STATUS OF PROGRAM EVALUATION IN CIVIL

TECHNOLOGY PROGRAMS IN SELECTED

TWO-YEAR COLLEGES

By

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Bachelor of Science

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1973

Submitted to the Faculty of the Graduate College
of the Oklahoma State University
in partial fulfillment of the requirements
for the Degree of
MASTER OF SCIENCE
May, 1981

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CHAPTER I

INTRODUCTION

Program evaluation has been extensively used for a long time. It may be known as Operations Research, Systems Analysis, Institutional Research, Educational Research, Training Evaluation, and Policy Studies. Regardless of the name, the intent is still the same: evaluating an existing or on-going program.

Although program evaluation has existed for a while, the fact that program evaluation is becoming more noticeable among educators and social scientists is new. Part of the emphasis is due to the increasing availability of funds for evaluation and part is due to demands that the funds be accounted for if they are used for program evaluation.

Program evaluation can be viewed in many ways. To the general public it has been seen as determining the worth of a program. However, to persons involved in evaluation it has been seen in a much broader role (Anderson, 1978).

Program evaluation differs as much as any specialty area. It differs to some extent in the definition of "program" and "program evaluation" and it also differs in the particular set of activities that are included under "program evaluation".

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Statement of Problem

The increasing interest in program evaluation in two-year colleges and the demand for evaluation to account for its fundings have created the necessity for a clearer understanding of program evaluation, the different types of evaluation, and a procedure for the evaluation of civil technology programs within two-year colleges.

Need for Study

For many of the two-year colleges there is a need for information dealing with program evaluation. Many programs have accreditation agencies that evaluate their programs by the numbers of graduates that pass or fail their accrediting exams. However, programs that are not under the auspices of some accrediting agency have a difficult time arriving at a procedure for evaluating their programs. Also, there is the need to have programs analyzed at the beginning or front end as well as during the program (formative evaluation) and after the program is completed (summative evaluation).

The need for evaluation of two-year programs is important. Without evaluation, programs may be offered that do not fulfill the needs or requirements that they are designed to fulfill.

This study focused on gathering information about different types of program evaluation. Such information on the extent of program evaluation in two-year colleges can provide a basis for better understanding of program evaluation in that setting.

Furthermore, the comparison of the information collected can provide:

1. Information that will be useful to evaluate programs for persons in two-year colleges who are responsible for evaluation.

2. A better understanding of front end analysis, formative evaluation, and summative evaluation for persons involved in evaluation.

3. A checklist of steps for each of three possible phases of evaluation.

Purpose of the Study

The purpose of this study was to determine the status of program evaluation in two-year college Civil Technology programs with regard to the different types of evaluation being used and the numbers of two-year colleges that evaluate their programs.

Objectives

The objectives of this study were to:

1. Determine the number of two-year colleges that evaluate their Civil Technology programs.

2. Determine what types of evaluation are being used in two-year Civil Technology programs.

3. Determine who is responsible for program evaluation in two-year Civil Technology programs.

4. Determine perceptions of program administrators toward evaluation and different methods of evaluation.

Assumptions

Some of the assumptions made for this study were:

1. All two-year colleges have a method of evaluating their programs.

2. Not all two-year colleges have a standard procedure or format as to when and how to evaluate their program.

3. Much of the evaluation is being left up to the instructor who is teaching the individual course or program rather than the department chairperson or the administration.

4. That all two-year colleges need a standard procedure for evaluation.

Limitation

The limitation placed on this study was that only two-year colleges offering a Civil Technology curriculum were studied as far as their evaluation criteria.

Definition of Terms

Civil Technology - A broad field of study including design and construction of public use facilities such as water and sewage treatment facilities, highways, bridges, dams and airports.

Two-Year College - Includes community and junior colleges and technical institutes which grant associate degrees. Also included are those colleges and universities which have programs leading to associate degrees.

Program or Curriculum - The combination of courses and work experience required for an associate degree.

Associate Degree - A two-year degree that is awarded after the completion of the designed program or curriculum. Usually between 65 and 70 credit hours.

Course - A class meeting regularly throughout a semester or quarter.

Evaluation - A method of generating valid, useful, and credible information for decision-making.

Program Evaluation - A sponsored activity, aimed at mitigating a social or economic problem or improving social and economic welfare.

Front-End Analysis - The assessment of need and demand for a program including conception, staff, facilities, clients, and financial support.

Formative Evaluation - The process of evaluating programs for the purpose of improving them rather than making decisions about whether a program is effective or not.

Summative Evaluation - The assessment of the overall effectiveness of an operating program.

CHAPTER II

REVIEW OF LITERATURE

The purpose of this study was to determine the status of program evaluation within selected two-year college Civil Technology programs with regard to the different types of evaluation and the amounts of evaluation being conducted within these two-year colleges. This chapter presents a review of selected publications related to the problem outlined in the previous chapter. First, the history of program evaluation is presented. Second, the definition of evaluation is outlined. Third, the purpose of Front End Analysis, Formative Evaluation and Summative Evaluation is studied. The last area represents models for Front End Analysis, Formative Evaluation and Summative Evaluation.

History of Evaluation

Evaluation poses a problem to the historian due to the shifts in its concepts over the years. According to Merwin (1969, p. 6) the concepts have changed in: ". . . relation to such issues as who is to be evaluated, and how evaluations are to be made." According to Anderson, Ball and Murphy (1975) who state that concern for evaluation has been receiving a lot of attention since the early 1950's during the beginning of the curriculum reform movement.

> However, the roots of program evaluation go deeper.
> Concern with judging the worth of programs developed with
> the offering of any public services (e.g., Public Health,
> Education, and Welfare). As the public service movement
> grew, so did the demands to justify the expenditures.
> Evaluation represented a response to these demands (p. 141).

After all, it behooved public servants to "account" for public funds

and to be able to justify the programs effectiveness. Such early evalua-

tions constituted little more than descriptions of countings or

recountings of the services rendered. The reports became part of the

many file-and-forget documents left in the archives to become a part of

history rather than the utility of programs. Anderson, Ball, Murphy and

Associates (1975) also state that: ". . . answers to queries about the

merit of education/training programs could not be supplied by routine

statistics. More sophisticated measurement techniques and procedures

were needed" (p. 141).

However, many evaluators were slow to realize that evaluation is

more than just measurement. Therefore, a lag in defining their field

and it's distinctive features was created.

In the mid-nineteenth century the Federal Bureau of Education

(later the United States Office of Education), now the Department of

Education, was created. It was the Bureau's job to "show" the condition

of progress of education in several states. This was accomplished by

encouraging schools to keep accurate records of educational services.

This provided little data about the assessment of outcomes and few

answers to the question: What return are the community and nation

getting for their investment in the educational institutions (Anderson,

Ball, and Murphy, 1975)?

During the 1940's, due to World War II, training evaluation took strides that were created by the massive recruitment of personnel into the military services and defense industries. The result of these crash training programs spurred the search for optimal training results through the most efficient and economical methods possible. According to Anderson, Ball, Murphy and Associates (1975):

> Wartime pressures made it impossible for needed skills to be fostered gradually through traditional classroom procedures. Consequently, novel instructional methods were devised and repeatedly evaluated in order to improve their effectiveness (p. 144).

Mechanical devices, for example, were developed to train personnel in a variety of perceptual-motor skills: flying an aircraft, operating radar, firing at rapidly moving targets, etc. The devices were created to simulate the actual materials and situations. In this way, lives would not be lost and equipment would not be ruined by student mistakes and ineptitude. Training was not primarily restricted to perceptual-motor areas. It was found that mechanical training devices such as language laboratories and teaching machines would be used in teaching a variety of cognitive skills. Therefore, evaluators had to investigate which of these devices produced the best results. Working with the instructors, they looked at criteria that measured the course objectives once they were measured the objectives were stated in behavioral terms. Some of the methods that have proved most effective in evaluating training are asking for opinions of students or experts, using attitude scales, measuring knoweldge of facts and principles eliciting behavior in the "what would you do?" situation, and observing real-life behavior. According to Anderson, Ball, Murphy and Associates (1975, p. 144): "The last of these is closest to the ultimate objectives of instruction and

is recommended for first consideration as a measurement technique."

Anderson, Ball, Murphy and Associates stated that some gains were made in evaluation during the "post-Sputnik drive to revise and update school curricula in science, mathematics, and, to some extent, the humanities" (p. 145).

Evaluation received further impetus when Title I of the Elementary and Secondary Education Act of 1965 authorized federal money to be allotted for schools for special programs dealing with "disadvantaged" children. These monies also included the annual evaluation and effectiveness of these programs. Centers all across the country were established to assist the schools in their efforts, and the literature began to increase with new models and taxonomies of evaluation. State departments of education wishing to receive money from Title III of the Elementary and Secondary Education Act according to Anderson, Ball, Murphy and Associates, "were required to conduct a needs assessment, and this activity in turn intensified an interest in evaluating the level of education in the individual states" (p. 145).

During the 1950's and 1960's new technological aids to education and training (television, tape recordings, films, computers) were being studied as to their value in assisting, supplementing, and in some cases, supplanting traditional classroom instruction.

It was not until the Elementary and Secondary Education Act of 1965, along with the accountibility demands made on educational institutions, that a considerable amount of evaluation activity began. According to Wolf (1979, p. 144), "A large number of federally funded educational programs must be formally evaluated annually. The same is true for many state and local programs."

Numerous individuals had an impact on the information and research data measurement tools being used in the evaluation process. Cronbach and Suppes' surveys were useful in encouraging schools to keep accurate records of their activities. Thorndike's early example of <u>Materials Evaluation for Analyzing the Adequacy of Arithmetic Textbooks</u> was also useful in evaluating other textbook materials. Another trailblazer was Hall, who developed the use of the questionnaire in educational research and was a forerunner in Formative Evaluation.

These individuals were some of the major contributors to evaluation in the past. As such, they were innovators in the area of evaluation and evaluation techniques as it applied to the evaluation of programs.

Individuals who are the forerunners of the future include people like: Stuffelbeam (1971) and his text on <u>Evaluation and Decision Making</u>; Popham (1975) for his 26 test modules for teacher competency development system; Stake (1975) for his nine approaches to educational evaluation; and, Worthen (1973) for his work in competencies for educational research and evaluation for his evaluation models.

These are only some of the major persons responsible for the technique and application of evaluation being used today. The remainder of this review will consider definitions of program evaluation and some models used in program evaluation today.

<center>Definition and Purpose of</center>

<center>Program Evaluation</center>

This section will look at definitions of program evaluation, and explanations of front-end analysis, formative, and summative evaluation. The last part will discuss some of the models being used in evaluation of programs.

There are several definitions of educational evaluation. As Wolf
(1979) mentions:

> They differ in level of abstraction and often reflect
> the specific concerns of the person who formulated them.
> At the most general level, evaluation has been defined as
> 'the assessment of merit' (Popham, 1975). This definition,
> unfortunately, does not help very much since it is left
> to the reader to determine what is meant by the terms
> 'assessment' and 'merit' (p. 2).

A somewhat more elaborate definition is provided by Cronbach (1963),
who defines evaluation as the collection and use of information to make
decisions about an educational program. By "educational program" Cronbach
means anything from a set of instructional materials to instruction
materials distributed on a national level, to the educational experiences
of a single learner (p. 3).

Cronbach's definition of evaluation is an interesting one. In it
are two elements. First, "the collection and use of information" puts
equal emphasis on both collection and the use of information. The idea
is that decisions are to be made on the basis of information, not on
impressions or beliefs of how the program is to function. The second
element of Cronbach's definition is "to make decisions". This denotes an
action orientation and according to Cronbach, evaluation should lead to
action, as opposed to conclusions not acted on. An evaluation activity
that does not contribute to the decision-making process is a waste of
time and money. Evaluation, as stated by Cronbach, ". . . must contribute
to the decision-making process, notably to course improvement, if it is
to have any justification in education (pp. 2-3).

This definition of evaluation, emphasizing the collection and use
of information about learner performance for purposes of making sound
decisions about educational programs, is somewhat different from the

"assessment of merit" definition; but it is not sufficient to explain

what evaluation is. A more extended definition, supplied by Beeby

(1975, p. 4) describes evaluation as: ". . . the systematic collection

and interpretation of evidence, leading, as part of the process, to a

judgment of value with a view to action."

There are four key elements to this definition as Wolf (1979)

points out:

> First, the use of the term 'systematic' implies that what
> information is needed will be defined with some degree
> of precision and that efforts to secure such information
> will be planful (p. 3).

This does not mean that only information that can be obtained through

standard tests and other related measures will be obtained. Information

gathered by means of observational procedures, questionnaires, and

other self-report measures can be used in the evaluation process. The

important qualification is that whatever kind of information is

gethered, it should be acquired in a systematic way.

> The second element in Beeby's definition, 'interpretation
> of evidence', introduces a critical consideration sometimes
> overlooked in evaluation. The mere collection of evidence
> does not by itself constitute evaluation work. Yet
> uninterpreted evidence is often presented to indicate the
> presence (or absence) of quality in an educational venture
> (p. 4).

A good example for the element of "interpretation of evidence" is the

high dropout rate. A high dropout rate does not necessarily mean that

a program is inadequately doing what it is designed to do. Factors

such as personal problems, acceptance into higher level educational

programs, obtaining a good job are all reasons for dropping out which

may in no way reflect on the program. As Wolf also states:

. . . dropping out of an educational program may indicate
that the program has been successful (p. 5).

The third element of Beeby's definition--'judgment value'--
takes evaluation far beyond the level of mere description
of what is happening in an educational enterprise. It casts
the evaluation worker, or the group of persons responsible
for conducting the evaluation in a role that not only permits
but requires that judgments about the worth of an educational
endeavor be made. Evaluation not only involves gathering
and interpreting information about how well an educational
program is succeeding in reaching its goals, but judgments
about the goals themselves (p. 5).

According to Wolf,

. . . any person making a judgment after the systematic
groundwork has been laid, is completing an evaluation (p. 5).

The last element of Beeby's definition--'with a view to
action'--introduces the distinction between an undertaking
that results in a judgment of value with no specific
reference to action and one that is deliberately undertaken
for the sake of future action (p. 6).

These actions according to Wolf (1979):

. . . intended to lead to better policies and practices in
education. If this intention is in any way lacking,
evaluation probably should be dispensed with. Evaluators
can use their time to better advantage (p. 6).

The definition given by Anderson and Ball (1978) defines program

evaluation as: ". . . a sponsored activity, more often than not from

public funds, aimed at mitigating a social or economic problem or

improving social and economic welfare (p. 2)."

This definition qualifies a great variety of activities as targets

for evaluation--for example, education, job training, community health

and mental health, residential treatment, certification and licensing

designed to protect the public from malpractice, public safety, urban

planning, and environmental protection. The definition includes programs

that can be delivered to groups and individuals by instructors and other

practitioners and through television, books, museum exhibits, computer

assisted instruction, and other media. Therefore, the definition is

not restricted as to size and scope. Thus, a program can be defined

narrowly as an algebra class; broadly as the National Head Start Program.

Another definition is discussed by Bloom, Hastings, and Madaus

(1971):

> . . . evaluation as we see it, is the systematic collection of
> evidence to determine whether in fact certain changes are
> taking place in the learners as well as to determine the
> amount or degree of change in individual students (p. 67).

There are numerous definitions of evaluation and program evaluation;

some terms get confused between what is "evaluation" and what is

"research". According to Alkin, Daillak, and White (1979):

> . . . there are studies desgined primarily to add to the
> body of knowledge (research), on the other, those studies
> designed primarily to provide information for decision-
> making (evaluation). And these two functions are separate
> and distinct (p. 13).

The purposes of evaluation as discussed by Anderson and Ball (1978)

points out the fact that most people:

> . . . assume that evaluation has but one purpose: to
> determine whether a program is any good. Practicing
> evaluators, however, subscribe to the formative-summative
> distinction made by Scriven (1967). The purpose of
> formative evaluation generally is to help develop a
> new program (p. 3).

Anderson and Ball (1978) also point out that some evaluators even

"specialize" in helping improve programs rather than appraising their

impact for policy decisions.

To adequately describe the capabilities of program evaluation, six

major purposes for evaluating a program will be discussed:

I. To contribute to decisions about the program installation.

There are many stories about programs that did not make it or

programs that fell flat on their faces because there had not been an

adequate "front-end analysis". If the need or demand for the program, the adequacy of the concept, the availability of the staff and facilities to give it, its accessibility to clients, and the areas of continued support for it both financially and otherwise, these programs would have a much greater chance of being successful. Sometimes a fairly simple analysis will help eliminate obstacles that a new program is likely to meet, so that the program plans can be adjusted to account for them. In some cases, front-end analysis may require more sophisticated reasoning and techniques. This analysis will not help to save money but sometimes it is more difficult to dislodge a "doomed" program than it is to start a new one. Of course, the cost of a poorly conceived program may be counted in more than dollars; for example, loss of good will.

II. To contribute to decisions about program continuation, expansion, or "certification".

This purpose corresponds somewhat to the usual meaning of "summative evaluation" but extends beyond the assessment of the overall effectiveness of a program to meet its objectives. For example, it would determine whether the program has any hard to manage or inappropriate side effects. A program that is operated differently in different locations can pose special problems when the evaluator is trying to make some overall statements about the success of that program. An example would be evaluating the Head Start or Model Cities program across the United States. It is also a valuable tool in determining whether to keep a program or not.

III. To contribute to decisions about program modification.

This section includes such things as appraising the competencies

of the program staff, aspects of the delivery systems (lecture, hands-on,
multi-media- computer assisted instruction, etc.). The purpose of
contributing to decisions about program evaluation is to provide informa-
tion to the course developers, managers, and agents in order to help them
improve program design and services. Purpose II and III are not
necessarily exclusive. An evaluator that is searching for information
to aid in decisions about program expansion or contraction may also find
this helpful in improving the program. One of the evaluators' main
areas of concentration is being able to take feedback and use it to
remodel or revise the program.

IV. To obtain evidence to rally support for a program; and

V. To obtain evidence to rally opposition to a program.

Area IV and V are efforts that are requested out of an honest
desire for "the facts". Some evaluators utilize this for supporting
his or her case as to the commissioning of a program. However, there
are few evaluation situations without prejudice although the evaluation
being used may overlook them. Therefore, an extra measure of sensi-
tivity is required by every evaluator who wants to have a real and
legitimate impact on program policy decisions.

VI. To contribute to the understanding of basic psychological, social,
     and other processes.

In spite of the continuing debates about whether program evaluation
qualifies as research, there is evidence that evaluation studies can
provide useful information about general knowledge as well as information
useful in decisions about certain programs. For example, evaluation of
continuing education programs can provide valuable information about the
styles and characteristics of adult learners in the sites selected and

the data collected is done in such a way as to make such generalizations possible.

Although front-end analysis, formative and summative evaluation have been mentioned in the six major purposes of program evaluation; a summary definition of each will be given.

Front-end analysis is defined as the assessment of need and demand for the program, the adequacy of the conception, the availability of the staff and facilities to put on the program, the accessibility of the clients, the likelihood of continued support of the program both financially and otherwise. It can be used to help determine whether the program should be started or not.

Formative evaluation is defined as the process of improving programs rather than those evaluations which are done for the purpose of making decisions about whether or not the program is effective or whether it should be continued or not. It can be used to collect detailed descriptive information for the purpose of improving program operations and procedures. Rather than measuring the effectiveness of a program (summative evaluation) is primarily used for program development and improvement.

Summative evaluation is defined as the assessment of the overall effectiveness of an operating program. It also helps in making decisions about whether to keep a program or not. As Wolf (1979) clearly states:

> Each class of information is considered necessary for a total evaluation effort. If the major purpose of an evaluation is to determine whether to adopt a particular program or not, one pattern of resource allocation may be adopted; if the chief purpose is improvement of an existing program, another strategy may be followed. In each case, however, attention needs to be given to each of the major classes of information (p. 33).

Models of Front-End Analysis,

Formative Evaluation and

Summative Evaluation

In the next section a model for front-end analysis, formative evaluation, and summative evaluation will be given. Each model will be discussed and examples within each one will also be listed.

Front-End Analysis

Several guidelines for assessing installation requirements for programs have been widely used. A useful model is that of Hull and Wells (1977) which has been adapted by Datta (1978). Among the considerations in this approach are:

Time - Time considerations include such things as:

1. Start up: How much time will it take to get the innovation working.

2. Lead Time: This includes deadlines placed on the activities that are to be completed before the operating date. Also, such things as time for ordering materials to be used in the activity, like textbooks, tests and visual aides should also be considered. Clearance from other sources should also be considered.

3. Competition: How much time is required for the activity and does it affect or conflict with any other activities?

4. Operation time: How much time does the innovation require for service delivery or direct operations?

5. Time to achieve results: How much time will be needed before the activity has a measurable effect? Will it take months, years or even generations? Will the impact increase, decrease, or remain steady?

6.   Time to obsolesence: For how long is the innovation likely to be effective? Are the problems we are trying to solve likely to diminish or be affected by technological change? Are there certain characteristics of the innovation that will allow for change?

7.   Cyclic considerations: Are there characteristics which require the innovation be installed at a particular time of the calendar or academic year? This might include agricultural and business cycles.

Ecological Considerations - Ecological considerations include such things as:

1.   Acceptance: Who is likely to greet the program with enthusiasm, and what actions can proponents take to facilitate its adoption? What barriers can be anticipated and if so from what source are they coming? If resistance is perceived, how active and well-organized is the opposition?

2.   Complexity: How much active involvement is necessary and by whom is it necessary for installation?

3.   Divisibility: What are the requirements for installation? Does it have to be all-or-none or can changes be made?

4.   Adaptability: Must the installation match the specifications? Can the innovation be changed without damaging the effectiveness? If the innovation is so rigid that flexibility cannot be predicted, how will this affect installation and attitudes?

5.   Policy changes: What changes are needed in local, state or national policy in order for the innovation to be successful? For example, changes in building codes, the Fair Labor Standards Act, certification requirements, etc.

6. Degree of development: Is the innovation well worked out? Is it in someone's head or is it documented on paper?

7. Ecological fit: Are other things happening that might interact with the program to facilitate or hinder installation? Will the activity work with other programs in the community or against them? Will it fit the change?

Organizational Change - Organizational change includes such things as:

1. The number of staff members: If the activity is successful will it require more people and if so, where will they come from?

2. Staff characteristics: What qualities are essential if the activity is to succeed? Are enough staff members with the desired qualities available? Is extra money needed to attract these people? What turnover is required of the innovation is to be effective? Do conditions permit this kind of turnover?

Space and Equipment Requirements - Space and equipment requirements include such things as:

1. Housing and office space: How much space is needed? Is there any construction or renovation required? Does taking over this space affect the community or other programs?

2. Land use: How much land is needed? How will the required land investment affect the program and if adequate space is not available is another alternative feasible?

3. Relation of this space to other programs: Does the innovation require it to be near other facilities, programs, or concentrations of participants? Will the social and economic structure of the community be affected?

4. Supplies and equipment: What materials and equipment are required by the program? Are the materials already developed or will they have to be developed?

Although cost was not mentioned in this model it would also have to be considered for the following areas. The questions below, according to Datta (1978), cover only a few of the funding concerns.

Cost - Some of the cost requirements include such things as:

1. Quantity and Timing: How much money will be required, by when, to install and maintain the innovation? Will the innovation make money or will it create a deficit? Have inflation and other contingencies been considered? Will funds be available through other resources?

2. Source: Where will the money come from? When will these funds be available? What happens when and if the first source of money runs out? Where will new sources come from and who will be responsible for them?

3. Availability of Funds: How much effort will it require to get funds? How long can these first sources be counted on? Are funds likely to increase thereby mortgaging future opportunities?

4. Limitations on Use: What restriction will be placed on the use of funds? Can other resources be substituted for funds?

5. From Innovation to Operation: Federal funds are available to try out new ideas. When these funds run out or are no longer available will the original source be required again or can the community support the innovation so it may contine? As McLaughlin and others (1975) stated:

> Planning for continuation or incorporation should begin well before the federal money runs out. Successful projects have disappeared because their district allowed them to fall apart in their hour of success, and found later that it could not put the pieces together again (p. 10).

Formative Evaluation Model

The formative evaluation model is helpful in making decisions about program modification. According to Anderson and Ball (1978) the following steps should be followed:

1. Program Objectives: Are the ojbectives valid and useful for attacking the needs the program is designed to serve? Do they meet the general acceptance of those who are influencial to the continuance of the program? The acceptance of the innovation is important when it comes to making decisions pertaining to program installation, continuation, modification, defense or defamation.

2. Program Content: Is the content relevant to the program objectives and does it cover those objectives adequately? Is it technically sound and professionally acceptable? Are we asking the participants to make assumptions or work with material that is beyond their experience or over their heads? Are we meeting the participants on their level? Are all the components effective as to the order in which they are presented, prescribed, or delivered?

3. Program Methodology: This includes not the "what" but the "how" of program presentation. How much control do participants have? How much does the staff have? How is the program being delivered? What delivery methods best fit the program needs? How long should the program be and when will breaks be given? Will daily sessions be better than weekly or monthly? Are the reinforcements adequate to sustain interest?

4. Program Context: Total support for the program is necessary. A program may be technically sound, but if it is administered badly, if the staff working relationships are ill-defined, if facilities and

resources are inadequate, if the program's public relations efforts are insensitive the program may be doomed (Weiss, 1975).

5. Personal Policies and Practices: Who is the program reaching? How is it reaching them? Are the participants those that should be taking the program or need to be taking the program? Who stays in the program? Who leaves? Are efforts made to retain participants? Does the weeding out process effect the overall operation and effectiveness of the program?

Summative Evaluation Model

Although there are numerous methods of summative evaluation to use once the program has been completed, this model will list the ones that are generally used to measure learner behavior as stated by Wolf (1979).

1. Objective Written Tests: Objective written tests usually consist of a number of different item-types. These usually include true/false, matching, multiple choice and short one-or-two word fill-in questions. According to Wolf:

> The learner operates within a highly structured situation;
> selects his answer from a limited set of choices, supplied
> by the test constructor; typically responds to a large number
> of items and receives a score--usually right or wrong--
> according to a predetermined set of correct answers (p. 57).

Wolf also states that:

> Objective written tests have been used extensively
> to test for possession of factual information; they can
> also be used to assess ability to draw inferences; make
> interpretations from presented material; apply principles
> to novel situations; make comparisons and elementary
> kinds of analysis (p. 57).

2. Essay Written Test: An essay written test usually consists of fewer questions than on other types of tests. The learner is required to organize their own answers and use their own words and style to

produce the answer. According to Wolf, a method of:

> Preparing model answers, reading all responses to one
> question before going on to another, and scoring questions
> as anonymously as possible; all are recommended practices
> for achieving maximum accuracy in scoring (p. 60).

3. Paper, Theme, or Report: Similar to essay examinations, the

learner is required to organize his own answers and express himself in

his own style of writing. However this could cause problems, according

to Wolf (1979) in that it is difficult to make sure that using this type

of procedure the student is doing his own work (p. 61) This can be

remedied somewhat by assigning the topics to report on. In this

situation, according to Wolf: "It is usually considered wise to

supplement papers, themes, and reports with evidence gathered under

supervised conditions" (p. 61).

Summary

Program evaluation has been extensively used for a long time.

However, it was not until the mid-nineteenth century that program

evaluation started to take place.

There are many persons who contributed to the research and measure-

ment tools used in evaluation techniques today but it is people like

Stufflebeam, Stake, Worthen and Popham who have lead the way to

evaluation as it is known today. The many different views and

definitions of what evaluation should be and what it should measures

have made evaluating programs difficult for the evaluator. Although,

classifying evaluation into the six major purposes, and a clear under-

standing of front-end analysis, formative and summative evaluation as

discussed by Anderson and Ball (1978) gives the evaluator some

excellent guidelines for conducting evaluations.

There are many programs that have not been successful due to poor program evaluation or lack of program evaluation and there are programs that have been very successful with little or no evaluation. The research of literature affirms the fact that if the evaluation of the program is successful, the program itself is likely to be successful.

CHAPTER III

METHODOLOGY

The purpose of this study was to determine the status of program

evaluation in two-year college Civil Technology programs with regard to

the different types of evaluation being used and the numbers of Civil

Technology programs that evaluate their offerings. To achieve this

purpose four (4) steps were followed: (1) programs were selected by

compiling a list of two-year colleges offering degrees in Civil

Technology; (2) a questionnaire for gathering data from the college

programs was devised; (3) the data were collected and analyzed; and

(4) the results were reported.

Selection of Subjects

One main source was used to compile a list of two-year colleges

offering Civil Technology programs. This source was the Technical

Education Yearbook (1979-1980).

One objective of this study was to determine the number of two-year

colleges that evaluate their Civil Technology programs. All two-year

colleges offering programs in Civil Technology were included in this

study. Two-year programs in Civil Technology were considered since

Civil Technology is one of the few technologies that does not have its

own accrediting agency. A total of 323 programs were identified. Each

of the 323 two-year colleges was assigned a number from 0 to 323 and a

table of random numbers was used to arrive at the final 100 colleges
that were contacted.

Data Gathering Instrument

A questionnaire was designed to estimate the number of two-year
colleges that evaluate their Civil Technology programs and to identify
what type(s) of evaluation was used. Also, the questionnaire attempted
to gather information about when the evaluation was taking place; before,
during or at the conclusion of the program. It also looked at who was
responsible for evaluation: institution administration, department head,
instructor, faculty, students and outside personnel (consultants).

The questionnaire was field tested by 25 persons that were involved
in evaluating programs. It was critiqued for grammar, ease of under-
standing of questions and the relevance of the question to measure what
was being measured. The data collected were then analyzed and the
questionnaire was re-designed. The questionnaire was field tested for
a second time to make sure that all the information was clear and
understandable.

A cover letter to the questionnaire was written on letterhead
stationary explaining the purpose and importance of the questionnaire
and to improve the credibility of the questionnaire. In addition to
collecting information about who is responsible for evaluation at their
college and number of students enrolled, the letter asked these
following specific questions: (1) Do you have a method of evaluating
individual classes? (2) Do you have a method of evaluating your program
that differs from course evaluation? (3) Is program evaluation necessary?
(4) Do you have a way of evaluating a program before it begins (front-end

analysis)? (5) Do you evaluate during the program (formative evaluation)? and (6) Do you evaluate the program after completion (summative evaluation)?

The letters and questionnaires were addressed to the department heads of the Civil Technology programs. A copy of the cover letter appears in Appendix A and the questionnaire appears in Appendix B.

Collection and Analysis of Data

The cover letter and questionnaire were mailed during the second week in November 1980. These letters were sent to 100 of the 323 colleges. If the responses to the questionnaires were not received by January 1, 1981, a follow-up letter and another questionnaire were sent to the nonresponding colleges. A copy of the follow-up letter appears in Appendix C. Only those responses received by February 1, 1981, were included in the study. All letters and questionnaires were accompanied by preaddressed, stamped return envelopes.

The returned questionnaires were reviewed and summarized as follows:

1. The number of years the program has been in existence was reported.

2. The estimated enrollment for the Civil Technology programs was reported.

3. When the evaluation occurred as far as front-end analysis, formative and summative evaluation was reported.

4. The person(s) responsible for doing the evaluation was reported.

Although the overall response rate was only 44 percent, the decision was made to discontinue any further mailings. The researcher

felt that although additional questionnaires would be received, this
small percentage of increase would not make a significant difference
in the findings.

CHAPTER IV

RESULTS AND ANALYSIS

The purpose of this study was to determine the status of program

evaluation in Civil Technology programs in selected two-year colleges

with regard to the different types of evaluation being used and the

number of two-year colleges that evaluate their programs.

The Technical Education Yearbook (1979-1980) was used to generate a

list of 323 colleges with majors in Civil Technology, although only 100

of the 323 were chosen using a table of random numbers.

The letter of introduction on letterhead paper and the questionnaire

were addressed to the Department Head, Civil Technology and asked if that

person would fill out the questionnaire and please return it as soon as

possible. If the questionnaires were not returned by the cut-off date,

a follow-up letter and another questionnaire were mailed.

Results

After the first cut off date, the last week of December, 1980, only

15 percent of the questionnaires were returned. A follow-up letter was

mailed the second week in January, 1981, and the bulk of responses were

returned during January and February, 1981. Forty-six of the 100 two-year

colleges contacted returned the questionnaire, making a return rate of

46 percent. Thirty-four states were represented.

Responses from two of the two-year colleges indicated that they had discontinued their Civil Technology program. This reduced the number of usable responses to 44. Twenty-nine out of the 44 respondents or 65.91 percent stated that they would be willing to share any of the evaluation materials used by their institution. Two institutions returned their evaluation materials with the returned questionnaire. Two of the institutions offered two-year programs in Civil Technology as well as a four-year program in Civil Engineering. The two-year program was not evaluated by itself but as a part of the four-year program. These two institutions were considered as two-year programs and as a part of the total 44 programs using evaluation.

Responses to the Questionnaire

Of the 44 two-year colleges responding to the questionnaire, all had some type of evaluation method for their program. They ranged anywhere from a very intensive formal evaluation procedure to programs that only utilized the evaluation results from their advisory committees.

Responses to the questions about the number of years the program has been in operation and the estimated enrollment for the fall of 1979 and the spring and summer of 1980 are presented in Table I. Due to the methodology used, it was difficult to summarize the data. However, the mean number of students in Civil Technology programs ranged from a high of 243 students in the fall of 1979 and 230 in the spring of 1980 for the two-year colleges that have been in operation for 16 to 20 years and a high of 160 students enrolled in the summer of 1980 for two-year college programs that have been in operation for 11 to 15 years. The low ranged from 22 students in the fall of 1979, 30 students in the

in the spring, and 23 students in the summer of 1980, for the institutions in operation from 1 to 5 years.

TABLE I

NUMBER OF YEARS THE PROGRAM HAS BEEN IN OPERATION AND THE
MEAN NUMBER OF STUDENTS ENROLLED IN THE PROGRAM

Years in Operation	Number of Programs (%)	Mean Number of Students		
		Fall 79	Spring 80	Summer 80
1-5	6.82	22.0	29.5	22.5
6-10	40.91	94.1	89.5	123.0
11-15	20.45	81.4	122.4	160.0
16-20	15.91	243.4	230.4	139.8
21-25	9.09	191.0	199.5	30.0
26 Plus	6.82	168.0	152.0	120.0

The two-year colleges that have been in operation from 6 to 10 years had the largest percentage of the Civil Technology programs offered at 40.91 percent.

Responses to the questions: Do you have a method of evaluating individual classes? Do you have a method of evaluating your program that differs from course evaluation? and Do you think program evaluation is necessary? are presented in Table II.

Responses to the questions about evaluating individual classes ranged from 40.91 percent indicating they did evaluate their individual classes (programs in operation from 6 to 10 years) to 6.81 percent (programs in operation from 11 to 15 years) indicating they did not

evaluate their individual classes. Of the two-year colleges that have

been in operation from 6 to 10 years, 22.73 percent indicated they did

have a method of evaluating their program that differed from individual

class evaluation while 18.18 percent indicated that their individual

class evaluation was the same evaluation method used for course

evaluation.

TABLE II

RESPONSES BY NUMBERS OF YEARS IN OPERATION

Years in Operation	Individual Class Evaluation		Method That Differs From Course Evaluation		Is Program Evaluation Necessary	
	% Yes	% No	% Yes	% No	% Yes	% No
1-5	4.55	2.27	2.27	4.55	6.82	0.00
6-10	40.91	0.00	22.73	18.18	40.91	0.00
11-15	15.91	6.81	9.09	11.36	20.45	0.00
16-20	13.64	0.00	13.64	2.27	15.91	0.00
21-25	9.09	0.00	6.82	2.27	9.09	0.00
26 Plus	4.55	2.27	6.82	0.00	6.82	0.00

All 44 of the two-year colleges or 100 percent indicated that a

method of program evaluation was necessary. The largest percent

indicated was from the two-year colleges in operation from 6 to 10

years with 40.91 percent.

Responses to the questions about when evaluation should take place,

either before the program begins (front-end analysis), during the

program (formative evaluation) or after the program is completed

(summative evaluation) are presented in Table III.

TABLE III

STAGES OF EVALUATION AND THE PERCEIVED
NECESSITY OF EVALUATION

Front-End Analysis		Necessary
Yes	45.45%	72.73%
No	54.55%	27.27%
Formative Evaluation		Necessary
Yes	70.45%	90.91%
No	29.55%	9.09%
Summative Evaluation		Necessary
Yes	65.91%	77.27%
No	34.09%	22.73%

Responses to the questions about front-end analysis showed that 45.55 percent indicated that they did utilize some method of front-end analysis while 54.55 percent indicated front-end analysis was not being used. Responses to the question about: Is formative evaluation being used? 70.45 percent indicated that it was used and 29.55 percent indicated it was not used. Responses to the question about summative evaluation indicated that 65.91 percent indicated it was being used, while 34.09 percent indicated it was not being used.

Responses to the question about the necessity of front-end analysis ranged from 72.73 percent indicated it was necessary to 27.27 percent indicating it was not necessary. Responses to the question about the necessity for formative evaluation ranged from 90.91 percent indicating it was necessary to 9.09 percent indicating it was not necessary.

Responses to the question about the necessity for summative evaluation
showed that 77.27 percent indicated it was not necessary.

Responses to the question about what methods are used in front-end
analysis are presented in Table IV. The "questionnaire" was the method
most often used with the pre-testing and pre-printed evaluation forms
following in that order. A small percentage of the two-year colleges
utilized community surveys and a comparison of their programs to other
local two-year colleges and universities to aid them in their evaluation
process. These methods and others were compiled from the comments made
in the "other methods used" part of the question. As noted at the
bottom of Table IV, the respondents could have chosen one or all four
methods listed.

TABLE IV

METHODS USED BY RESPONDENTS FOR FRONT-END ANALYSIS

Method*	% Utilization
Pre-Testing	15.91
Pre-Printed Evaluation Forms	13.64
Questionnaire	27.27
Other:	
Advisory Committees	9.09
Accreditation Standards	4.54
Interviewing Past Graduates	6.82
Community Survey	2.27
Comparison to Local Universities	2.27
Industrial Interviews	15.91

*Respondents could have chosen one or all four
methods (see Question 7a, Appendix C).

Responses to the question about what methods of formative evaluation are used are presented in Table V. The results about what method of formative evaluation is being used indicated that 43.18 percent used pre-printed evaluation forms, 38.64 percent participation in class, 34.09 percent testing and 11.36 percent task analysis. The "other method" part of the question indicated that 6.82 percent of the two-year colleges used advisory committees and industrial involvement, 2.27 percent used A.B.E.T. (Accreditation Board for Engineering and Technology) and 2.27 percent used evaluation by administration and comparative subject matter. Also, the note at the bottom of Table V indicates that the respondents could have chosen one or all five methods listed.

TABLE V

METHODS USED BY RESPONDENTS FOR FORMATIVE EVALUATION

Method*	% Utilization
Testing	34.09
Pre-Printed Evaluation Forms	43.18
Task Analysis	11.36
Participation in Class	38.64
Other:	
Advisory Committees	6.82
Industrial Involvement	6.82
Instructor Evaluation of Course Material	4.55
A.B.E.T. (Accreditation Board for	
Engineering and Technology)	2.27
Evaluation by Administration	2.27
Comparative Subject Matter	2.27

*Respondents could have chosen one or all five methods. (See Question 8b, Appendix C.)

Responses to the question about what methods of summative evaluation are being used are presented in Table VI. The follow-up questionnaire was used by 45.45 percent of the respondents, pre-printed evaluation forms by 25.00 percent, testing by 15.91 percent and task analysis by 6.82 percent. Responses to the "other methods" listed indicated 4.55 percent of the two-year colleges utilized follow-up of graduate information and employer feedback. A small percentage, 2.27 percent, indicated they used I.C.E.T. (Institute for the Certification of Engineering Technicians) testing and success of graduates in the job market. As in Tables IV and V, the respondents could have chosen one or all five methods of summative evaluation.

TABLE VI

METHODS USED BY RESPONDENTS FOR SUMMATIVE EVALUATION

Method*	% Utilization
Testing	15.91
Pre-Printed Evaluation Forms	25.00
Task Analysis	6.82
Follow-Up Questionnaires	45.45
Other:	
Follow-Up of Graduates	4.55
Employer Feedback	4.55
I.C.E.T. (Institute for the Certification of Engineering Technicians)	2.27
Job Success	2.27

*Respondents could have chosen one or all five methods. (See Question 9b, Appendix C.)

Responses to the question about who is responsible for program evaluation at your institution are represented in Table VII. The response indicated that out of the 44 two-year colleges responding, 59.09 percent indicated that evaluation should be a responsibility of the department administration. The next highest was 47.73 percent indicating it should be a responsibility of the institution administration followed by instructor, faculty, students and outside personnel or consultants. Advisory committees were the highest in the "other" section with 9.09 percent. Respondents could again choose one or all seven responsibilities.

TABLE VII

RESPONSIBILITY FOR EVALUATION

Who Should be Responsible	% Utilization
Institution Administration	47.73
Department Administration	59.09
Instructor	38.64
Faculty	38.64
Students	27.27
Outside Personnel (Consultants)	13.64
Other:	
Advisory Committees	9.09
Follow-Up Questionnaires	2.27
Employer Feedback	2.27
A.B.E.T. (Accreditation Board for Engineering and Technology)	2.27

*Respondents could have chosen one or all seven categories. (See Question 10, Appendix C.)

Responses to the "Comments" part of the questionnaire were varied. They are listed in their entirety in Appendix D.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary of Findings

The purpose of this study was to determine the status of program evaluation in the two-year college Civil Technology programs with regard to the different types of evaluation being used and the numbers of two-year colleges that evaluate their programs.

The late 1950's and early 1960's saw very little evaluation taking place in two-year colleges. Evaluation received some impetus when Title I of the Elementary and Secondary Education Act of 1965 authorized federal money to be allotted for schools for special programs dealing with "disadvantaged" children. These monies also included the annual evaluation and assessment of these programs. The Act of 1965 also placed accountibility demands on educational institutions and therefore, evaluation of educational programs became necessary. However, the extent of program evaluation at the two-year college level was unknown.

To gather information on this subject, a mailing list was compiled of two-year colleges with programs in Civil Technology. The Technical Education Yearbook (1979-1980) was used to generate a list of 323 two-year colleges offering two-year programs in Civil Technology. Of the 323 two-year colleges, 100 were chosen using a table of random numbers. A cover letter expressing the need for evaluating programs, along with a

40

questionnaire was sent to the 100 colleges. The letter and questionnaire were addressed to the department head of the Civil Technology program and requested that the questionnaire be completed and returned in the preaddressed stamped return envelope. The questionnaire asked specific questions as to how many years the program had been in operation, the number of students enrolled in the program, the type or types of evaluations being utilized, the point during which the program evaluation took place and the responsibility for evaluating the program(s).

Responses were received from 46 of the 100 colleges contacted, making a return rate of 46 percent. Thirty-four states were represented. Responses from two of the two-year colleges indicated that they no longer had a Civil Technology program. This reduced the number of usable questionnaires to 44.

Of the 44 two-year colleges which responded to the questionnaire, it was found that all 44 did, in fact, have some method of evaluating their programs.

Some discrepancies were found among a few of the sources in regard to the differences between what is course evaluation and what is program evaluation. This was due, in part, to the way the questions were stated in the questionnaire.

All the respondents to the questionnaire answered as adequately as possible. Because of the methodology some of the responses received were too variable to be categorized. However, they did give an indication of the status of program evaluation in two-year Civil Technology programs. However, only 50 percent of the colleges evaluated their total program. All of the two-year colleges indicated that some type of program evaluation was necessary.

Responses to the questions about when should evaluation take place, either before the program begins (front-end analysis), during the program (formative evaluation) or after the program has been completed (summative evaluation) indicated that about 60 percent of the two-year colleges did not utilize front-end analysis for their programs for both the formative and summative types of evaluation. Almost all the two-year colleges felt that all three methods of evaluation were necessary.

Of the different methods used for evaluating programs the pre-printed questionnaire or pre-printed evaluation forms along with a pre-printed follow-up questionnaire to graduates were the ones most often used. Responses to these questions varied and therefore, it was difficult to determine the single best method to use.

It was stated in Chapter III that the reason for choosing the Civil Technology program was that the Civil Technology programs were not accredited by any accreditation board. However, two colleges indicated they used I.C.E.T. (Institute for the Certification of Engineering Technicians) testing to help in evaluating their programs and two were accredited by A.B.E.T. (Accreditation Board for Engineering and Technology).

Responses to the question about who is responsible for evaluation indicated that evaluation of programs was the responsibility of either the institution's administration or the departmental administration.

Comments on the questionnaire indicated interest in the research being compiled and a desire to share that information.

Conclusions

A number of the institutions offering two-year Civil Technology programs do have a method by which they evaluate their programs.

However, it is difficult to say how much evaluation should be accomplished and when it should be done. It was indicated, however, that all the two-year colleges felt a need for some type of evaluation process. Whether this felt necessity for evaluation will change the methods used for evaluation in the various institutions will be difficult to determine.

The three areas of evaluation; front-end analysis, formative, and summative evaluation, should be considered as a starting point for evaluating any program, not just two-year programs in Civil Technology. This method can be adapted to four-year universities, two-year junior colleges, technical institutes, cooperative extension programs, industrial training programs, military training programs and even community service programs. If programs continue to be offered and not evaluated, it may never be known whether the program is serving the desired needs planned in its conception.

Many of the two-year colleges indicated that evaluation of programs should be left to either the institution's administration or departmental administration. However, every person involved with the institution should be concerned with how well the individual courses as well as the entire programs are accomplishing their course objectives or the program's goals and objectives.

Advisory boards and industrial contacts are also adequate indicators as to the needs analysis data for program evaluation and should be considered in the evaluation process.

Evaluators must begin to realize and acknowledge that some of the early conceptual distinctions drawn for evaluation activities serve only to some extent the full range of roles that evaluators are expected to

satisfy. Perhaps the recognition that there exists a need for innovative approaches to evaluation will allow our responsible growth as contributors to the improvement of programs.

Recommendations

Based on the findings in this study, the following recommendations are made in regard to program evaluation in two-year Civil Technology programs:

1. Evaluators should begin to realize and acknowledge the fact that very little has been done in the way of evaluation. Two-year colleges offering Civil Technology programs should become aware of the need for program evaluation as indicated by the recognized need for evaluation. As evaluators, they should be responsible for its growth and its contributions to the improvements of programs.

2. Two-year colleges with programs in Civil Technology should have an evaluation committee to evaluate their programs. This might also be accomplished by having the curriculum committee look into the possibilities of a continuous type of evaluation of all two-year programs.

3. One of the major problems affecting the evaluation of programs is the lack of funding. Therefore, money should be budgeted for the purpose of funding evaluation procedures.

4. Evaluation should be a continuing process. A standardized evaluation format designed especially for the individual two-year programs should be developed by each institution. All three methods of evaluation: front-end analysis, formative,

and summative evaluation, should be considered as a part of the standardized evaluation format. Programs should not be forgotten once they have been evaluated.

5. Accurate records of evaluation procedures should be recorded so that more data can be recovered for program utilization and research purposes. Evaluation should not be viewed from the standpoint of just another "file-and-forget" document but as a valuable tool used to determine needed and useful information about a program.

6. Instructors and department heads should be responsible for seeing that individual courses and programs are evaluated at the department level. Administrators should coordinate the overall evaluation and see that policies and procedures are followed.

7. Employers of graduates of the two-year Civil Technology programs should be considered when evaluating that program. They should also serve in an advisory capacity to the department.

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APPENDIXES

APPENDIX A

COVER LETTER FOR THE QUESTIONNAIRE
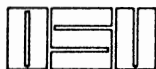
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Oklahoma State University

November 11, 1980

Department Head,
Civil Technology

DOES YOUR PROGRAM NEED EVALUATING?

DO YOU HAVE A METHOD FOR EVALUATING YOUR PROGRAM?

IS THERE A NEED FOR PROGRAM EVALUATION?

These questions and others could be answered by
completing the attached questionnaire.

As part of on-going educational programs and
research at Oklahoma State University Technical
Institute, the information gathered from the at-
tached questionnaires will help us answer the above
questions.

The results of this research will be furnished to
you upon request.

Your cooperation in completing the questionnaire
will be greatly appreciated.

Sincerely,

Dale L. Fredericksen,
Assistant Professor
Civil Technology

APPENDIX B

QUESTIONNAIRE

NAME: (Please Print)

_____

Last   First   Middle Initial

INSTITUTION: _____

MAILING ADDRESS OF INSTITUTION:

_____

Street

_____

City   State   Zip Code

POSITION: _____

TYPE OF PROGRAM: _____

1. NUMBER OF YEARS PROGRAM HAS BEEN IN OPERATION: _____

2. ESTIMATED ENROLLMENT: FL 79_____SPR 80_____SM 80_____

3. WHAT PERCENTAGE OF YOUR STUDENTS ARE:
   Full Time _____% Part Time _____% Both _____%

4. DO YOU HAVE A METHOD OF EVALUATING INDIVIDUAL CLASSES?   YES _____ NO _____

5. DO YOU HAVE A METHOD OF EVALUATING YOUR PROGRAM THAT DIFFERS FROM
   COURSE EVALUATION?   YES _____ NO _____

6. IF NO, DO YOU THINK PROGRAM EVALUATION IS NECESSARY?   YES _____ NO _____

7. IF YES, DO YOU HAVE A WAY OF EVALUATING A PROGRAM BEFORE IT BEGINS?
   (Front end analysis)   YES _____ NO _____

   (a.) WHAT METHOD(s) ARE USED?

   _____ 1. Pre-testing   _____ 2. Pre-printed evaluation forms

   _____ 3. Questionnaire   _____ 4. Other _____
                                                          (Please explain)

   _____

   (b.) DO YOU THINK A METHOD OF FRONT END ANALYSIS IS NECESSARY?   YES _____ NO _____

8. DO YOU EVALUATE DURING THE PROGRAM? (Formative Evaluation)   YES _____ NO _____

   (a.) IF NO, DO YOU THINK EVALUATION DURING A PROGRAM IS NECESSARY? YES _____ NO _____

   (b.) IF YES, WHAT METHOD IS USED?

   _____ 1. Testing   _____ 2. Pre-printed evaluation forms

   _____ 3. Task Analysis   _____ 4. Participation in class

   _____ 5. Other (Please explain) _____

   _____

9. DO YOU EVALUATE THE PROGRAM AFTER COMPLETION? (Summative evaluation)   YES _____ NO _____

   (a.) IF NO, DO YOU THINK EVALUATION AFTER A PROGRAM IS NECESSARY?   YES _____ NO _____

   (b.) IF YES, WHAT METHOD IS USED?

       _____ 1. Testing   _____ 2. Pre-printed evaluation forms

       _____ 3. Task analysis   _____ 4. Follow-up questionnaires

       _____ 5. Other (Please explain) _____

       _____

10. WHO IS RESPONSIBLE FOR PROGRAM EVALUATION AT YOUR INSTITUTION?

       _____ 1. Institution   _____ 2. Department
             Administration   Administration

       _____ 3. Instructor   _____ 4. Faculty

       _____ 5. Students   _____ 6. Outside Personnel
                                         (Consultants)

       _____ 7. Other (Please explain) _____

       _____

11. WOULD YOU BE WILLING TO SHARE ANY OF THE INFORMATION IN   4, 5, 7, 8 and 9 ABOVE?   YES _____ NO _____
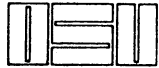
12. COMMENTS: _____

      _____

      _____

THANK YOU FOR YOUR ASSISTANCE IN THIS SURVEY! PLEASE RETURN THIS FORM AS SOON AS POSSIBLE TO:

Dale L. Fredericksen
Assistant Professor, Civil Technology
Oklahoma State University
Technical Institute
900 N. Portland Ave.
Oklahoma City, OK 73107

APPENDIX C

FOLLOW-UP LETTER TO THE QUESTIONNAIRE

Oklahoma State University / THE TECHNICAL INSTITUTE
900 North Portland
Oklahoma City, OK 73107
947-4421, Area Code 405

Dear Civil Department Head,

A few weeks ago you received a questionnaire from
Oklahoma State University Technical Institute dealing with
Program Evaluation. The questionnaire was not returned to
us so we are sending you another one. We would hope that
you would take the time to fill this one out and return it.
If you do not have the time would you please give it to
someone in your department or your administration that would
take the time to fill it out.

We have received very few questionnaires at this time
and much more data is needed. Your cooperation is appreciated.

Sincerely,

Dale L. Fredericksen,
Assistant Professor
Civil Technology

APPENDIX D

COMMENTS MADE ABOUT THE EVALUATION

OF PROGRAMS IN SELECTED

TWO-YEAR COLLEGES

Program: Technical
"Present evaluation methods are being developed."
Civil Technology Instructor.

Program: B.S., M.S., and Ph.D. in Civil Engineering
"The evaluation of an undergraduate and graduate program in Civil
Engineering is a complex task involving both course evaluations
on an individual basis as well as overall program performance.
Perhaps the most telling indicator of a program's success is the
quality of the graduates and their performance when they leave the
university."
Professor and Chairman.

Program: Technology--Civil, Electronics
"We only have presently teacher evaluation--programs will be
evaluated in the future."
Dean of Instruction--Math/Science.

Program: B.S. Construction Management; A.S. Civil Technology;
         B.S. Architectural Engineering; A.S. Architectural Technology
"We constantly evaluate through faculty meetings, student to
faculty discussions, etc.; and have made steady progress
accordingly. However, it remains a highly subjective process.
We do relatively little objective evaluation of the overall
program, except at time of accreditation review--which in fact
is also at least as subjective as objective."
Department Head.

Program: Two-Year Associate Degree
"For each program we rely on two factors: (1) job placement,
(2) advisory committee input."
Dean.

Program: Two-Year Associate Degree
"Students work full time for two quarters out of eight total
quarters as part of a co-op program. Evaluation from co-op
employers is used."
Dean of Engineering Technology.

Program: Civil Engineering Technology
"Students evaluate course and instructor by completing pre-printed
forms. No method is used to evaluate entire program."
Program Coordinator.

Program: Two-Year Associate Degree
"Good luck in your research and I would be interested in seeing
your results as program evaluation is a big concern of mine."
Department Chairman, Civil-Construction Technology.

Program: Civil Engineering Technology
"The way our program is set up, with job type performance, we evalu-
ate each experiment in the labs (concrete and soils) and each
drawing performed. Major joint projects are evaluated by the
individuals participating."
Department Head.

Program: Civil Engineering Technology
"The responsibility for evaluation rests with the administration but is administered through departments with the help of the instructors and advisory groups from industry."
Department Chairperson.

Program: Civil Engineering Technology
"Most students think our evaluation is a waste of time. i.e., There is no feed-back directly to them. Only the faculty member involved."
Associate Professor.

Program: Civil Engineering Technology
"The institute is currently revising the entire package for the Board of Regents at the state. Deadline unknown."
Department Chairperson.

VITA

Dale Leland Fredericksen

Candidate for the Degree of

Master of Science

Thesis: STATUS OF PROGRAM EVALUATION IN CIVIL TECHNOLOGY PROGRAMS IN
SELECTED TWO-YEAR COLLEGES

Major Field: Occupational and Adult Education

Biographical:

Personal Data: Born in Chicago, Illinois, January 16, 1945, the
son of George L. and Myrtle E. Fredericksen.

Education: Graduated from Midwest City High School, Midwest City,
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Technology from Oklahoma State University Technical Institute
in May, 1972; received a Bachelor of Science degree in
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Oklahoma, 1975-1977; Instructor, Civil Technology Department,
Oklahoma State University Technical Institute, Oklahoma City,
Oklahoma, 1977-1979; Assistant Professor of Civil and
Surveying Technologies, Oklahoma State University Technical
Institute, Oklahoma City, Oklahoma, 1979-1981.

Professional Organizations: Member of Oklahoma Technical Society,
Higher Education Alumni Council, American Education
Association.