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ABSTRACT

The development and use of program outcomes data can be an important, positive institutional asset as external higher education agencies more frequently require institutions to provide evidence of outcomes in return for resources. Arguing that more and better research needs to be done on the outcomes of community college education, this document utilizes two follow-up studies of students who graduated from career programs to illustrate how outcomes data may be organized to relate to career programs and their characteristics, and to the information needs of external agencies. A two-dimensional outcomes model is developed, with the first dimension comprised of three categories--career preparation, transfer preparation, and public service--and the second comprised of three time dimension categories--before, during, and after college. This taxonomy permits simultaneous classification of each program outcome by type of function involved and its temporal sequence in the college environment. The resulting organization of information provides necessary answers to questions asked in the resource-allocation/decision-making process. (JDS)

Measuring the Outcomes of Higher Education

Two Approaches Based on Program Characteristics and Perceived Needs of External Agencies

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Researchers and planners have known for a long time that evaluation is supposed to begin with a statement of educational objectives. And every good manager knows that evaluation includes an assessment of program costs which is supposed to involve some consideration of program outcomes. In the field of community college education, however, these basic rules have often been ignored by administrators and external agencies attempting to carry out evaluation studies. Educational master plans, for example, developed by community colleges, have little to say about outcomes or costs even though these plans contain a variety of propositions concerning financing, programs and organizational structure.

Two-year college faculty, department chairpersons, and deans engaged in making annual recommendations on how academic departments should be budgeted, as a matter of policy do not include any consideration of outcomes. Year-in and year-out, program budgets are determined on a percentage basis as an increase or decrease from the previous year's budget. This practice, as long as it is continued, can hardly be expected to encourage faculty to deal with outcomes in their programs and budget decisions.

External Pressures for Accountability

While it is not entirely clear why the outcomes issue has been avoided by colleges and their internal constitutuencies, it is becoming increasingly clear that state boards and legislatures are interested in higher education outcomes. Policy makers are becoming ends-oriented rather than means-oriented. The attitudes of funding sources clearly reinforce this trend: colleges should be rewarded not only for the number of programs and services they offer, but for the outcomes they produce and the cost benefits to the consumer.

Although it is perhaps unfortunate that higher education agencies are requiring institutions to provide evidence of outcomes in return for resources, it is likely that many policy questions would be much easier to settle if we had a better understanding of the outcomes problem. The issue of program budgeting, for example, is one topic that has stimulated a good deal of debate: At what level should programs be funded? What types of measures should be used to determine program funding? Who should make the hard decisions on funding? What criteria should be used to determine funding levels? Should programs be funded on a "relative" basis (as an increase or decrease over the previous year's budget) or on an "absolute" basis as a measure of the minimum amount of resources needed? Such issues would be readily resolved if data were available on the outcomes that are actually generated by two-year college programs. How many students are enrolled in a program and what number of credit hours do they represent? How many complete their degree requirements within two years, three years, and so forth? What is the cost per FTE student? Do the outcomes produced meet or fall short of a minimum acceptable standard? What are the cost benefits to the consumer?

The major premise of this presentation is that much more research needs to be done on the outcomes of community college education before community colleges can be truly evaluated or receive their fair share of resources. The studies described herein relate to outcomes in career programs, to the characteristics of these programs, and the information needs of external agencies. Suggestions are made as to how outcome measures might be used to improve the position of higher education institutions in their quest for resources.

Outcome Measures and Decision Making

While there are many possible methods that can be used to measure outcomes in community college programs, a fundamental purpose of outcome-oriented research should be to produce information that can be used by decision makers to determine the resources for career programs. Outcome data are most likely to be useful if they are based on an understanding of the resource allocation process itself, particularly that involved in the relationship between the institution and the state.

The need for rendering a decision relative to the resources for community college programs implies the existence of two fundamental conditions: some recognized educational objective and limited resources for achieving this objective. Decisions on higher education appropriations typically involve a choice between available means by which manpower and educational requirements can be met. In a densely populated urban region, for example, these means might include funding two-year college programs to meet the technical and manpower requirements of business and industry; support for baccalaureate degree-granting institutions to meet mid-management and human service needs; and support for professional degree-granting institutions to provide trained professionals for emerging manpower needs in health, engineering, and the social services.

Every appropriations decision is predicated on a belief in the existence of a causal relationship between some educational outcome and the resources allocated to achieve that outcome. Rational decisions concerning program resources can be rendered by consulting the available information in a college regarding the outcomes it is trying to produce and balancing this with information about the outcomes it has actually produced. The principal function of outcome research is to extend this fund of information to help decision-makers--both within and outside of the institution--to better understand the consequences of the resources they are employing.

Two studies were conducted on outcomes in curriculum programs in the Allied Health and Natural Science and Engineering Technology divisions of New York City Community College during the Fall of 1975. These studies were designed to identify student outcomes pertaining to their career patterns, their transfer plans, their perceptions of college curricula, and their attitudes toward work and further education. The study populations consisted of 922 graduates of the Division of Technology between 1969 and 1975, and 595 respondents from the Division of Allied Health and Natural Sciences. Questionnaires were sent to graduates of these programs during the Spring and Fall of 1975. Approximately 44 percent returned usable questionnaires. The response rates varied over the seven-year period ranging from a low of 35 percent in 1969 to a high of 60 percent in 1975. The overall response rate of 44 percent was considered a gratifying return for studies of this kind.

Because the number of outcome measures used in each study was very large, a taxonomy was developed not only for classifying existing measures but also for suggesting additional ones (see Figure I). This taxonomy was based on the traditional functions of two-year colleges: teaching, student development, and public service. The first dimension of the taxonomy was comprised of three categories: career preparation, transfer preparation, and public service. The second dimension involved the time dimension in which outcomes in each category were measured: before college, during college, and after college.

Figure 1

Taxonomy of Outcome Measures

	Career Preparation	Transfer Preparation	Public Service
Pre-College	choice of career (while in high school) high school curriculum high school grades	pre-college aptitude in reading, math and writing (interest tests) high school curriculum high school grades	community activities while in high school
College	grades (general courses) grades (major field) change of major withdrawal graduation/honors career-related employment (while in college) student perceptions	grades (general courses) grades (major field) change of major withdrawal graduation/honors student perceptions choice of transfer institution time to finish program	community activities while in college
Post-College	job entry certification/licensure scores salary supervisory responsib. job mobility promotions job-relatedness of college curricula professional license student perceptions employer perceptions	enrollment in transfer institutions grades advanced degrees honors student perceptions years to finish advanced degrees	place of residence (in or out of community) community activities

The categories in each dimension are to some degree interdependent. Certain transfer and career preparation outcomes, for example, can be evaluated through analysis of the same outcome measures. Thus, one of the critical outcome measures of a student's preparation for transfer or a career is his grade point average in the major field of study. By the same token, one of the most improtant aspects of a student's public service is his particication in organized community activities. Public service can be assessed in terms of the quality and quantity of student involvement in the community at every point in his relationship with the college--before he enrolls, during enrollment, and after graduation. Each outcome is classified simultaneously by the type of function involved and its temporal sequence in the college environment.

Institutional Functions. The institutional function dimension was used to assess the effects of college programs on various student outcomes under consideration. The outcomes in each study differed according to the characteristics of the programs being studied and the function being examined. For example, students enrolled in the Allied Health program are required to successfully complete a licensure examination before they can practice in their career field. The outcomes investigated in this study were those under the general rubric of career preparation but particular to the examination results and curricular perceptions of students (see Figure 2). Students enrolled in Technology programs, on the other hand, are not required to take a certification exam as a condition for career entry. The focus shifted in this study from a concern with examination outcomes to a concern with job performance. Measures such as salary, job mobility, supervisory responsibility and employer perceptions were used to evaluate performance on the job (see Figure 2)

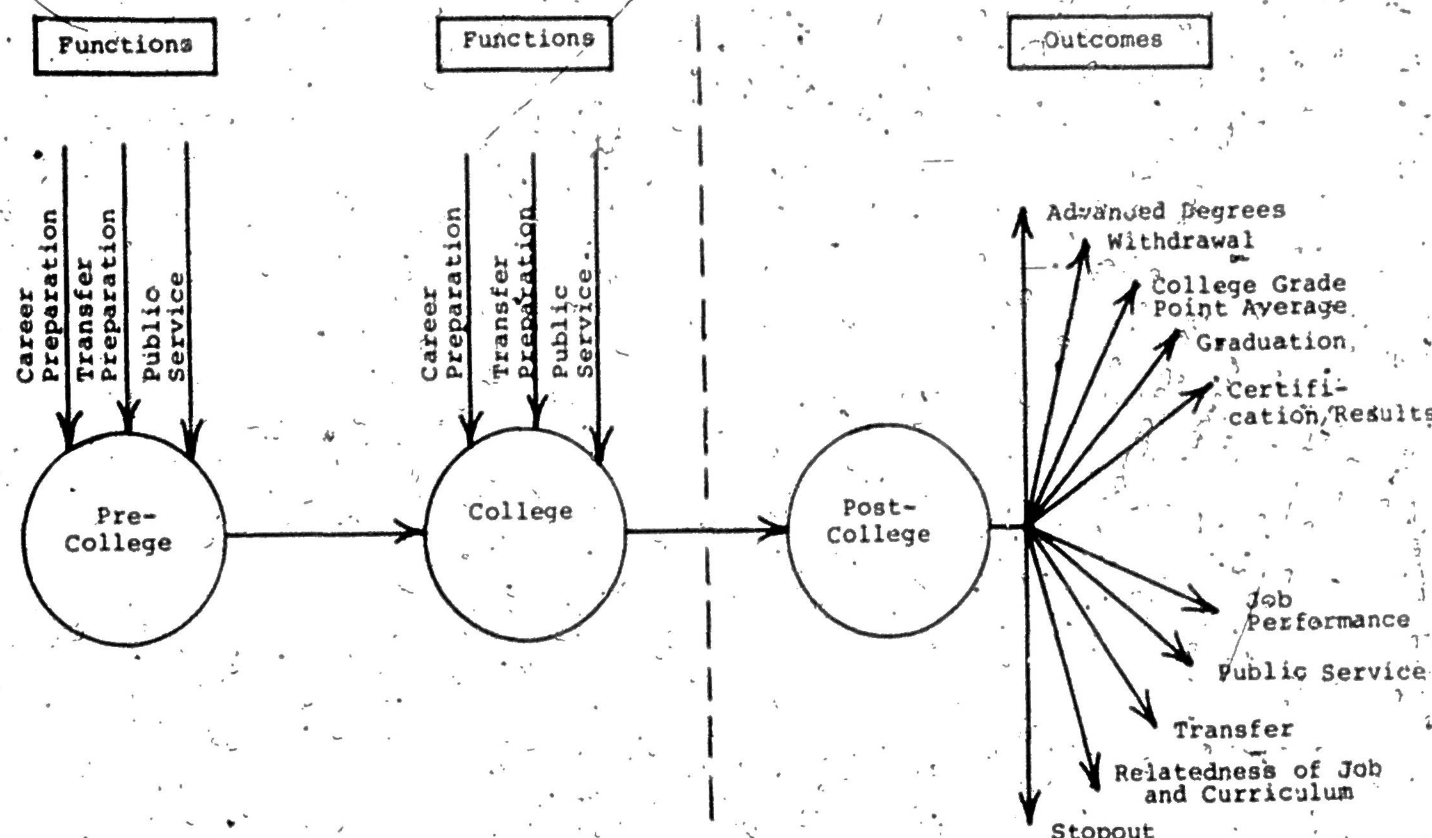
The Time Dimension. Classified into a temporal dimension, the functions in Figure 2 portray the sequence of the outcome measures used in both studies. Although it is not often considered in the deliberations of educational policy makers, time is a critical element. Is it more appropriate to make decisions on the basis of immediate outcomes of the college experience--that is those that are evident after only a brief span of time--or the outcomes which show the long term effects of higher education? This is a question that college officials and external agencies must grapple with. From the standpoint of those determining institutional support, the long-term effects are too remote and too difficult to comprehend to be used in appropriations decisions. Their primary interest lies in much more immediate outcomes: How many students were graduated? How many retained jobs in the local community? How much was spent to produce certain outcomes? Did the outcomes produced meet a minimum standard for continued funding? Questions such as these require answers if two-year colleges are to obtain the resources needed for programs.

Political Uses of Outcomes Research

The call for outcome data is becoming increasingly persistent on the part of state boards and legislators. It reflects in part a failure of confidence in many of our institutions and in part frustration over rapidly increasing costs. What purposes can be

Figure 2

Outcome Measures For Career Programs



served by the results of the studies reported herein? Those who wish to hold institutions accountable should become the recipients of outcomes data and should use such data to examine results and costs in the educational enterprise. The exchange of information between institutions and agencies cannot but help to bring some rational element to all questions relating to resources.

Published results of outcomes studies lend a focus to the types of resources needed to operate programs. They separate questions related to purposes and procedures and permit educational policy makers to develop a better understanding of the educational process. In this sense, outcome data is a weapon. It can be used to educate the policy makers about the academic and institutional facts of life, providing them a far better, more complete and comprehensive picture of the academic enterprise than they now have. Tending to relationships with state agencies has become an increasingly important and time consuming task for community colleges. Failure to provide the types of information that these agencies *should* use in the resource allocation process could result in some severe short-term penalties.