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In this day of accountability and short budgets, research and program evaluation is necessary to reach penny-conscious publics and fiscally wary federal agencies.

research and evaluation in education: a means of economic survival

by Robert Leonetti



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It is quite obvious that public education, and all its federally funded ancillary components, is presently being lambasted by a vindictive and reactionary tax-paying public. The present state of our national, state, and local economy has placed a financial guillotine on our public institutions of education at all levels. Consequently, there is a distinct paucity of tax dollars to support our public schools.

A reactionary movement on the part of the tax-payers to reduce, or at least curtail taxes, is quite evident. The recalcitrant paying element of public school finance is readily discernible if one peruses trends in school bond elections in the last five to seven years in this country. A significant number of those elections are currently being defeated, whereas not too long ago a great majority of them were easily passed.

Additionally, total current dollar expenditures for education have increased 591% (computed on purchasing power of 1967 dollars) between the years 1929 and 1968 (Johns and Morphet, 1969). If educational growth continues at approximately the same pace, it has been estimated that public education will comprise 12% of the gross national product by 1980. The lay public, and funding agencies in general, want to know what is being done with these monies. From this perspective, educators are beginning to ask the question, "Will the funds be forthcoming?" Assuming that more educational funds will be available, it appears that precise explanations of educational expenditures are the trend in our "immediate" pedagogical future.

Accountability

The above mentioned factors have contributed to some degree to the demand for "accountability" implicit in our contemporary education institutions. Accountability has been defined by Felix M. Lopez (1970), as:

The process of expecting each member of an organization to answer to someone for doing specific things according to specific plans and against certain timetables to accomplish tangible performance results. It assumes that everyone who joins an organization does so presumably to help in the achievement of its purposes; it assumes that individual behavior which contributes to these purposes is functional and that which does not is dysfunctional. Accountability is intended, therefore, to insure that the behavior of every member of an organization is largely functional (p. 231).

The "functional" component of accountability, as Lopez intimates, is a significant aspect of this definition. It is, in essence, a disguised prelude of a definitive trend toward "objectivism."

Concomitant to the concept of accountability, then, are the concepts of "objectivity" and "measurability." Reduced federal budgets and expenditures have compounded educational financial problems. Educators must now prove and "account" for the need for federal monies. One's needs must be proven greater than another's. Competition from various private organizations and institutions (RCA for example) for the educational dollar via programmed instruction is further accelerating the demand for the preparation and incorporation of measurable instructional objectives. Thus, the terms "accountability" and "evaluation" quite often presently being heard in numerous educational circles are well established cliches. Many articles and speeches on the subject are presently being perpetuated. With the dissemination of myriad information regarding the large amount of money being spent in education today, approximately ninety billion dollars annually (Ginzburg, 1973), the general public, along with federal, state, and local officials, is clamoring to know where and how their tax dollars are being spent. The day for educators to "stand and be counted" relative to the provision of concrete evidence regarding outcomes appears to be just around the financial corner.

Evaluation

There are many references concerning materials and models in the area of educational research and evaluation. Most, if not all, are still in the experimental stage.

Mager (1962) suggests some appropriate measurable means to an educational end. Beatty (1971), Wallace (1970), and Stufflebeam (1971), are excellent references that might be consulted in the research and writing of educational strategies and objectives. Arnold and McNamara (1971) advocate a problem defining/problem solving model referred to as a Systems Approach to Educational Planning. In essence, this model: (1) Begins with general statements of the problems and objectives, and (2) Explicitly defines environmental constraints, such as finances, time, policy, etc. Thus, program expenditures are more easily defined and controlled.

Jacob J. Kaufman (1963), a contemporary leader in research and evaluation in the realm of vocational education, has done much work with the Cost-Benefit Analysis model. This basic paradigm appears to contain many of the qualities which contemporary advocates of educational research and evaluation deem necessary. As such, the Cost-Benefit Analysis system will be discussed in detail.

Kaufman attempts to establish the equivalent of a system of market principles for various types of activities (government, education, etc.). Again, "specificity" and "objectivity" are key terms in this article. Even though methods of analysis are crude and adequate data are not yet available, Kaufman's assumption is that this approach is much better than having no data.

To Kaufman, Cost-Benefit Analysis is a "way of thinking" because it forces the administrator to think through objectives. One cannot discuss the need for, or the payoff from, education without relating them to costs. Evaluation ob-

jectives most commonly stated today are too broad. They must be stated much more specifically.

Kaufman (1963), discussed a cost-effectiveness study conducted at Penn State University which compared vocational and non-vocational high schools. Benefit data was collected via questionnaires from a sample of high school graduates. Labor market histories regarding earnings and employment were collected. The study revealed that: (1) After six years, the vocational-technical students earned more money (\$3,456) and worked for longer periods of time (4.3 months); (2) For dropouts from both programs, vocational-technical students were employed 11.6 months longer; (3) Students from the vocational-technical program had to have less on-the-job training (12-64 weeks), and their wage rate was higher while they were in training because they cost approximately \$245 less. Some non-monetary and economic factors were: (4) The vocational-technical curriculum did not decrease citizenship qualities and social participation; (5) In the area of career satisfaction, the vocational-technical graduates had .28 fewer jobs that did not fit with their career interests than did non-vocational-technical graduates. The assumption behind this finding is that the vocational-education curriculum prepared workers for employment in specific skill areas, so workers do in fact find employment in their areas of training.

Kaufman concluded that, because of the presentation of hard data, additional funds would be allocated to the vocational-technical curriculum. His approach provides the kinds of results that are palatable to those individuals and agencies who will be disseminating educational funds in the future. By indicating further benefits accruing to the vocational-technical curriculum which had not previously been taken into account, one can present a substantive rationale for additional funding.

At present, the Program Planning Budgeting System, although quite similar to Cost-Benefit Analysis and other various evaluation models, appears to be in possession of the most "clout" in regard to ways and means of establishing accountability. McGivney (1971), also writing in the area of vocational education, provides a precise and succinct summary of a viable PPBS model. This approach requires the analyst to ask: (1) What the objectives and outputs are; (2) What and how information should be created, organized, and utilized in order to properly assess the potential and actual achievement of those objectives and their alternatives. The degree of success achieved in the above criteria will determine the degree of success achieved in making enlightened decisions that would be, in contrast to traditional budgeting techniques, economically feasible.

The PPBS system places new emphasis on what the educational process is supposed to "produce" and not be solely concerned with resource inputs. Thus, this approach places more importance on: (1) quantifiable objectives and alternatives; (2) their costs and benefits; (3) an adequate time period for analysis. Methodologies related to the PPBS model entail program budgeting, benefit/cost, cost effectiveness, cost/utility, operations research, and system analysis.

McGivney (1971) further states that the most distinctive characteristics of the PPBS model are:

- (1) It assures a choice of valid alternatives; builds in a time dimension that sees today's decisions in terms of their longer-term consequences; considers all pertinent

costs and benefits (actual and/or estimated); and helps to institutionalize change by providing continuing analysis of goals, objectives and programs. (2) The major contributions of PPBS over traditional budgeting lies in its potential for integrating the planning, programming, and budgeting processes. (p. 165-166).

McGivney's message to vocational educators is to be aware of the new evaluative framework which all levels of government will be imposing on educational institutions seeking public resources. His concern for the "competitive" factor is implicit in his writing. The new trend, due to galloping inflation and concomitantly tightening fiscal policies, is for public education programs to be compared with such federally funded projects as low income housing, health programs, etc. Further, public education will be forced to compete with private corporations for the shrinking educational dollar. RCA's interest in the field of education has been suggested earlier. McGivney (1971) discusses the General Learning Corporation in the same vein.

Johns and Morphet (1969) also make reference to the emerging role of the PPBS. The innovative utilization of the PPBS is of value to them because of the fact that current educational expenditure systems are not consistent with modern and future needs. Their basic assumption is that "minimum returns for dollars expended for education cannot be obtained without adequate planning (p. 475)." Adequate planning includes "long-range" emphases, or essentially a "plan for planning." This, apparently, is the means to an end; the emergence of education from its contemporary financial wilderness.

Summary

It appears that the synchronous emphasis on accountability in public education is imperative relative to the various sources of public school finance. The contemporary state of our social-physiological environment is such that, rather than constraining the evaluation process, a demand is being manifested by our tax-paying society for the immediate implementation of an evaluation paradigm or a combination of paradigms readily available to educational researchers.

As a means of imposing accountability measures on the federal bureaucracy, the system of systems analysis (PPBS) was created by the federal government during McNamara's tenure as Secretary of State. The advent of the present

conservative Republican administration, the curtailment of federal spending for public education, the accelerating rate of inflation, and the current public demand for accountability, have done much to force analysis paradigms onto our monolithic educational system.

The fiscal survival of our educational institutions is becoming more and more dependent on good planning and on "observable" and "measurable" learning outcomes. Due to our present environmental construct, policy makers must begin to implement various evaluation strategies. The contemporary "values and ideologies" evident in our society dictate the need for educators to "account" for the many dollars being pumped into the system. A manifestation of reticence regarding such decisions could prove debilitating to the process of education.

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