DOCUMENT RESUME

ED 040 673 HE 001 580

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TITLE Systems Analysts in Higher Education: Some Concerns.
INSTITUTION American Association for Higher Education, Washington, D.C.
PUB DATE 2 Mar 70
NOTE 3p.; Paper presented at the 25th National Conference on Higher Fducation, Chicago, Illinois, March 2, 1970

EDRS PRICE EDRS Price MF-$0.25 HC-$0.25
DESCRIPTORS Administrator Role, Cost Effectiveness, *Educational Planning, Financial Problems, *Higher Education, Management Systems, *Planning, *Problems, Resource Allocations, *Systems Analysis

ABSTRACT

This paper focuses on the concerns associated with the use of systems analysis in higher education. One fear is that systems analysis will increase the need for centralized authority and highly structured activity, thus contributing to further alienation and dehumanization. A second objection pertains to the increased requirement for specifying objectives and subsequently measuring the performance and outputs. A corollary concern is that unintended effects of the educational process may go unnoticed by the rigid systems which is designed to handle only major factors. Another concern is that systems analysts will impose their values on the institution through their design of various managment systems. A major problem is the cost involved in the whole area of scientific management applied to higher education. And finally, there is the danger of substituting technique for sound, wise planners. In order to make effective use of systems analysis, it is important that planners remember the interlocking relations of systems, that administrators be involved in developing the systems, and that administrators remember the primary function of institutions of higher education is learning and student development. (AF)

Group 13
Monday Morning, March 2

SYSTEMS ANALYSTS IN HIGHER EDUCATION: SOME CONCERNS*

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Following a considerable length of time spent reviewing related literature, discussing the topic with colleagues and searching my mind; I have come to believe that there needs to be a critical view taken of new efforts to use systems analysis in the management of institutions of higher education. Therefore, I have decided to play the role of devils advocate in this speech.

This focus on the concerns associated with the use of systems analysis is offered by a person supportive of the systems approach and most of its various techniques. While this discussion should not imply rejection of systems analysis, it should challenge its supporters to be sure they are developing real and useful techniques which will perform some current function better. I will not direct this discussion specifically at the concept of planning, programming and budgeting systems; however, I have chosen only those concerns which apply to any general use of systems analysis in higher education.

One current concern expressed in some quarters views increased systematizing as alienating and dehumanizing. The students and some faculty groups express displeasure with the unresponsiveness of present administrative machinery. Likewise, the great concern appears to be a fear that systems analysis will increase the need for centralized authority and highly structured activities. These requirements for central authority and tight structure appear to contradict the life styles of contemporary young. In fact, there is violent reaction against structure and authority depicted by the exotic patterns of behavior as well as the demands for new forms of governance. It is argued that further use of systems analysis will eventually require even greater centralization of authority which will be more dehumanizing and alienating.

A second important objection to system analysis pertains to the increased requirement for specifying objectives and subsequently measuring the performance and outputs. Most of the recent efforts in modeling and programmed budgeting require of the educator an explicit statement of objectives, usually in some measurable terms. The concern raised here is voiced primarily by educators. They believe that not all worthy objectives of education can be studied quantitatively. Furthermore, the educator also believes that many goals of education are difficult if not impossible to identify. This argument is similar to the debate surrounding the notion of stating educational objectives in behavioral terms as advocated years ago by Ralph Tyler. The fundamental question pervading this issue seems to be: Is only that which is quantifiable and observable worth consideration in educational planning. For instance, how shall we quantify the goals of aesthetic experience and a life of quality.

*Paper presented to Discussion Group 13 on "Program budgeting and systems analysis: Promise and problems" at the 25th National Conference on Higher Education, sponsored by the American Association for Higher Education, Chicago, Monday, March 2, 1970. Permission to quote restricted.

A corollary to this concern is the fact that unintended effects of the educational process go unnoticed by the rigid system which is designed to handle only major factors. An interesting analogy might be the heretofore unintended effects of industrialization and automation on our physical environment. We have recognized rather late in this process that the single-minded pursuit of one goal is not necessarily healthy.

Another concern is that systems analysts will impose their values on the institution through their design of various management systems. For instance, ever since the introduction of planning, programming and budgeting systems in the Department of Defense, uniformed military planners have complained that their inputs were often neglected or disregarded. To transfer this concern to education, it seems to raise the question of how college and department level academic decision makers will retain an influence in institutional planning. Also connected to this point is the concern that systematic analysis limits the sources of innovation and stifles creativity and spontaneity in educational planning. The futuristic writing being published today seems to imply that we are rushing headlong into a large, overly systematized, machine governed era. That thought is somewhat frightening if we consider that higher education may be contributing to the trend rather than resisting it.

An area of great concern for administrators and perhaps even the systems designers is the cost involved in this whole area of scientific management applied to higher education. The cost of computing facilities necessary to support complex modeling and simulation are extremely high. Likewise, the personnel needed to develop, operate and maintain these systems are typically advanced degree holders and expensive. A problem related to personnel is the acute shortage of qualified people since their marketability is extremely high.

When computers were first used for administrative purposes in higher education a frequent justification was that these facilities would be labor saving and hence cost saving. I would hazard the guess that few if any institutions have been able to demonstrate cost saving. Now, we have legislatures, governing boards and the federal government requiring cost savings and more accountability.

One response is: new systems analysis procedures like programming budgeting will give us more control of resources, hence more savings and accountability. Again, I believe this response is short-sighted on two counts. First, sooner or later, large computing facilities will be required with a sizable cadre of highly paid staff to support its operation. Furthermore, it appears that to effectively utilize some of the current planning models, expensive consultant fees may be in order. Secondly, price estimates are usually only start up costs and projected operating costs which cannot account for the unanticipated costs which will inevitably occur. Thus, institutions considering the further use of systems analysis procedures such as programmed budgeting, modeling and simulation should consider the long run benefits and the cost before committing limited resources particularly at small colleges and universities where there is a minimum of existent facilities and technical expertise.

Another aspect of the problem of cost is raised by the concept of cost benefit analysis or cost effectiveness analysis. Embodied in the basic design of program budgeting is the need for cost benefit analyses of alternative courses of action in program planning. What seems at issue here is whether or not cost benefit analyses are themselves cost effective. In other words, perhaps educational planning has not really been that bad and by a cost criterion we have nothing to benefit from a more complex technique. This criticism is somewhat like the idea of driving across town to a fancy new supermarket to save 15¢ on one

special sale item.

Finally, one fundamental problem has arisen from the use of systems analysis in higher education and I would suspect many other organizations as well. I believe we are so enamored with techniques, particularly when they are computer related, that we often lose sight of the reason for the technique in the first place. Haven't you heard of the person who can show you the fact printed on computer output? It is somewhat like the effective job we all do on Saturday afternoon's as side line quarterbacks. It must not be forgotten that basis to a PERT chart, model, output report and so on is a person who created it and others who must exercise wisdom in the management of their particular institution. Hence, technique cannot be substituted for sound wise planners.

As a summary, I would like to suggest some requirements which must be met in order that effective use be made of any of the techniques of systems analysis. First, systematic planning cannot exist in a vacuum. The planners must remember the interlocking relations of systems. Financial problems cannot be solved without considering space and staff. Staff cannot be considered without concern for students. Programs cannot be considered separate from facilities.

Secondly, systems analysis and program budgeting requires the direction, involvement and commitment of administrators who will use the developing systems. The analysts who are unfamiliar with the educative process simply cannot do the job alone. Thus, a dialogue must be established between the analysts and educators.

Thirdly, in educational planning or problem solving administrators must consider congruence of functions. That is, the primary function of institutions of higher education is learning and student development. When and if that becomes secondary in planning, we have lost sight of our most commendable goal.