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ABSTRACT

The basic premise of this paper is: if current management and fiscal problems are to be solved in higher education, planners and decisionmakers must adopt an outcome-oriented approach to planning. In the past, most planners have tended to be means-oriented, focusing more attention on problems associated with the course of action being followed and less on the end results to be achieved. It is argued that planners should begin focusing on the desired, expected, and actual outcomes of programs as they relate to the planning process. Although an outcome-oriented approach to planning should be beneficial, it is not without its problems. Among the problems discussed are that of reaching consensus on institutional goals and objectives, the lack of variance problems in attributing outcomes to institutional and program effects, the need for a greater variety of criterion measures, and the problems of couching all outcomes in terms of measurable criteria. In this paper, the authors do not seek to advance outcome-oriented planning as a cure-all. Rather, they have devoted a major part of this paper to discussion of the problems associated with this suggested approach. On the other hand, they do not view these problems as insurmountable. Accordingly, the final section of this paper discusses possible lines of future research that may facilitate the implementation of outcome-oriented planning. (Author/PG)

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OUTCOME-ORIENTED PLANNING

OUTCOME-ORIENTED PLANNING IN HIGHER EDUCATION: AN APPROACH OR AN IMPOSSIBILITY?

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June 1973

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ABSTRACT

The basic premise of this paper is: if current management and fiscal problems are to be solved in higher education, planners and decision makers must adopt an outcome-oriented approach to planning. In the past, most planners have tended to be means-oriented, focusing more attention and energy on problems associated with the course of action being followed and less on the end results to be achieved. It is argued that planners should begin focusing on the desired, expected, and actual outcomes of programs as they relate to the planning process.

Although an outcome-oriented approach to planning should be beneficial, it is not without its problems. Among the problems discussed are that of reaching consensus on institutional goals and objectives, the lack of variance problem in attributing outcomes to institutional and program effects, the need for a greater variety of criterion measures, and the problem of couching all outcomes in terms of measurable criteria.

Several research directions and projects are suggested. First, it is obvious that an overview of the outcomes problem is necessary. Such a synthesis would include a review of cause and effect as well as descriptive outcome studies, an overview of the research on the outcome information needs of various kinds and levels of decision makers, and a review of evaluation methodologies previously used to assess outcomes in higher education. Specific subsequent research projects might include: (1) an analysis of the inconsistencies among the value systems of the various decision-making

groups in higher education, (2) an analysis of the conflicting information needs of the different kinds and levels of decision makers, (3) a critical assessment of the propriety of general, overall evaluation methodologies, (4) the compilation of standardized instruments for the measurement of outcomes, (5) the development of lists of outcome indicators, and (6) the critical review and refinement of techniques for analyzing the relationships among environmental constraints, student and institutional resources, and educational outcomes and benefits.

PREFACE

The financial difficulties of the institutions of higher education in the United States are well known. In 1971, the Carnegie Commission estimated that 61 percent of all institutions were either in financial difficulty or headed for it (Cheit, 1971). In a follow-up study it was found that some sectors of the higher education community had achieved some degree of financial stability. However, such stability certainly was not ubiquitous and was considered fragile where it had been achieved (Cheit, 1973). It is not the purpose of this paper to debate the multitude and complexity of the causes of such problems. Rather, we suggest that planning in higher education (the complex process of establishing goals, evaluating alternatives, and allocating scarce resources for certain returns) can be improved by taking an "outcome-oriented" (as opposed to a means-oriented) approach to the problem. Indeed, this change is being demanded by those who control the funds for higher education.

In this paper, we do not seek to advance outcome-oriented planning as a cure-all. Rather, we have devoted a major part of this paper to discussion of the problems associated with this suggested approach. On the other hand, we do not view these problems as insurmountable. Accordingly, the final section of this paper discusses possible lines of future research which may facilitate the implementation of outcome-oriented planning.

Many people deserve special mention for their labors in connection with this paper from its earliest versions. First and foremost, we would like to acknowledge Dr. Robert Fenske of the American College Testing Program and Dr. Rodney T. Hartnett and Dr. Robert Linn of Educational Testing Service for their substantive contributions and critical reviews of the paper. We would also like to thank Alice Irby, formerly with Educational Testing Service and now Vice-President for Student Affairs at Rutgers University, Dr. James Robbins, professor of Communications and Theatre at the University of Colorado, and Dr. Robert Wallhaus of the NCHEMS staff for their contributions.

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INTRODUCTION

Most college and university decision makers today are keenly aware of the pressures confronting higher education: the shifting demands concerning the number and kinds of educational goods and services, the increasing costs of providing these goods and services, and the increasing inability of higher education to deal effectively with its fiscal problems. Because of the magnitude of these pressures, which have affected virtually every institution in higher education, decision makers are recognizing the need for improved planning. They are also recognizing the need to demonstrate that the outcomes of their programs are in keeping with the needs of different constituents. Prior to the emergence of these pressures, decision makers felt little need to obtain and use outcome information for planning and accountability. There are several reasons for this.

First, historically, institutions have enjoyed almost unlimited moral and financial support, and at the same time they have been afforded considerable autonomy in their operations. As a result, compared to private industry, higher education has not felt as much pressure for accountability in the use of resources.

A second reason for this state of affairs is that decision makers in higher education--and in other areas as well--are often means-oriented in their planning and evaluation efforts rather than ends- or outcome-oriented. That is, they appear to react to problems and crises with more concern for

what is wrong with the course of action being pursued--the means--and with less concern for what is to be achieved--the ends.

A third reason is that past decisions have been based almost exclusively on historical input, cost, and activity data, with little or no information about the outcomes and benefits derived from their institutions and programs. Historically, money has been allocated largely on the basis of enrollments, number of graduates, and other quantitative measures related directly to costs rather than outcomes. However, these costs have seldom been evaluated in terms of achieving measurable goals or differential effectiveness. Consequently, it has simply been presumed that the outcomes produced by higher education programs have satisfactorily met individual and societal needs and expectations.

Although most decision makers today recognize the necessity for a better understanding of the quantitative as well as the qualitative outcomes of higher education programs, they are quick to point out the problems involved. First, the specific desired outcomes of programs are difficult to identify and agree upon because the goals and values of individuals and institutions differ. Second, even when desired outcomes or objectives are identified and consensus is reached, few explicit criterion measures or indicators of program effectiveness are available. Finally, in cases where planners and decision makers have data about the outcomes of programs, they have much difficulty interpreting the data, since procedures for analyzing and using the information are not adequate. Such difficulty can be attributed to a host of factors: the complexity of higher education systems, the multiple and joint products

of programs, the unintended side effects of certain programs, the paucity of adequate statistical techniques for effective data analysis, and the lack of sufficient data bases for interprogram and interinstitutional comparison.

The problems associated with obtaining and using outcome information for planning and accountability are legion; however, it is not the purpose of this paper to attempt a comprehensive discussion of all such problems. Instead, this paper attempts to describe a framework for an "outcome-oriented" approach to planning, a foundation for explaining and justifying the outcomes of institutions and programs. Some of the obvious and not-so-obvious difficulties inherent in such an approach are discussed, and certain actions are suggested which may facilitate the implementation and acceptance of such an "outcome-oriented" approach to planning in higher education.

AN OUTCOME-ORIENTED APPROACH TO PLANNING IN HIGHER EDUCATION

Planning is generally conceived to be a continuous process that involves the establishment of goals, the recognition and assessment of a number of alternative courses of action, the selection of those courses of action that will yield the most return on an investment, and the establishment of mechanisms for evaluation and feedback. This conception holds whether an individual planner or decision maker is means- or outcome-oriented. The unique characteristic of an outcome-oriented approach to planning is that an explicit understanding of the outcomes of a higher education institution or program is emphasized in each phase of the planning process to facilitate both communication and comparison.

The goal setting step emphasizes the translation of institutional and program goals, which often are broad and philosophical, into desired measurable outcomes terms. This is necessary to comprehend clearly the specific end results and benefits to be achieved.

The program selection step emphasizes an understanding of the expected outcomes of each alternative program being considered. A result of this understanding is that the expected outcomes of each alternative program can be compared with the set of desired outcomes identified in goal setting; ideally, the alternative that most closely meets the desired outcomes can be identified. Of course, the selection decision will also be based on resource constraints.

The final step of the planning process, program evaluation, stresses understanding and measurement of the actual outcomes that result from implemented programs. Once the actual outcomes are determined, they can be compared with the desired and expected program outcomes that were determined earlier in the planning cycle. These comparisons help answer such questions as: Did the program meet the established goals? Did the program accomplish what it was expected to do? Answers to these questions serve to raise further inquiries about why certain outcomes did or did not occur. This information is valuable to institutional planners and decision makers for demonstrating program success over one time period and making decisions in subsequent planning periods about the appropriateness of the established goals (desired outcomes) and the need for new programs or changes in continuing ones.

This approach to planning based on an understanding of outcomes appears straightforward enough. However, there are certain prerequisites that must be met if such an approach is to bear fruit.

The Need for a Comparable Outcomes Terminology

A comparable outcomes terminology is essential to outcome-oriented planning, since the process continually emphasizes not only an understanding of the desired, expected, and actual outcomes of programs, but also a comparison. As a result, desired, expected, and actual program outcomes need to be stated in the same observable and/or measurable terms. This objective can

be accomplished by using descriptors and measures of the actual outcomes of institutions and programs as the comparable outcomes terminology. Then by conducting an "outcome translation" in the goal-setting and program selection phases of outcome-oriented planning, the desired and expected outcomes can be translated into actual outcome terms. The following discussion illustrates how an outcome translation process functions in each phase of the planning process.

Ideally, goal setting begins by assessing the compelling national, state, or local needs in terms of the established philosophy and missions of the institution. Then, on the basis of the assessment of constituent needs, goals should be formulated as clearly as possible. The goals should then be translated into specific, measurable outcome terms. In this last step of the goal-setting process, the outcome translation activity mentioned above is conducted to identify the specific actual program outcomes that reflect the formulated goals. The result of the outcome translation is that the actual outcomes identified as reflecting the established goals become the desired outcomes.*

The program selection phase of planning has as its basic purpose the identification and comparison of alternative programs for achieving the

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*For an example of an attempt to construct inventories of educational outcomes and measures related to higher education programs see the appendices of Micek and Wallhaus (1973).

desired outcomes specified in goal setting. To facilitate program selection, the goals of each alternative program under consideration must be translated into comparable outcome terms. This can be accomplished through the outcome translation process. The advantage is that the goals of each alternative are now stated in actual outcome terms, which are referred to as expected outcomes. These expected outcomes can then be hierarchically ordered (ranked or weighted) for each alternative and compared to a hierarchical ranking or weighting of the established desired outcomes. At this point, judgments must be made concerning the alternatives that best correspond to the ordered list of desired outcomes. Obviously, some alternatives will be eliminated immediately because they are economically or politically too costly. Ultimately, the process of elimination should narrow the number of alternatives to just a few. The final selection must be made subjectively.

In the program evaluation phase of outcome-oriented planning, two major types of analysis are carried out. The first type concerns an analysis of the measured actual outcomes of the program. Obviously, this analysis is facilitated by the fact that the desired and expected outcomes have been stated in the same terms as the actual outcomes. The second type of analysis focuses on why a discrepancy occurred or did not occur. Once these analyses have been made, information from this part of the planning process can be fed back into future planning efforts, and judgments can be made concerning the continuation, modification, or replacement of programs being implemented as well as the selection of new alternatives for satisfying new goals and objectives.

The Components of a Higher Education "System" in a Planning Context

Another key requisite for achieving the benefits of planning based on outcomes information is the consideration of the interrelationships among the components of the particular higher education institution or program being studied. Understanding these components is important, since on the one hand the components shape and condition the planning efforts, while on the other, planning attempts to shape the components to a greater or lesser extent. In addition to the outcomes component, a conceptual model of an institution or program should at least include: the inputs, the educational process itself, and the institutional environment in which the process occurs. Furthermore, the inputs could be conceptualized as consisting of both institutional resources (physical, financial, and faculty/staff) and student resources (intellectual, attitudinal, and financial).

The interrelationships among these components are complex. The inputs affect the environment in many ways (e.g., the construction of new buildings, the sex mixture on campus) and also affect the educational process (that is, the number of students, for example, might dictate what type of instructional mode would be most effective). The process and the environment also interact (for example, the educational process possibly may attract certain types of students and faculty while the environment places constraints on the process). In addition, the outcomes of the system can affect the inputs in future time periods (such as the attraction of a different kind of faculty, or the achievement of greater financial stability).

The relationship between planning and any conceptual model of a higher education "system" (e.g., an institution, program, course) is clear if one realizes that an essential phase in planning is the choice of a single program from among a number of alternatives. In order to make a choice the decision maker must have a way of differentiating among programs. Programs can differ on the inputs required, the process by which certain outcomes will be achieved, and the institutional environment necessary for the implementation of the program. In short, programs can differ with respect to each of the components comprising a conceptual model of higher education, and these differences must be considered in outcome-oriented planning.

Relationship of Outcome-Oriented Planning to Accountability

In the present discussion of the requisites for implementing this outcome-oriented approach to planning, it is important to discuss its relationship to the demand for accountability. Outcome-oriented planning has a major advantage in that the outcome information obtained for internal planning purposes may help provide part of the information needed by decision makers to explain and justify their programs to various constituents. An important consideration, however, is that the outcome information preferred by certain constituents for their planning decisions will often differ from that preferred by others. The main reason for this is that the perspectives and decision situations of different kinds of decision makers vary. For example, college administrators and state legislators may both value information about

the "specialized knowledge" of students. However, the administrator might view scores on special standardized tests as the best measure of this outcome variable, while the legislator might consider the job performance of former students in their major field of study as the best measure of this variable.

PROBLEMS IN MEASURING HIGHER EDUCATION OUTCOMES*

While some of the requisites and advantages of an outcome-oriented approach to planning have been touched on, many difficulties hinder implementation. In particular, there are the problems associated with obtaining reliable information about the differential outcomes or impacts of higher education institutions and programs. This section of the paper discusses several of these problems in some detail, since solutions must be identified if outcome-oriented planning (and educational accountability) is going to be implemented effectively.

The Problem of Defining and Assessing Institutional Goals

Earlier it was argued that any evaluation of an institution's effectiveness must be based on an institution's goals (and preferably goals that have been

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*The authors are indebted to Dr. Rodney T. Hartnett of Educational Testing Service for his contribution to this section of the paper, which paraphrases part of a publication by Dr. Hartnett entitled Accountability in Higher Education: Some Problems in the Assessment of College Impacts. It should be noted that although Dr. Hartnett's paper has been published by the College Entrance Examination Board, it was originally written for inclusion in this paper.

translated into desired outcome terms). The problem, of course, is that too few institutions have really considered what their goals are, and those that have often find that the various members of the college community disagree over what the purposes of the institution should be. For example, studies by Gross and Grambsch (1968) and the Danforth Foundation (1970), which surveyed faculty and administrators, reported marked differences between the perceived institutional goals and the institutional goals that would be preferred.

At least one recent study attempts to construct an inventory of goals for institutions of higher education (Peterson, 1971). A preliminary form of one such inventory contains 100 statements of institutional goals (for example, "to help students develop the ablility to speak and write effectively," "to strengthen the religious faith of students," "to assist in efforts to achieve and maintain world peace,") to which the respondents--students, faculty, administrators, alumni, trustees, members of the immediate community, or whatever--indicate the extent to which they feel each statement is and should be a goal of the institution. Such an approach makes several things possible. First, while it may be true that divergent groups will never see eye to eye on the major purposes of higher education institutions, it will at least be possible to quantify the extent of their disagreement and account for it in subsequent studies. Second, the technique provides a measure of discrepancy between what each of the groups thinks is and should be highly valued in academia. Third, if an investigation were carried out on a national sample of institutions, it would be possible to find how a particular institution's emphasis (goals) differed from the national sample as well as from similar institutions (such as junior colleges, large universities, etc.).

The Problem of Emphasizing Measurable Objectives in Assessing Higher Educational Outcomes

Most statements of educational goals are too general in nature to permit precise assessment of whether they have been achieved. How does one determine whether or not an institution has "prepared students for the duties and responsibilities of citizenship," or "enables students to develop a set of principles to guide their behavior," or any of a whole series of similar statements that might be found in college catalogues? It was concerns such as these that led to an emphasis on the identification of measurable objectives in education (e.g., the specification of "behavioral objectives" that are operational definitions or statements of specific educational objectives in terms of changed student behavior). Such objectives lend themselves nicely to precise observation and measurement. However, such precision can be restrictive in that highly desirable educational outcomes not susceptible to such measurements are simply omitted.

It would be unfortunate indeed if institutions were evaluated solely in terms of how well their students performed on measures of objectives that were employed primarily because they could be measured! That would be the proverbial tail wagging the dog. Cronbach (1969) has pointed out that specific behavior and other measurable or observable properties can and should be employed as indicators of constructs (such as self-confidence or scientific attitude) but not as the definers of those constructs. Cronbach argues that constructs ought to be the crucial aspect of the evaluation process, where constructs refer to a network of relations or characteristics, but not specific incidents of behavior. Cronbach goes on to say that "The operationalists who want to equate each construct with 'one indicator'...are advocating that we restrict

descriptions to statements of tasks performed or behavior exhibited and are rejecting construct interpretations...The writers on curriculum and evaluation who insist that objectives be 'defined in terms of behavior' are taking an ultraoperationalist position, though they have not offered a scholarly philosophical analysis of the issue."

To use as definitions of educational goals--at any level of education--only those outcomes that can be measured will almost certainly result in a neat list of narrow and unimportant educational outcomes. Not to attempt to state educational objectives in some measurable way tempts educators to rely on the sort of rhetoric that has characterized college catalogues for many years. The dilemma is a struggle between what Melvin Tumin (1970:68) calls "trivial precision and apparently rich ambiguity," and it is imperative that institutional administrators and faculty members get together with the educational evaluators or "accountants" and attempt to strike a better balance between these two extremes.

The Lack of Variance Problem

Proponents of outcome-oriented planning and educational accountability tend to favor a "value added" concept. That is, institutions and programs should be judged not by their outputs alone, but by their outputs relative to their "inputs." The students' final "standing" with regard to various characteristics would not be as important as their changes (usually gains) during the college years. A rather typical point of view is the following: "What has the

student attained in relation to his capability at the starting point? This concept approximates educational value-added. . . . According to this view, an educational process which moved the student from the lowest quartile of high school achievement to the second quartile of college-graduate achievement would be accomplishing something tremendous, whereas the college which accepted students only from the top decile of high school achievement and delivered them into the top decile of college achievement would be doing relatively much less" (Balderston, 1970:14).

Such a view--and again, it should be emphasized that it is a view widely held--makes the assumption that educational institutions are potentially very powerful change agents, capable of having considerable impact on both the cognitive and noncognitive attributes of those who pass through their doors. It is further assumed that colleges differ widely in the amount of impact they have. The accuracy of such a view is questionable, however, since most of the evidence suggests that educational institutions differ very little in terms of the amount of impact they have on their students after controls are made for general mental ability, socioeconomic status, and other important background factors outside the purview of the formal educational institution. For example, numerous proponents of the "value added" concept in educational accountability argue that one good indicator of institutional quality would be the students' standing on standardized tests of educational "attainment," after controls have been made for educational aptitude at the time of entry into college. Very often specific suggestions are made for use of one of the national college

admissions tests (the Scholastic Aptitude Test of the College Entrance Examination Board or the tests of the American College Testing Program) as the input measure, and scores on one of the Area Tests of the Graduate Record Examinations (GRE) as the output measure.* At first blush, such an approach seems quite sensible. The problem, however, is that the correlation between college means on these measures is so high (often in the .90s), that there is generally very little variance left that the schools can influence.

Part of the difficulty in discovering differential cognitive impact of educational institutions may be attributable to the overemphasis on standardized tests. Given the nature of most tests of cognitive attributes used in such research, it probably shouldn't be too surprising that they do not turn up large educational differences. These tests are almost always constructed so as to be widely appropriate and sufficiently general in nature to ensure their appropriateness for many educational experiences. Yet herein lies part of the evaluative problem. Tests designed to be broadly applicable may well be too general to measure the specific outcomes of educational experiences at a local level. Educational evaluators may have to turn, instead, to achievement examinations geared especially to syllabi used in specific college courses if they are to turn up indices of college effects. Such a procedure makes it difficult, however, to conduct inter-institutional comparisons, often felt to be the central and most important

*Technically, the Graduate Record Examinations now refer exclusively to the aptitude and achievement measures (Advanced Tests) used for graduate school admission. The tests formerly known as the GRE Area Tests are now part of ETS's new Undergraduate Program for Counseling and Evaluation (UP).

feature of educational accounting systems. Thus, we are back to the problems suggested earlier; measures of a general nature yield little or no interinstitutional variation, while measures geared to the program of a specific department or institution do not allow for multicollege comparisons. Yet the interinstitutional comparisons are useless if they fail to reveal meaningful differences, and so specifically designed instruments for measuring outcomes may be the only reasonable solution.

The Need for New Outcome Measures

Three issues are particularly relevant to the need for a greater variety of outcome measures. First, the measurement of outcomes should not be limited to the intellectual domain but should extend to the affective domain of the students. This includes personality adjustments and changes, social development, cultural interests, vocational development, philosophical orientation, etc. Feldman and Newcomb (1969) reviewed the literature related to college impact in a number of these areas. One striking conclusion derived from their work is that impact studies have tended to focus on those aspects of the college experience for which some standard measure or test exists. One problem with this practice is that the research community as a whole can become dependent on a single instrument which, with time, can become outdated or irrelevant. Also, generalization from specific studies to wider populations may be inappropriate.

The second issue relates to the fact that the college experience is future-oriented. In other words, it is usually the goal of an institution to prepare

its students for their future life. Some educational philosophers feel this is a societal requirement that can validly be placed on higher education. In addition, students tend to view college preparation as a facilitator of upward mobility. This function of higher education has two implications. Data for variables that measure long-term effects, vocational as well as personal, can be collected. Knowledge of these effects is necessary if colleges are to account properly for their money since long-range effects are stated as goals. Second, it will be necessary to develop individual-centered outcome measures as well as institutional-aggregated measures. If this is done, educational counselors will be better equipped to assess what an individual will lose or gain by making a decision to attend or not to attend college.

The third issue deals with the accelerating trend toward universal higher education. Here higher education is used to mean some formal training past the high school level. An increasing number of persons today continue their education beyond high school, and they are demanding different kinds of educational experiences. This has resulted in open admissions policies, community colleges, vocational schools, and a number of other programs making higher education more available to everyone. Thus, outcome measures for educational experiences considerably different from those of the traditional liberal arts colleges or large multiversities need to be developed. Some efforts have been made in this area, with emphasis on community colleges (Richards et al., 1965). Second, the heterogeneity of the new student bodies must be considered. In the past decade it has come to be well known that student inputs determine to a high degree the outcomes of educational programs.

Given that the diversity of student bodies is currently increasing (Cross, 1970), we can expect a greater variance in outcome measures, variance that may necessitate the adoption of new indicators of those outcomes.

NEEDED IMPLEMENTATION AND RESEARCH DIRECTIONS

It seems unlikely that higher education alone among social institutions will escape the pervasive use of some form of cost-effective planning and management. An overriding concern is that current pressures will lead to implementation of an irrelevant and inappropriate system. The fear is that this system will persist far into the future simply because it has been established and relieves just enough pressure to forestall improvement or substitution of an appropriate system. Such a concern does not remove, however, the necessity of beginning as soon as possible activities aimed at helping decision makers obtain and use outcome information for planning and accountability purposes.

One major area of activity should focus on what can be implemented in the immediate future, since the need for outcome information is urgent. Identification of the critical outcome information needs of different decision makers (faculty, students, administrators, legislators, etc.) is basic for determining appropriate measures of the outcomes and establishing the conventions for data analysis and information dissemination. A proposed project would serve to inform decision makers at different levels of higher education about their common and unique information needs. The results of such a project not only would help various decision makers understand the outcome information that

others value, but also would help set priorities concerning what outcome information should be collected, what measurement tools should be secured, and what will be the communication and dissemination requisites.

Another implementation-oriented effort that could have immediate payoff involves identifying what outcome information already is being collected and how the information can be processed. For example, the American Council on Education's Cooperative Research Program collects a wealth of data on students, as do major testing organizations like the American College Testing Program and Educational Testing Service. How these data banks might be tapped and how such information might be used for making better decisions are questions for which it would be valuable to have answers.

Identifying available measurement tools that are appropriate for conducting empirical studies of differential outcomes among programs, departments, and institutions could also help in the immediate future. It would be useful to summarize these instruments in a form that would be meaningful and readily accessible to all decision makers and institutional researchers in higher education.

A second major area of activity involves the research and development efforts needed to obtain and use outcome information. Basic to the identification of such efforts would be an integrative overview of the problem area. Such an integration would involve theorists and researchers from a variety of disciplines. As an understanding of the outcomes problem evolves, related research and development projects might be initiated concurrently.

One concurrent research effort could be directed toward the following question: "Can there be a general evaluation methodology that would be adaptable to most situations, or should evaluators construct customized evaluation schemes for each setting?" There have been several attempts to construct "models" of evaluation. Among the best known are Stake's (1967) countenance model, Stufflebeam's (1971) CIPP Model, and Provus's (1971) discrepancy model. Research needs to focus on whether these models could be advantageous for evaluation.

Vaizey (1970) and other researchers concerned with the outcome problem in higher education strongly advocate cohort longitudinal studies of the impact of college on students. These are expensive and, furthermore, entail long periods of time, which runs counter to the need for immediate results. However, careful consideration of the problem indicates such studies would in the long run prove more useful than any other type.

While there is a critical lack of measures appropriate for measuring the outcomes of higher education, techniques for data analysis also deserve critical review. Standard techniques that seek optimization are not useful for situations where criteria are undefined, multiple, or conflicting. Basic research on the development of effective statistical techniques is needed, as is a clarification of the shortcomings of present methodologies.

It is easy to suggest implementation and research directions that might be pursued. It is clear, however, that no one institution or organization will be able to carry out all of the needed immediate and long-range implementation and research studies. As a result, a systematic coordination of both practitioners

and researchers should be undertaken. Such a coordinated approach could make expertise available when and where it is required for stimulating certain implementation and research efforts, synthesizing others, and promoting mutually supportive communications among practitioners and researchers. It could encourage the dissemination of results in such a way as to minimize misuse of incomplete information and provide timely feedback for improved capabilities. Finally, such an approach could result in the consideration and consolidation of the many viewpoints relative to the use of outcome information and could assure that all sectors of the higher education community are represented. This would be necessary to gain the credibility and political viability that is essential for the effort to achieve success.

Conclusion

This paper has discussed a framework for an outcome-oriented approach to planning, some of the inherent difficulties in measuring higher education outcomes, and certain implementation and research directions that are indicated if outcome information is going to play a major role in planning.

Whether or not an outcome-oriented approach to planning will prove to be a viable approach or an impossibility remains to be seen. Dr. Fred Balderston may have summed up the situation best in these words:

> We have bumped hard into the question of outputs and their measurements because, among other things, we are seeking how to link the resources used to the results achieved--in other words, to link inputs with outputs. It turns out that in the long history of concern about the

> processes and activities of education, we have achieved only a very imperfect grasp of the nature of its results. Now we are having to tackle the problems of ouput definition and measurement under forced draft, for higher education has come to the front of public attention both as a major social problem and as a major contributor to social change and economic development. . . . The job we have to do is urgent, important, and controversial. If we had time, we might do well to sympathize with ourselves for taking it on (Balderston, 1970: 11).

It is important to point out that in 1970, when this statement was made, it was considered by many to be a long-range prophecy. Today, however, the need for and urgency of using information about the outcomes of higher education programs and institutions as a primary basis for planning and management is understood and recognized as a compelling reality.

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