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ABSTRACT
        Positive and negative aspects of evaluating change
programs are discussed, and a process evaluation model is proposed.
The four specific areas upon which the paper focuses are as follows:
(1) definitions of evaluation and evaluation research and a review of
some approaches to evaluation; (2) the functional consequences of
evaluation; (3) arguments against the appropriateness of experimental
designs for evaluation, some unanticipated consequences of
evaluation, and design problems in the evaluation of social change;
and (4) an outline of the process evaluation model. (DB)

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CHANGE PROCESSES IN EDUCATION:
SOME FUNCTIONAL AND STRUCTURAL IMPLICATIONS

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Evaluative Research As A Component
In Organizational Change Strategies

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Introduction

A great amount of human and financial resources are being committed to creating basic institutional change in educational systems. However, there is rarely a systematic evaluation component built into the change program to assess the effectiveness of the change attempt in creating long term organizational change.

This paper will focus on four specific areas; (1) we will begin with definitions of evaluation and evaluation research and with a brief review of some approaches to evaluation; (2) the functional consequences of evaluation will be discussed; (3) we will then discuss arguments against the appropriateness of experimental designs for evaluation, some unanticipated consequences of evaluation, and design problems in the evaluation of social change; (4) a process evaluation model will be outlined.

Evaluation and Evaluation Research

The social science literature offers numerous definitions of evaluation, both methodological and conceptual. The methodological definitions, which are more common than the conceptual definitions, usually emphasize either the stages of the evaluation process or the objectives of evaluation. Evaluation objectives, according to Brooks (1965, page 34), include the determination of : (1) The extent to which the program achieves its goal; (2) the relative impact of key program variables; and (3) the role of the program as contrasted to external variables. The 1960 "Glossary of Administrative Terms in Public Health" specifies evaluation as:

The process of determining the value or amount of success
in achieving a predetermined objective. It includes at least

the following steps: Formulation of the objective, identification of the proper criteria to be used in measuring success, determination and explanation of the degree of success, recommendations for further program stude.

Riecken's broader definition considers dysfunctional program effects as well. Here evaluation is described as "the measurement of desirable and undesirable consequences of an action that has been taken in order to forward some goal that we value". (1952, page 4)

Suchman (1967) notes that the assignment of value to some objective and the determination of the degree of success in attaining the valued objective are inherent in the evaluation process. Any intentional social action or goal oriented activity can be evaluated, and the evaluation may concern dysfunctional, as well as desirable, consequences. Hyman, Wright, and Hopkins (1962) emphasize the "social change" aspect of evaluated programs by defining evaluation as " . . . . the procedures of fact-finding about the results of planned social action". (page 2) Most definitions of the concept stress the relationship between program effectiveness and program goals. Greenberg refers to evaluation as " . . . the procedures by which programs are studied to ascertain their effectiveness in the fulfillment of goals". (1968, page 155)

Suchman clearly differentiates evaluation from evaluation research by regarding the former as a goal and the latter as a means for reaching that goal. Evaluation is "the general process of judging the worthwhileness of some activity regardless of the method employed", while evaluation research is "the use of the scientific method for the purpose of making an evaluation". (Suchman, 1967, page 31) For the purposes of this paper, Suchman's formal definition of evaluation will be adopted: ". . . the determination . . . of the results . . . attained by some activity . . . designed to accomplish

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some valued goals or objectives . ." (page 32) This definition encompasses four major dimensions of evaluation: The process (the "determination"); the criteria (the "results"); the stimulus (the "activity"), and the value (the "objective"). This definition is flexible enough to allow for variation in the methods which can be used in the process.

Evaluation research, more specifically, refers " . . . to the use of the scientific method for collecting data concerning the degree to which some specified activity achieves some desired effect". (Suchman, 1969, pate 45) Similarly, Hyman and Wright view evaluation research as ". . . those forms of planned social action", in which the fact-finding methods yield evidence that is objective, systematic, and comprehensive. (1967, page 185)

Evaluation research, as seen within the context of planned change, "is a form of research which attempts to provide program administrators with accurate information on the consequences of his action". (Caro, 1969, page 404) In discussing the evaluation of training programs, Hesseling refers to evaluation research as:

> . . . the procedures to determine the degree to which a training programme achieves specified results, both intended and unintended, and to determine what elements in the situation or in the methods used hamper or foster the process of training . . . Evaluation research aims at providing a systematic and comprehensive measure of success or failure for training programmes. (1966, page 44)

All of these above definitions emphasize, to varying degrees, that evaluation research is a systematic and comprehensive approach to evaluation which utilizes the scientific method. The same procedures that were used to discover knowledge are now being used to evaluate one's ability to apply that knowledge. (See Suchman, 1967, page 2) The logic of basic scientific research is the same logic used in evaluation research.--

the difference is in purpose rather than method.

Some Approaches to Evaluation Research

Two different models of evaluation research or program evaluation have been conceptualized by Schulberg, Sheldon, and Baker: <u>The goal-attainment model</u> and the <u>systems model</u>. (1969, page 6) In the former model, the researcher focuses on whether or not the program under study attains a prespecified objective. The systems model, which is more open and less limited than the goal-attainment model, is based upon the multiple nature of organizational goals. In this model, the effectiveness with which any one goal is attained must be considered in relation to its influence upon attainment of other system goals.

Most current evaluation research is based upon the goal-attainment model, and the following discussion will focus on that model. The goal-attainment approach is highly consistent with the four steps specified by the American Public Health Association's operational definition of evaluation. (above, page 2) The process begins with the formulation of objectives, which may be one of the most critical and difficult aspects of an evaluation program. In discussing the task of formulating objectives, Hyman states:

> The many difficulties . . . -- the breadth of the thing subsumed under a particular objective, the multiple objectives encompassed by many programs, the ambiguity inherent in any or all of the objectives as stated, and the disagreement as to the objectives -- are characteristic of many programs and are enough to stagger the imagination of the evaluator. (Hyman, Wright, Hopkins, 1962, page 7)

Suchman (1967) points out a number of general considerations involved in the formulation of objectives. Those important factors include: <u>What</u> is the nature of the content of the objective?; <u>Who</u> is the target

of the program?:   When is the desired change to take place?:   Are the

objectives unitary or multiple?   What is the desired magnitude of effect?:

and How is the objective to be attained? (see pages 39-41) These

considerations not only relate to the specification of evaluation objectives,

but also influence the overall design and methods of the research.

Program objectives are often too global and general to be used as

operational goals in evaluation research. Commonly, intermediate goals and

"practical" objectives are used as measurable indices in social research.

MacMahon, Pugh, and Hutchinson (1961) differentiate between two types of

evaluation -- evaluation for accomplishment and evaluation for technique.

The former is concerned with ultimate type goals: the latter focuses on

intermediate type goals, in specific, the quality of the events during the

research. In many cases, the ultimate objectives of social research are so

complex and difficult to operationalize, that technique evaluation is greatly

more feasible than the difficult accomplishment evaluation. However, the

evaluator is working with a scale of objectives if he is basing his work on

an intermediate goal. The evaluation must move up the scale of objectives

which can be done in only two ways: (1) by proving the intervening

assumptions through research effort or   (2) by assuming their validity

without full research proof. (James, 1962, page 33)

After the objectives are selected, the proper criteria to be used in

measuring success must be identified. Paul (1956) classified criteria "types"

into three sets: Assessment of effort (energy and effort output); assessment

of effect (the results of the effort); assessment of process (analysis of

why and how an effect was achieved). These classifications, conceptualized

by Paul, have been expanded and modified by a number of theorists. James

(1961, 1962) dimensionalizes criteria under four categories:

(1) <u>Evaluation of effect</u> -- relating to the quality and quantity
of effort.

(2) <u>Evaluation of performance</u> -- measures the results of the efforts
in terms of the stated objectives.

(3) <u>Adequacy of performance</u> -- measures the degree to which effective
performance is adequate to the total amount of need

(4) <u>Evaluation of efficiency</u> -- measures output/input and includes
the evaluation of alternative methods in terms of cost.

Suchman (1967) adds a fifth category, the <u>evaluation of process</u> (as
suggested by Paul's technique objective), which involves the question of
how and why a program did or did not work. "The analysis of process may be
made according to four main dimensions dealing with: (1) The attributes
of the program itself; (2) the population exposed to the program; (3) the
situational context within which the program takes place; and (4) the
different kinds of effects produced by the program". (page 67)

Recent proposals for evaluation in educational systems have similarly
dimensionalized evaluation into "types" or "stages". Stufflebeam (1967),
in proposing that evaluation be utilized to facilitate educational
decisions, has defined four types of evaluation: context, input, process,
and product. <u>Context</u> evaluation involves the continual monitoring of educational
systems to determine unmet needs and the underlying causes of problems.
<u>Input</u> evaluation concerns the assessment of possible solutions and alternatives
for alleviating system need, as they are proposed by outside agencies. Once
an appropriate response is selected, the treatment is subjected to <u>process</u>
evaluation to determine whether the program is working as expected and to
identify needed modifications in the program. <u>Product</u> evaluation is concerned
with the measurement of the program's overall quality and effectiveness in

dealing with systems needs. (See Stufflebeam, pages 129-131)

Stufflebeam's approach to evaluation assumes the school district perspective rather than the action-research program perspective. Similarly, Guba's (1968) emergent evaluation concerns the collecting and interpreting of data relevant to a series of decisions made by school administrators. These decisions involve: (1) identifying needs, (2) identifying a process for coping with the need, (3) implementing the program, and (4) "determining the treatment's feasibility, quality, effectiveness, and efficiency". (Guba, 1968, page 57)

Potential Functional Consequences of Evaluation Research

In this section, some of the specific anticipated functional consequences of evaluation research will be noted. Reasons for evaluating or potential functional consequences of the process have been documented by numerous theorists, in particular, Suchman (1967), Campbell (1969), Knutson (1961), and Evans (1969). Some general functions of evaluation have been implied above; so in this section, specific outcomes will be discussed in relation to the change team concept.

1.   A primary and expected product of evaluation is the determination of the extent to which the program is attaining prespecified objectives. (Evans, 1969) This function of evaluation is exemplified by the Cicarelli Report (1969) on the impact of Head Start. Evaluation of the change team concept can potentially determine the extent to which individual change agents have been trained to work effectively in teams, the degree to which teams have successfully increased organizational health in target schools, and the frequency of innovation adoption in those schools.

2.   Evaluation can potentially improve the change team concept by

identifying weaknesses in the training and development program. The Cicarelli Report, mentioned above, concluded with suggestions for a number of program modifications on the basis of weaknesses identified by means of the evaluation. Such feedback could similarly be utilized to modify the change team program to alleviate identified weaknesses.

3. Evaluation facilitates the comparison of the selected program to other methods designed to accomplish similar objectives. Certain evaluation efforts concentrate on a particular program and then compare the strategy to other approaches designed to alleviate the need. (See Gove and Costner, 1969) Change teams could be compared to other programs for school development, such as sensitivity training or problem solving techniques, and particularly to programs which train individual change agents.

4. Freeman and Sherwood (1965) suggest that evaluation forces those responsible for program design to clearly specify their objectives, to define what they are trying to do, and to determine what specific changes they are trying to effect. This consequence is particularly functional in the case of recently conceptualized strategies, such as the change team approach. The specification of objectives is also useful in uncovering inconsistencies in objectives and procedures, particularly when the systems approach to evaluation is adopted. (See Etzioni, 1960; Suchman, 1967)

5. Evaluation is potentially useful for educational programs as a means for identifying "boomerang" or unanticipated dysfunctional program consequences. Evaluation has been used effectively to uncover unintended outcomes related to school system programs (See Messick, 1970) and training and development programs (See Hesseling, 1966). It is suggested that evaluation of change teams could potentially point out certain dysfunctions

of the program.

6. Evaluation will indicate the degree of transferability of the change team program to other school districts in other geographical regions and socio-economic conditions. (Suchman, 1967) As change team effectiveness under particular conditions is reviewed, suggestions will emerge for necessary modifications to fit the program to different times and different places.

7. As the change team concept is subject to evaluation, the scientific basis for educational administrative practice will be advanced. Effective evaluation will stimulate new hypotheses and generate improved strategies concerning educational organization development. Additionally, administrative science will be advanced as the effectiveness of new change supporting structures are evaluated. (See Suchman, page 141)

8. From the societal perspective, a most important function of evaluation is the provision of public accountability. Evaluation studies are helpful in demonstrating to the public that particular programs are worth supporting and possible expanding. On the other hand, evaluation also provides a mechanism for identifying unsuccessful or uneconomical programs which should be discontinued. It is suggested that public knowledge regarding success or failure of education action programs is particularly important. Two sectors of the public must be aware of the value of the program: (1) The general public, whose taxes support the program and (2) the local public, whose schools are participating in the change team strategy.

9. Effective evaluation will potentially enhance the involvement and motivation of all personnel participating in the program. As standards and objectives are established, participants are provided an opportunity to measure their progress and achievement. Additionally, as change teams begin functioning in target schools, evaluation activities will increase communication

between the university and the practicing administrators.

There are, of course, numerous other functional consequences of evaluation. For example, the extent to which the program is being conducted as originally conceived is measured through continual monitoring. It can possibly be determined if the program is precisely aimed at the needs for which it was designed to alleviate. Sophisticated evaluation can also provide a costs/benefits analysis and assist in determining priorities for human effort and available funds. Similarly, slightly different program methods and approaches can be compared to assess feasibility and relative effectiveness (Knutson, 1961) As such, the potential functional consequences of evaluation and evaluation research are impressive. However, it has been emphasized that these functions are merely potential consequences of program evaluation.

Problems and Potential Dysfunctional Consequences

Some of the strongest arguments against the suitability of evaluation research based on the experimental design for large-scale programs have been made by Weiss and Rein in "The Evaluation of Broad-Aim Programs: Experimental Design, Its Difficulties and an Alternative". (1971) They suggest that in the evaluation of many social action programs, the use of the experimental design often creates technical and administrative problems so severe as to make the entire evaluation of questionable value. The dysfunctional consequences and problems of evaluation research as presented by Weiss and Rein and other researchers will be the topic of this section.

Firstly, there is a general tendency to avoid evaluation. This is often due to the anxiety the practitioner perceives, because of the ambiguities surrounding the evaluation process.   The change-

target system may be investing a lot of its resources in a change program,
and the evaluation of this effort may be seen as nothing more than a "critical
spying" to determine what went wrong with the program. (Weiss, 1972)

Secondly, it is diff lt to select satisfactory criteria. Broad-aim
programs often have high non-specific goals which do not lend themselves
to operationalization. The program aims may be specified in many ways and
it is not always known how the desired changes will manifest themselves. In
cases such as this, the research team will often attempt to gather pretest
and post-test data along a large number of variables. The data is searched
for significant dieferences, and the program is pronounced effective along
those variables. However, it is not always clear whether these changes
result from the program or by chance. "Moreover, the variables which show
differences are likely to be identified as the successfully achieved
goals of the program, although, had the system been only a bit different,
it might well have taken a different path,and other variables might have
signaled the change". (Weiss and Rein, page 104) (Note: Campbell takes
issue with the claim that these errors, and others, are intrinsic to the
experimental method. See Campbell, 1971.)

The specification of program objectives and operational criteria for
measurement restricts the evaluation to anticipated consequences of education
action-research programs. This limitation of evaluation research is very
serious, especially in the case of large-scale broad-aim social programs.
In some cases, it is possible that a program will result in certain
serious dysfunctional consequences that were not anticipated. Though the
evaluation data may show favorable changes in certain respects, these
advantages may be outweighed by the concomitant dysfunctions,

Thirdly, the inherent inflexibility of the experimental design may

prevent the evaluation team from being able to adjust to changes in program

management and policy. Program administrators may slightly change their

objectives and redirect resources as they become more familiar with their

situation. As their knowledge of their staff, the target population, and the

social problem increases, and as they begin to get preliminary feedback on

action program strategies, administrators can be expected to modify their

activities. If the modification involves objectives, the evaluator is left

with an outdated criteria. The presence of an evaluation team may actually

increase the probability that a program will be changed. Brooks notes that

the ethical necessity for continuous feedback of research findings acts

to constrain evaluation in community action programs. (1965, page 61)

In general, a large-scale program might be flexible enough to operate

within a dynamic and complex environment; however, it is extremely

difficult for the experimental design to be as flexible as the program.

Fourthly, the number of replications of large-scale programs is often

too small to provide statistically significant samples. Even in relatively

"small-scale" programs, the number of true replications may be very limited.

Scriven reports that there is a general lack of a common basic framework in

educational programs which diminishes the generation of comparable data.

(1969, page 49)

Fifthly, the applicability of the experimental design is limited due to

the fact that treatments are not standardized. (Guba, page 61, Weiss and

Rein, page 105) In the case of the change team training program, program

procedures would initially be relatively standardized. However, as the

change teams begin practicing, their activities will be structured on the

basis of their particular schools' environments. Nevertheless, this problem

is possibly less serious for change team evaluation than it is for the

evaluation of broad-scale community action programs.

Sixthly, an experimental design is limited in the information it can produce. Weiss and Rein assert that numerous programs are destined to failure due to general resistance; and an evaluation report of "no success" does not contribute much. It is suggested that evaluation should concentrate on identifying the nature of the opposition, specifying reasons for failure (or success), and determining the program's unanticipated consequences.

Seventhly, Guba suggests that the statistical assumptions of normal distributions and additivity are unrealistic for educational research. (pages 60-61) The assumption that groups are randomly assigned to treatment and control conditions is usually not attainable in education action-research programs. As such, the internal validity of the evaluation is limited and the generalizability is also threatened. (See Suchman, 1967, and Guba, 1968) Additionally, the experimental design type of evaluation fails to provide for decision making. (See Stufflebeam, 1967)

Eighthly, many difficulties in evaluation research and program administration result from conflicts between the research team and program administrators. It seems that there is often a basic distrust between these two groups. Beneficial communication is minimal as a result of mutual stereotypes in the relationship. (Schulberg and Baker, 1968, page 563) Rodman and Kilodny (1964) found that the practitioners perceive the researcher's objectivity as hostile and dislike the questioning attitudes of evaluators. This tension is increased as a result of status problems, different time orientations, and disagreements over publications.

The problem of the operationalization of goals often creates further tensions between program administrators and evaluators. Often, an evaluator may have to monitor a program on the basis of measurable objectives which

fail to reflect the true intention of the program. Additionally, the goals of
educational programs may be long range while evaluation must often focus on
more immediate changes. An unanticipated consequence of evaluation is that
these immediate empirically obserbable objectives may become the program goals.
Program administrators may feel "forced" to direct their attention and
resources towards measurable program outputs.

Outline of a Process Evaluation Model

In the above few pages, we have briefly focused on some of the
positive and negative aspects of evaluating change programs. For more
detailed discussion, see Caro (1971) Readings in Evaluation Research and Weiss
(1972) Evaluating Action Programs: Readings in Social Action and Education.

Even when considering the problems and potential dysfunctional
consequences of evaluation, it is apparent that evaluation can be useful to
the change agent. Process evaluation is useful in that it can provide him
with a continuing monitory of the change process, of what's working and not
working, so that he can modify his interventions when they are having no
impact on the system.

This type of process evaluation is geared to provide the change-agent
or change agent team with feedback to maximize their impact on the change
target system. In this sense, it is not an experimental evaluation design
to "test" a specific type of intervention, because the intervention is being
modified based on the feedback the change agent receives.

For example, a school system might decide with the help of an outside
consultant to institute sensitivity training as part of a leadership
development program. However, after the sensitivity training begins, it may
become apparent that there is too much hostility in the system to run

effective T-groups. Conflicting groups may first need to be subjected to some of the Blake and Mouton (1969) variety. This kind of feedback to the change agent is helpful in that it may allow him to implement an alternative intervention that might be more effective.

A specific process evaluation model will now be presented that the educational administrator might consider in implementing change programs. Both Duncan (1972) and Zaltman and Coughlan (1972) have made a strong case for the change agent teams versus the single change-agent. The change agent team comprised of internal and external change agents also has the advantage in evaluation. By having several change agents, some can concentrate on the intervention activity while others can do the evaluation. Dividing the intervention and evaluation roles between several change agents has the potential for providing a more objective assessment. The interventionist is likely to be more biased in assessing what is happening in the system. Other members of the team can focus on collecting feedback data that then can be transmitted to the interventionist, so that he can modify his behavior if need be.

Specifically, this process evaluation model has several stages. First, a change agent team is constructed of a combination of internal and external change agents. This team approach has the advantage of combining an outside expert with his collection of skills with members of the target system and their potentially more thorough knowledge of that system (See Duncan, 1972).

The second stage is to select one or two representatives <u>from each of the work groups in the target system</u> that are going to be affected by the change program. These representatives will form an Organizational Change Committee. This Organizational Change Committee will provide a direct liaison between the change agents and the rest of the organization. The OC

Committee will work with the change agent team in the diagnosis and the feedback of the diagnosis to the change target system as Duncan and Radnor (1972) have outlined in their institutionalization of change model.

Once the Organizational Change Committee has been selected, the change agent team works with them to specify the process evaluation. The members of the OC Committee,by nature of their membership in the system,can facilitate the evaluation process in several ways. First, as ongoing members of the system, they are in a better position to monitor the effects of any change program over a period of time. Secondly, by virtue of their membership, they are better able to assess the impact of the change program from the "user's" standpoint. They are able to help define the criteria for evaluation. For example, if a leadership training program was instituted, behavioral observation could be utilized in work groups to determine the actual changes that took place. The evaluation would not be relying on self reported behavioral changes.

Thirdly, the members of the target system can be helpful in specifying the kinds of data collection procedures that may be used. For example, by having target system people involved, a broader range of data can be collected. Here participant observation could be used to assess actual behavioral changes,and,by observing these changes first hand,a better understanding of the process by which these changes occurred can be identified. The traditional before-during-after questionnaire can still be utilized, but probably in a more effective way. Because of their involvement in the evaluation process, change target members are likely to be less resistant and more consciencious in filling out of the instruments. Thus, the evaluation is likely to generate more valid data.

Fourthly, by involving members of the client system through the OC

Committee in the evaluation, some of the potential problems in evaluation could be avoided. Some of the initial resistance and anxiety surrounding evaluation (Weiss, 1972) might be reduced as members of the system are involved in specifying the design, and thus feel they have more control and a better understanding of the evaluation. In this case, evaluation is less likely to be seen as "critical spying". Also, because of the involvement of members in the target system in the evaluation, there would be a greater likelihood of the system's utilizing the results of the evaluation in modifying change programs. There is also less likelihood for the system's members to deny and displace the evaluator and his findings (See Rodman and Kolodny, 1964, page 127).

Conclusion

Thus, in this process evaluation model, organizational members, through the Organizational Change Committee, work in a collaborative relationship with the change agent team in the design and implementation of the evaluation. This evaluation technique has two objectives: (1) it provides the change agent team with a continuous monitoring of the impact of their interventions and has the potential for helping the change agent team modify their interventions when they are not effective; (2) it creates a step-by-step documentation of the change program and its impact on the system that can be used not only to assess the program, but also to plan for future changes. It documents what worked and did not work, so that future programs can benefit from past experiences.

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