaginative application of the techniques of systems analysis, a consideration of the interaction of all the sub-systems, the extension of the boundaries of the system, and the identification of new alternatives.

A fundamental requirement of systems analysis is that it be open and explicit. This means that assumptions, calculations, data, and judgments are laid bare for both proponents and opponents of policy to examine. Obvious errors, inconsistencies in analysis, and faulty data are easily identified by friend and foe alike.

Systems analysis should be oriented to outputs rather than to the inputs of Extension programs. Expenditures must be tied to specific goals. The analysis should not be oriented only to inputs such as conferences, short courses, workshops, bulletins, staff time, and media. These are not goals in themselves, but only instruments to achieving goals. Extension agencies will be forced to shift attention away from traditional and often beloved instruments. They must focus on explanations of their objectives rather than their means. If the analysis indicates the beloved instrument is of little utility in meeting the defined objective, then the analysis will have been worth the effort.

Extension, as well as the total university, must begin to evaluate the benefits of the various techniques used in its programs. Some

form of media or format evaluation will have to be a part of an Extension PPBS effort, and in fact should be done without PPBS. The introduction of much of the new educational equipment into the Extension effort comes at a time when it can be evaluated by a PPB System. It may be that the cost of an additional agent could better be allocated to the development of an effective programmed learning text, a loop film, or an imaginative TV tape.

SUMMARY

Extension programs are not unique. Their effectiveness must be demonstrated in comparison to the other programs of government and of the university. When Extension activities make a claim to the resources of the economy, they must demonstrate their usefulness.

The importance of PPBS for the future cannot be overemphasized. PPBS is an important decision-making and management tool of real use to Extension activities. More and more, Extension will be asked to illustrate its usefulness to the society it serves. PPBS will assist in showing what is useful, what is wasteful, and will assist in the management of the change that is taking place in the mix of programs of Extension throughout the nation.

There is a variety of good explanatory literature on PPBS that Extension personnel should begin to read. Some has already been mentioned. Others follow:

Introductory Readings

Allen Schick, "The Road to PPB: The Stages of Budget Reform," *Public Administration Review*, XXVI (December, 1966).

F. J. Lyden and Ernest G. Miller (eds.), *Planning, Programming, Budgeting: A Systems Approach to Management* (Chicago: Markham Publishing Co., 1967).

Harry P. Hatry and John F. Cotton, *Program Planning for State, County, City* (Washington, D.C.: The George Washington University, 1967).

PPBS Symposium, *Public Administration Review*, XXVI (December, 1966).

Systems Analysis

S. L. Optner, *Systems Analysis for Business and Industrial Problem Solving* (New Jersey: Prentice-Hall Inc., 1965).

Richard A. Johnson et al., *The Theory and Management of Systems*, 2nd Edition (New York: McGraw-Hill Book Co., 1967).

Cost-Benefit Analysis

Robert Dorfman (ed.), *Measuring Benefits of Government Investments* (Washington: Brookings Institution, 1965).

S. B. Chase, Jr. (ed.), *Problems in Public Expenditure Analysis* (Washington: Brookings Institution, 1968).