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ABSTRACT

The purpose of the research presented in this document is to classify, validate, and analyze the costs of inservice teacher education workshops in terms of measurable and effective benefits to students following teacher participation in inservice courses. The research design is divided into the following three phases: (a) list the claimed benefits of teacher inservice courses that result in learner gains, (b) validate the presence of these claimed results with experimental samples, and (c) price the validated benefits in a comparative shopping tabulation contrasted with value analysis. In addition to the actual research design, this document includes a comprehensive listing and categorization by type and level of claimed learner gains directly linked to inservice teacher education. The document also has the following characteristics: (a) it presents analyses of previous research, (b) examines the research design, (c) describes the steps for developing the research instrument, (d) explains the organization of the research instrument, (e) provides procedures and forms necessary to conduct the survey, (f) lists evaluation possibilities, (g) lists functions performed by the workshop director and the outside evaluator, (h) provides sample formats for each data function, (i) describes how this evaluation is being applied elsewhere, and (j) shows how an evaluation process can result in greater specification and clarity of the dimensions being evaluated. (PB)

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TITLE

EVALUATING TEACHER INSERVICE WORKSHOPS  
THROUGH A FOUR LEVEL ANALYSIS  
OF LEARNER BENEFITS

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May 12, 1975

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## INTRODUCTION

This document entitled EVALUATING TEACHER INSERVICE WORKSHOPS THROUGH A FOUR LEVEL ANALYSIS OF LEARNER BENEFITS offers the busy Workshop Director an accurate and simple way to keep score of payoff to students taught by workshop participants.

This publication responds to the following requests of Workshop Directors:

We want clear-cut guidelines and directions on how to zero in on effective measures of our teacher inservice workshops.

We want yardsticks with which to measure ourselves with other similar workshops.

We want to find out the best type of format and the best type of workshop for the objectives we are attempting to achieve.

The above requests have been put in simple basic English. It is possible to come up with a more technical and scientific request:

We want a comprehensive listing and categorization by type and level of claimed learner benefits directly linked to teacher inservice education.

We want comparable data.

We want comparable forms.

We want comparable learner benefits.

We want the workshop to start and stop as planned.

We want an independent evaluation.

We want teacher to attend these inservice workshops for the competency being offered as well as for the academic credits.

From both the common sense point of view and the scientific point of view, it would be difficult to summarize the objectives of this document any clearer than done above. This document tries to meet the above requests.

It must be noticed that certain of the above requests are general and can be answered in simple, non-technical English. These answers will be found by reading pages 1-8 which explain in detail the four levels of learner benefits.

There are many other technical questions that can be answered. For example, an overview of the research undertaken to determine learner benefits and possible levels of learner benefits is summarized on page 9.

An analysis of the previous research in this area can be found on pages 10-11.

The major purposes of this research in evaluating teacher inservice workshops are listed on page 12. This research was conducted in three phases, which are explained in detail on pages 13-17.

In addition to a general description, each phase is described by title and sample products on pages 18-20.

An overall timeframe is provided together with a critical path analysis on page 21.

For the statistician and researcher interested in scientific experimental research design, page 22 offers a concise analysis.

A one page overview of this evaluation design is provided on page 24.

The steps for developing the research instrument are described on pages 25-26.

The distinction between the two major versions of the research instrument are explained on pages 27-29.

Important procedures and forms necessary to conduct the survey are given on pages 30-31.

In order to make sure that more than one method of gathering evaluation data is encouraged, a number of evaluation possibilities have been listed on page 33.

In order to specify the difference between the evaluation component performed by the Workshop Director and by the outside evaluator, page 34 lists three functions for both the Workshop Director and the outside evaluator.

Since each of the functions of the Workshop Director and the outside evaluator will result formats and data, pages 35-39 give sample formats for each data function.

Several agencies have begun to apply this evaluation procedure in a highly simplified fashion. In order to encourage further applications, page 40 provides a short one-page overview of how this evaluation is being applied elsewhere.

Applying this procedure elsewhere requires the development of evaluation dimensions. Each evaluation dimension is a specific component of a workshop or seminar to be evaluated. Pages 41 and 42 show how such an evaluation process can result in greater specification and clarity of these dimensions being evaluated.

A COMPREHENSIVE LISTING AND CATEGORIZATION  
BY TYPE AND LEVEL OF CLAIMED LEARNER GAINS DIRECTLY  
LINKED TO TEACHER INSERVICE EDUCATION

During the period, September 1, 1973 to August 31, 1974, several teacher inservice education workshops were conducted. Each of these workshops had a list of objectives and anticipated outcomes. Some of these objectives and outcomes were in terms of teacher competency. Other outcomes and objectives were in terms of benefits to learners.

Since the ultimate purpose of providing teacher benefits is to provide learner benefits, this listing of benefits is intended to provide a baseline data source against which any inservice workshop can compare itself.

It would be an oversimplification to claim that any workshop objective or benefit presented in terms of teacher competency excluded learner gains. Obviously, the teacher's competency is improved in order to benefit learners.

The distinction made between a teacher benefit and a learner benefit refers to the explicitness of the prestated objectives of a specific workshop.

In order to systematize this listing, the results are categorized by both type and level.

Various types of benefits are recognizable. For example, knowledge benefits would include knowledge, information, data, principles, generalizations, and problem solving. Performance benefits would include performances, training, techniques, skills, procedures, and logistics. Attitude benefits would include attitudes, motivation, values, emotions, human relations, priorities, and preferences.



TYPES OF BENEFITS

Knowledge Benefits  
(DATA)

Knowledge  
Information  
Data  
Principles  
Generalizations  
Problem Solving  
Thoughts  
Cognitive Behavior

Performance Benefits  
(THINGS)

Performance  
Skill  
Things  
Procedures  
Routines  
Logistics  
Actions  
Psychomotor Behavior

Attitude Benefits  
(PEOPLE)

Attitude  
Values  
People  
Motivation  
Human Relations  
Priorities  
Emotions  
Affective Behavior

In occupational literature, such as the DICTIONARY OF OCCUPATIONAL TITLES, it is usual practice to refer to DATA, PEOPLE, and THINGS. With this framework in mind, it is helpful to remember that normally speaking, knowledge benefits refer to DATA, performance benefits refer to THINGS, and attitude benefits refer to PEOPLE. This simplification should concretize each type of benefit.

After the above analysis of type of benefit, it is in order to ask the following question, "How explicitly do prespecified objectives refer to student benefits?"

Looking at the following four claims will help the reader conceptualize four different levels of student benefit:

- I: Teachers will acquire competency A and competency B as a result of inservice training.
- II: Teachers trained during inservice workshops will exhibit the newly acquired competency A and competency B with increased frequency and increased quality in teaching and educational influence upon learners.
- III: Teachers who have acquired competency A and competency B during inservice workshops will adapt such newly acquired competencies in order to remove environmental barriers that interfere with the success with a newly acquired competency.
- IV: Teachers who have acquired competency A and competency B during inservice workshops will be able to provide evidence and documentation that link up the newly acquired competencies with increased levels of learner success.

As is obvious from overviewing these four levels of competency,

- LEVEL I Improves the teacher as a person acquiring a new competency.
- LEVEL II Improves the teacher as a teacher exercising a new competency in a classroom situation.
- LEVEL III Improves the teacher functioning in a specific school with individualized local constraints.
- LEVEL IV Improves the documentation or evidence that individual learners are benefiting as a result of increased levels of teacher competency directly linked with inservice teacher workshops.

It is important not to become entangled in semantics. In other words, the verbal content of a pre-stated objective helps determine the level of the objective. Similarly, the verbal content of an evaluation item helps determine the level of the evaluation item. Obviously, many pre-stated objectives of which the verbal content is on level I implicitly intend to achieve documented evidence of benefits to learners. The reason for categorizing a specific objective or evaluation item on level I is the explicit verbal content of the statement.

A few examples may be in order. The objective, "The teacher will be able to use slides during lecture presentations," is an example of a level I objective. The evaluation item, "Are you able as a result of this workshop to use slides during a lecture presentation?" is an example of a level II evaluation item. Neither the objective nor the correlated evaluation item asks about how frequently or with what quality a teacher actually used slides during a lecture presentation; this would be a level II inquiry. Neither the objective nor the correlated evaluation item asks whether or not the teacher adapted the slides used to specific local environments, school

policies, student characteristics, subject matter, or topical interest; this would be a level III inquiry. Neither the objective nor the correlated evaluation item inquired about any evidence or documentation that using such slides actually increased the learner gains of students exposed to this new teacher competency; this would be a level IV inquiry.

An example of a level II objective would be, "The teacher will use appropriate slides to accompany lecture presentations with greater frequency and with reasonable quality in the classroom." Obviously, the words appropriate and reasonable are subject to clarification. Nevertheless, the level of this objective is level II. The appropriate evaluation item would be, "Did this teacher in fact use slides in lecture presentations with greater frequency than last year and with observable improvement in the quality of the presentation?" This stress upon teacher as teacher is typical of level II.

An example of a level III objective would be, "The teacher will use slides during a lecture presentation in such a way as to make maximum utilization of available equipment, available projection rooms, and available technicians." This objective on level III may be imperfect when examined from the point of view of conditions, performance, and criteria. However, it does show an attempt to help a teacher overcome difficult or different barriers that vary from school to school. An example of a correlated evaluation item on level III would be, "Did the teacher in fact use existing equipment with existing projection space, and with existing personnel?" Another example of an evaluation item would be, "Did the teacher try to use 35mm slides when the only type of projector available was 16mm?" If the teacher did not correlate the available slides with the available equipment, the teacher is obviously unsuccessful on level III.

An example of a level IV objective would be, "The teacher will be able to document learner gains on specific objectives through increased learner scores on objective multiple choice tests, on performance evaluation instruments, and on attitude scales." Even if a specific multiple choice type question item, a specific performance evaluation instrument, or a specific item on an attitude evaluation questionnaire were called into question, this attempt at documentation meets the requirements of being on level IV. The correlated evaluation item could be, "Did the teacher provide some type of evidence of learner gains?"

This detailed explanation of four level analysis is intended to help readers conceptualize the following listing and categorization of claimed learner gains directly linked to teacher inservice education.

The informed reader is aware of the fact that certain inservice education workshops will explicitly spell out benefits in terms of teacher competencies. These claims will be subjected to TYPE ANALYSIS (for example, knowledge benefits, performance benefits, or attitude benefits) and to LEVEL ANALYSIS (level I, level II, level III, level IV).

After these claimed benefits have been analyzed, the next step would be to find out by sampling students whether or not any direct benefits were achieved as measured by student gains.

It is not inconceivable that certain workshops with claims on level I achieve greater measurable student gains than other workshops with explicitly stated claims on level IV.

On the other hand, it might be found that workshops in which the prestated claimed benefits were explicitly on level IV resulted in greater measurable learner benefits.

One design for measuring learner gains is to categorize learners into two groups:

GROUP A would include learners whose teachers have been trained during inservice education workshops.

GROUP B would include students whose teachers have not been trained during inservice education workshops.

There is a danger to this oversimplified approach. In order to avoid this danger, samples will be developed upon the following divisions:

GROUP X would include students whose teachers possess competency A and competency B.

GROUP X-1 would include students whose teachers have been trained during inservice education workshops.

GROUP X-2 would include students whose teachers have not been trained during inservice education programs.

(Obviously, the teachers referred to in both groups X-1 and X-2 possess the competencies A and B listed above.)

GROUP Y would include students whose teachers do not possess competency A and competency B.

Looking at the above experimental design enables the questionnaire given to students to answer a number of specific questions:

Is there a difference between the success of students taught by a teacher who has attended an inservice program and a teacher who has not attended an inservice program when both teachers possess the same competency?

Is there a difference between the success of students taught by teachers who possess a specific competency and the success of students taught by teachers who do not possess a specific competency?

This type of experimental design enables these and similar questions to be answered with a relatively simple evaluation instrument.

## A RESEARCH DESIGN FOR EVALUATING INSERVICE EDUCATION

### OVERVIEW

This research proposal is designed to

CLASSIFY,

VALIDATE, and

ANALYZE THE COSTS

of inservice teacher education workshops in terms of  
MEASURABLE and EFFECTIVE BENEFITS to OCCUPATIONAL  
STUDENTS following teacher participation in inservice  
courses.



## PREVIOUS RESEARCH

An analysis has been made of inservice education. This analysis has classified the design of evaluation studies into four levels. Each level has its own type of evaluation question :

- LEVEL I            What is the new competency that the teacher has acquired as a result of inservice training? (Or, has the TEACHER ACQUIRED this competency?)
- LEVEL II            What is the frequency and quality with which inservice trained teachers have exhibited the newly acquired competency in teaching and educational influence upon learners?

LEVEL III      What barriers must be removed in hostile and difficult environments in order to make sure that the newly acquired competency is able to foster learner success?

LEVEL IV      What evidence or documentation is available to link up the newly acquired competency with increased levels of learner success?

With this four level classification in mind, it is possible to sum up the available literature by saying that most previous research has been on levels I and II. Very little research is available on levels III and IV.

This research intends to zero in on levels III and IV.

## MAJOR PURPOSES

The purpose of this research is to classify, validate, and analyze the costs of inservice teacher education workshops in terms of measurable and effective benefits to occupational students following teacher participation in inservice courses.

The inservice courses being evaluated in this design are sponsored by the New York State Education Department through the Bureau of Inservice Education.

The benefits being classified, validated, and analyzed by cost benefit are those claimed by institutions and individuals conducting the individual inservice courses in State sponsored workshops.

Since research applies scientific criteria both to asking and answering relevant questions, it is necessary to delineate the questions being asked.

Phase One:

LIST the claimed benefits of teacher inservice courses  
that result in learner gains.

Phase Two:

VALIDATE the presence of these claimed results with  
experimental samples.

Phase Three:

PRICE the validated benefits in a comparative shopping  
tabulation contrasted with value analysis.

The following questions each constitute an essential phase of the research design :

PHASE ONE : What claims are made about benefits of teacher inservice courses that result in learner gains?

PHASE TWO : What evidence or documentation is available to validate the above claimed benefits?

PHASE THREE : Can the validated claims of inservice education be achieved with equal documented quality by alternative programs at less cost?

Each of these research questions can be broken down into directly observable and measurable subquestions.

## PHASE ONE SUBQUESTIONS AND TIME LINE

SUBQUESTION	TIME LINE
1-A What are the <u>names</u> of the benefits claimed by inservice courses in terms of learner gains?	<u>before</u> March 10, 75: <u>analyze</u> and <u>classify</u> sample of 15 <i>inservice</i> courses and stated objectives
1-B How are these claimed benefits <u>defined</u> and <u>measured</u> ?	<u>before</u> April 14, 75: <u>correlate</u> each claim benefit with both local evaluation <i>tool</i> and a research based <u>countable</u> measure
1-C How can these claimed benefits be <u>used</u> <u>to</u> <u>improve</u> existing and planned inservice courses?	<u>before</u> Sept 8, 75: prepare for <u>publi-</u> <u>cation</u> a document entitled

A COMPREHENSIVE LISTING AND CATEGORIZATION  
OF CLAIMED LEARNER GAINS DIRECTLY LINKED  
TO TEACHER INSERVICE EDUCATION

## PHASE TWO SUBQUESTIONS AND TIME LINE

## SUBQUESTION

## TIME LINE

2-A What samples can be used to provide objective measures of the impact of inservice courses on learner gains?

before May 15, 75:  
sample 4 comparable groups with a preassessment instrument based upon results of 1-B

2-B What differences can be measured in the learner gains between STUDENTS WHOSE TEACHERS HAVE RECEIVED INSERVICE TRAINING IN THE SUMMER OF 75 and

before Nov 17, 75:  
resample the 4 experimental and control groups

STUDENTS WHOSE TEACHERS HAVE NOT RECEIVED INSERVICE TRAINING IN THE SUMMER OF 75?

3-C Can the claimed benefits be validated in experimental samples?

before Feb 2, 76:  
statistically analyze the data gathered in 2-B

before Apr 5, 76: prepare for publication a document entitled : A VALIDATION ANALYSIS OF CLAIMED AND DOCUMENTED LEARNER GAINS DIRECTLY LINKED TO TEACHER INSERVICE EDUCATION

## PHASE THREE SUBQUESTIONS AND TIME LINE

SUBQUESTION	TIME LINE
3-A Which student benefits have been claimed and attempted by more than one alternative?	<u>before</u> May 5, 75: correlate each claimed benefit with alternative courses and countable measures
3-B How much does each enumerated benefit cost from available workshop budgets?	<u>before</u> Sept 15, 75: develop a cost benefit model to use in conjunction with results of 2-B
3-C In how many different ways and at how many different costs can documented student benefits be achieved in inservice education?	<u>before</u> July 1, 76: prepare for publication a document entitled :

A COST EFFECTIVENESS ANALYSIS AND  
A VALUE ANALYSIS OF DOCUMENTED  
LEARNER GAINS DIRECTLY LINKED  
TO TEACHER INSERVICE EDUCATION



Phase One:

LIST the claimed benefits of teacher inservice courses  
that result in learner gains.

Product One Title:

A comprehensive listing and categorization of claimed learner  
gains directly linked to teacher inservice education.

Sample of Product One:

The following learner gain benefits are claimed:

<u>Name</u>	<u>Definition</u>	<u>Example</u>	<u>Source</u>
1. Benefit A	A is _____.	Thus, _____	. Teacher trained . Occ. Ed. Director
2. Benefit B	B is _____.	For example _____	. Supervisor (ERIC) . Parents . Teacher Trainer (CIJE) . Outside Evaluators

Phase Two:

VALIDATE the presence of these claimed results in  
experimental samples.

Product of Two Title:

A validation analysis of claimed and documented learner gains  
directly linked to teacher inservice education.

Sample of Product Two:

	<u>Sample 1</u>	<u>Sample 2</u>	<u>Sample 3</u>	<u>Sample 4</u>
1. Benefit A	Yes	Yes	No	Yes
2. Benefit B	No	No	Yes	No
3. Benefit C	No	No	No	No

Phase Three:

PRICE the validated benefits in a comparative shopping tabulation contrasted with value analysis.

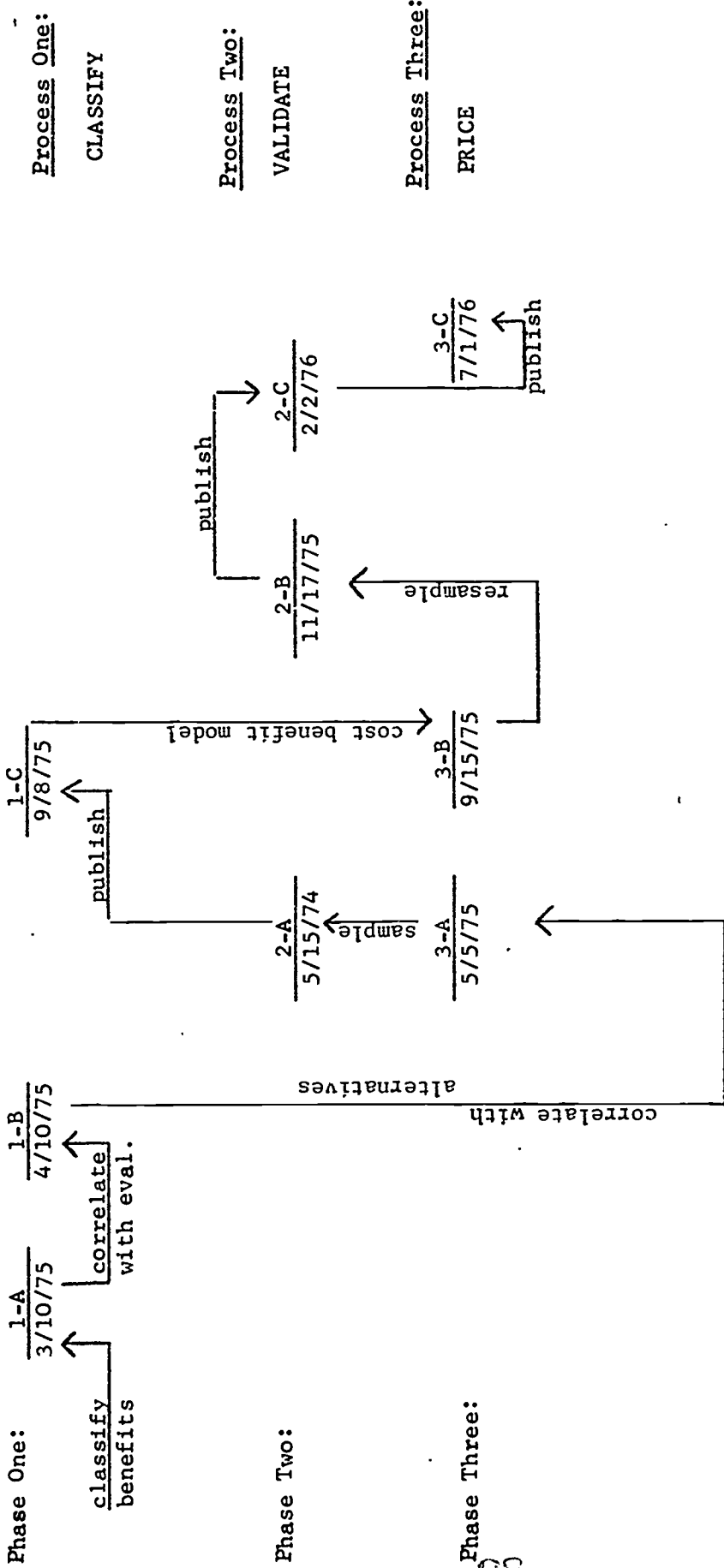
Product Three Title:

A cost effectiveness analysis and a value analysis of documented learner gains directly linked to teacher inservice education.

Sample of Product Three:

<u>Name</u>	<u>ISE Cost</u>	<u>Alternative 1</u>	<u>Alternative 2</u>
1. Benefit A	\$5/pupil	\$1/pupil	\$3/pupil
2. Benefit B	\$15/pupil	\$25/pupil	\$35/pupil
3. Benefit C	\$25/pupil	\$25/pupil	\$26/pupil

INSERVICE EDUCATION OVERALL TIME FRAME AND CRITICAL PATH



## RESEARCH DESIGN

GROUPS: The following groups will be surveyed:

\* GROUP X: Experimental

Group X (Teachers):

- . Teachers selected for training through inservice education courses in the summer of 1975

(who become)

- . Teachers trained through inservice education workshop courses in the summer of 1975

Group X (Students):

- . Students taught by group X teachers

\* GROUP Y: Control

Group Y (Teachers):

- . Teachers neither selected for nor trained through inservice education workshop courses in the summer of 1975

Group Y (Students):

- . Students taught by group Y teachers

This type of sampling presumes that all teachers, both those in group X and those in group Y, have necessary teacher competencies.

This type of sampling tries to measure the difference made by inservice workshop courses on increasing the impact made by teacher competency on learner gains.

SAMPLING TIMETABLE: The following sampling timetable will be used:

APRIL 1975: Teachers in group X and group Y are surveyed with the Form A (Teacher) instrument.

Students of teachers in both group X and group Y are surveyed with the Form A (Student) instrument.

OCTOBER 1975: Half of the teachers in group X and half of the teachers in group Y are surveyed with the Form A (Teacher) instrument.

The other half of group X teachers and the other half of group Y teachers are surveyed with the Form B (Teacher) instrument.

Half of the group X students and half of the group Y students are surveyed with the Form A (Student) instrument.

The other half of group X students and the other half of group Y students are surveyed with the Form B (Student) instrument.

APRIL 1976: Teachers in group X and group Y are surveyed with the Form B (Teacher) instrument.

Students in group X and group Y are surveyed with the Form B (Student) instrument.

ALTERNATE FORMS OF MEASUREMENT INSTRUMENTS: In order to counteract the effect of practice, memorization, and evaluator bias, attempts have been made to develop both Form A and Form B.

PHASE I : FORM A (Teacher and Student) is to be administered in April 1975.

PHASE II : FORM A (Teacher and Student) and FORM B (Teacher and Student) are to be administered in October 1975.

Form A (Teacher) is to be administered to half of the teachers both in group X and in group Y. Form B (Teacher) is to be administered to the other half, selected at random.

The same randomization of Form A (Student) and Form B (Student) will be administered to both group X students and group Y students.

PHASE III : FORM B (Teacher and Student) is to be administered in April 1976.

This test-retest design helps measure the equivalence of Form A and Form B in assessing impact on learners.

NOTE: If the items in the Form A instrument are such that the effects of practice, memorization, and evaluator bias are not statistically significant, later replication may merge Form A and Form B into Form AB. Form AB would then contain the nonduplicative items of Form A and Form B.

AN EVALUATION DESIGN  
FOR  
TEACHER INSERVICE EDUCATION  
IN TERMS  
OF  
BENEFITS TO HIGH SCHOOL LEARNERS

APRIL 1975

SEPTEMBER 1975

APRIL 1976

Form A: Measure

Learner-centered benefits based upon teacher-centered objectives DEVELOPED BY WORKSHOP DIRECTOR

- . Does the teacher perform skill 1 as trained?
  - . Yes / No
  - . Frequency
  - . Quality
- . Does the learner benefit?

Form A:

Same as April 75 but with REVISIONS and ADDITIONS.

Form A:

Same as Sept. 75 but with ADDITIONAL REVISIONS and ADDITIONS.

Form B: In preparation.Form B: MeasureForm B:

Learner-centered benefits based upon NYSED expectations DEVELOPED by Div. of Occ. Ed., BOER, and BISE.

Same as Sept. 75 but with REVISIONS and ADDITIONS.

Part 1

Applicable to all occupational workshop areas

BAE  
BBE  
BDE  
BHOE  
BHEE  
BITE

Part 2

Applicable to one occupational workshop area.

## DEVELOPING FORM A

FOR APRIL 1975

## STEP 1:

Obtain clearance for use of summer 1975 objectives from BISE.

## STEP 2:

Obtain copies of objectives for inservice workshops for summer of 1975 from BISE.

## STEP 3:

Analyze objectives from workshops for summer of 1975 according to the following criteria:

- Appropriate?
- Specific?
- Measurable or countable?
- Reasonable?
- Teacher competency?
- Learner benefit?

## STEP 4:

Communicate the results of the analysis performed in Step 3 to each individual workshop director.

- A. For feedback
- B. For editing
- C. For revision
- D. For improvement

## STEP 5:

Reanalyze the results of the revision performed by workshop directors in Step 4 according to the following criteria:

- A. Appropriate
- B. Specific
- C. Measurable or countable
- D. Reasonable
- E. Teacher competency
- F. Learner benefit



**STEP 6:**

Translate the results of the preceding five steps into form A evaluation items under two general headings:

- A. Teacher-centered objectives
- B. Learner-centered benefits

**STEP 7:**

Edit the draft version of form A in consultation with:

- BISE staff
- BOER chief
- Appropriate occupational education  
bureau chief
- Division of Occupational Education
- Division of Occupational Education Supervision

**STEP 8:**

Conduct the planned April 1975 sampling

**NOTE:** Since it can be anticipated that some of the inservice workshop directors will not cooperate with Step 4 in sufficient time for the April sampling, a MINIMUM of five inservice workshops will be completely processed as specified in steps 1 through 7.

Since BISE requires of each inservice workshop director to provide some type of preassessment in order to pretest the participating teachers, steps will be taken to systematize this data available from BISE as a parallel and equivalent sample to the more formal FORM A.

## THE DISTINCTION BETWEEN FORM A AND FORM B

Form A is derived basically from workshop objectives as developed by the inservice workshop director. Form A is edited and revised by State Education personnel, but the basic data source is the workshop director.

FORM B is basically derived from expectations, criteria, regulations, and concerns derived basically from State Education personnel.

As such, Form B will be concerned with certain findings that are applicable to ALL occupational workshop areas as well as with findings that are applicable ONLY TO ONE occupational workshop area.

The obvious CAVEAT here is the fact that data collected can only be as valuable as the instrument with which the data is collected. This means that both Form A and Form B must be kept as simple as possible in order to facilitate validation.

This means operationally that both Form A and Form B should be:

1. Easy to comprehend and conceptualize
2. Easy for participants to fill out
3. Easy for the workshop director and State Education personnel to summarize and utilize

## STATISTICAL IMPLICATIONS

There are many different ways to analyze data for significance of the difference in order to speed up the availability of the data.

The following steps will be used.

1. The mean will be determined for both group X and group Y.

2. The standard deviation will be determined for both group X and group Y.
3. The standard deviation of the difference between two means will be determined.
4. The difference between the two means will be determined.
5. The difference between the two means will be divided by the standard deviation of the difference.
6. The level of significance will be specified at the 1%, 5%, and 10% level of significance.
7. Differences not significant at least the 1% level of confidence will be marked NS or not significant.
8. On the original evaluation instrument, immediately next to each evaluation, two columns will be appended giving the results of significant tests for both group X and group Y.

#### SAMPLE DATA ANALYSIS

Look at the following sample data analysis.

The first column identifies three different evaluation items. Each of these evaluation items is a different question on Form A.

The second column reveals the results for group X. Group X refers either to teachers trained in inservice education workshops or to students taught by teachers trained in inservice education workshops.

The third column gives the results for group Y. Group Y refers to teachers not trained in inservice education workshops and to students taught by teachers not trained in inservice education workshops.

	GROUP X	GROUP Y
ITEM 1	5%	
ITEM 2		1%
ITEM 3	NS	NS

Looking at the above data shows three different possible results of the April 1975 testing.

It must be noted that during the April 1975 testing, group X refers to teachers that are going to participate in inservice education workshops during the summer of 1975.

ITEM 1 gives the situation wherein on one specific test item, group X was superior to group Y at the 5% level of confidence. If the vast majority of test items come out with group X superior at the start of the measurement, then obviously the experimentation is stacked in favor of group Y.

ITEM 2 gives an example wherein, on one specific test item, group Y was obviously superior to group X.

ITEM 3 gives the desirable situation wherein, at the beginning of the experimentation, both group X and group Y are equivalent. Equivalent means that on the variables under study, there is no statistically significant difference between group X and group Y.

Conducting the Survey

Select BOCES (and other eligible districts)

- A. BOCES with applicants
  - 1) BOCES with applicants accepted
  - 2) BOCES with applicants rejected
- B. BOCES with no applicants

INSERVICE BENEFITS, NEEDS, AND PRIORITY ASSESSMENTS

<p>Claimed Overall Inservice Benefits (Summer 1975)</p>	<p>% of teachers who need this benefit</p>	<p>% of teachers who already possess this competency</p>	<p>% of teachers for whom this benefit is NOT APPLICABLE</p>	<p>% of students who need this benefit</p>	<p>% of students who already possess this competency</p>	<p>% of students for whom this benefit is NOT APPLICABLE</p>	<p><u>Priority Rank</u>  1 = Highest priority  Start with 1 and work down to rank all benefits.</p>
<p>A. DATA: Participants will update themselves with the latest trends and information.</p>							<p>A</p>
<p>B. PEOPLE: Participants will exchange with one another a wide variety of unique and individualizing approaches</p>							<p>B</p>
<p>C. THINGS: Participants will acquire new and needed hands-on skills that reflect the best available occupational practices</p>							<p>C</p>
<p>D. OCCUPATIONAL AREA:  Update participants in the area of:  D-1 Agriculture Education D-2 Business Education D-3 Distributive Education D-4 Health Occupations Ed. D-5 Home Economics Education D-6 Trade &amp; Technical Ed.</p>							<p>Rank A, B and C with 1, 2 and 3</p> <p>D-1</p> <p>D-2</p> <p>D-3</p> <p>D-4</p> <p>D-5</p> <p>D-6</p> <p>Rank D-1 to D-6 with 1, 2, 3, 4, 5 and 6</p>
<p>E. WORKSHOP TOPIC:  Topic 1: Topic 2: . . . Topic N</p>							<p>Topic 1</p> <p>Topic 2</p> <p>⋮</p> <p>Topic N</p> <p>Rank workshop topics 1 to N with 1, 2, 3....n</p>
<p>Please round off the above percentages to the nearest 10;</p>							

WORKSHOPS, OCCUPATIONAL BUREAU, AND SPECIALTY

Number of Eligibles, Applicants, Accepts Per BOCES	Workshop 1 Area: BAE Horticulture	Workshop 2 Area: BBE Bookkeeping	Workshop 3 Area: BDE Marketing	Workshop 4 Area: BHOE Trends	Workshop 5 Area: BHEE Modules	Workshop 6 Area: BTE Welding	.	.	.	Workshop x Area: Bxxx Specialty	TOTAL Per BOCES
	BOCES A										
	BOCES B										
	BOCES C										
	BOCES D										
	BOCES E										
	BOCES F										
	BOCES G										
	BOCES H										
	BOCES I										
	.										
	.										
.											
BOCES N									x-y-z	BOCES	
Total Per Occupational Specialty Area									Spec.		

## SAMPLE EVALUATION POSSIBILITIES

Internal  
External

Survey  
Questionnaire  
Teacher evaluation  
Checklist  
Observation  
Anecdotal  
Rating scales  
State forms  
Psychologist

Achievement pretesting  
Achievement posttesting  
Behavioral change

Count :

- # time service used
- # participants
- # using services
- # service units
- # phone inquiries
- # hours of service
- # spontaneous plaudits



INSERVICE WORKSHOPS EVALUATION DESIGN

Spring - Summer 1975

Workshop Director

does the following:

1. Develops purposes, goals, objectives, benefits, processes, plans, products, or reasons for the workshop in concert with staff.
  
2. Approves an individualized evaluation instrument developed, revised, or selected by workshop staff as an acceptable yardstick of success (i.e., measurable gains).
  
3. Surveys:
  - a. each staff member and participant with the approved evaluation instrument at least at the end of the workshop
  - b. administrators, teachers, and students to measure impact upon classroom instruction and learning

BOER Evaluator

does the following:

1. Analyzes workshop expectations to see if
  - a. appropriate to inservice education
  - b. specific
  - c. measurable or countable
  - d. reasonable
  
2. Correlates:
  - a. each evaluation item with the prespecified expectations of the workshop
  - b. each workshop expectation and evaluation item with a measurable learner benefit acceptable to the workshop director
  
3. Samples independently in October 1975 following workshop
  - a. staff members and director
  - b. supervisors or administrators
  - c. workshop participants (classroom teachers)
  - d. non-participants (classroom teachers)
  - e. students (of participants)
  - f. students (of non-participants)

DEVELOP WORKSHOP PLANS

Benefit A                   - - - - -  
Benefit B                   - - - - -  
Benefit C                   - - - - -  
Benefit D                   - - - - -  
Benefit E                   - - - - -

APPROVE EVALUATION INSTRUMENT

Item 1                   - - - - -  
2                       - - - - -  
3                       - - - - -  
4                       - - - - -  
5                       - - - - -  
6                       - - - - -  
7                       - - - - -  
8                       - - - - -  
9                       - - - - -  
10                      - - - - -  
11                      - - - - -  
12                      - - - - -

ANALYZE BENEFITS

	Appropriate	Specific	Measurable or Countable	Reasonable
Benefit A	?	No	?	Yes
Benefit B	Yes	Yes	Yes	Yes
Benefit C	Yes	?	No	?
Benefit D	No	Yes	Yes	No
Benefit E	Yes	Yes	Yes	No

CORRELATE EVALUATION ITEMS AND BENEFITS

Benefit A            is measured by:

Item 10

Item 11

Benefit B            is measured by:

Item 1

Item 5

Item 9

Benefit C            is measured by:

Item 2

Benefit D            is measured by:

Item 3

Item 7

Benefit E            is measured by:

Item 4

Item 6

Item 8

Item 12

CORRELATE SAMPLING INSTRUMENT WITH  
WORKSHOP EVALUATION INSTRUMENT

CODING

Letter Code	Description	Evaluation Item
1	Teacher performs	Did you as a teacher perform competency 1?
1a	Teacher is observed performing	Did the teacher being observed perform competency 1?
1b	Learner performs	Did you as a student acquire success 1?
1c	Learner is observed performing	Did your students acquire success 1?

Workshop Instrument	Workshop Participant	FOLLOWUP PARALLEL SAMPLES						
		Work. Dir.	Workshop Staff	Supyrs of Admin.	Partici-pants	Non-Part.	Stud. of Part.	Stud. of Non-part.
Item 1	1	1a	1a	1a	1	1	1b	1b
Item 2	2	2c	2c	2c	2c	2c	2b	2b
Item 3	3	3a	3a	3a	3	3	3a	3a
Item 4	4	4c	4c	4c	4c	4c	4a	4a
Item 5	5	5a	5a	5a	5	5	5b	5b
Item 6	6	6c	6c	6c	6c	6c	6a	6a
Item 7	7	7a	7a	7a	7	7	7a	7a
Item 8	8	8c	8c	8c	8c	8c	8a	8a
Item 9	9	9a	9a	9a	9	9	9b	9b
Item 10	10	10a	10a	10a	10	10a	10b	10b
Item 11	11	11a	11a	11a	11	11a	11b	11b
Item 12	12	12c	12c	12c	12c	12c	12b	12b

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SAMPLE RESULTS

Benefit Claimed	Evaluation	Wkshop Dir.	Wkshop Staff	Supvrs <sup>OF</sup> Admin.	Parti- cipants	Non- Part.	Stud. of Part.	Stud. of Non-part.
A	Item 10	100%	75%	60%	50%	40%	30%	31%
	Item 11	0	0	40	50	10	70	10
B	Item 1	100	80	10	10	30	15	30
	Item 5	100	80	80	70	30	60	20
	Item 9	100	80	85	75	25	65	25
C	Item 2	100	50	55	55	40	52	51
D	Item 3	100	50	40	30	30	15	5
	Item 7	0	25	30	20	15	20	31
E	Item 4	0	0	10	20	10	30	10
	Item 6	100	80	70	80	40	70	30
	Item 8	0	60	70	90	30	80	20
	Item 12	100	80	70	80	40	70	20

ANALYSIS

Benefit A = ?  
 Benefit B = Yes  
 Benefit C = ?  
 Benefit D = No  
 Benefit E = Yes

## BTT EVALUATION MODEL

For each workshop, three evaluation forms will be developed:

Pre-assessment form  
End of session evaluation form  
Post-assessment form

For each of these forms, a review will be conducted by BTT and BOER to determine the need for supplemental questions, if any.

For each of these forms, a certain overlap is expected from the fact that specific questions may appear on all three forms. This overlap is really a sequential followup in order to pinpoint progress.

From a systematic point of view, it is hoped that written evaluation instruments will suffice to elicit the proper data from participants performing the evaluation.

In order to verify this assumption, data collected from on site evaluators will be compared with the data gathered through written evaluation instruments.

## WORKSHOP CHARACTERISTICS

The new format of workshops will consist of having five one-day sessions spaced throughout the school year and conducted by colleges with teachers who have been previously exposed to the one-week workshop format.

The above format can be subdivided into four characteristics:

1. Five one-day workshops
2. Spaced throughout the school year
3. Conducted by colleges
4. For teachers who have experienced the one-week workshop format

Each of these dimensions poses a certain number of evaluation questions:

DIMENSION 1: FIVE ONE-DAY WORKSHOPS

- A. Is this format more or less productive?
- B. In what way?
- C. What is the effect upon the continuity of content and attendance?

DIMENSION 2: SPACED THROUGHOUT THE SCHOOL YEAR

- A. Can better services be rendered during the school year or at the end of the school year?
- B. What are the administrative changes at the local level and at the State education level?
- C. What is the overall effect of such an arrangement on sending schools?

DIMENSION 3: CONDUCTED BY COLLEGES

- A. Do people who don't need credit attend these workshops?
- B. Why do people attend these workshops?
- C. Does the academic credit earned at these workshops count towards a salary increment?

DIMENSION 4: TEACHERS WHO HAVE ATTENDED WEEK LONG SUMMER SESSIONS

- A. Can the week long summer sessions be compared with the five one-day sessions spaced throughout the school year?
- B. For which objectives or purposes are the week long summer workshops more appropriate?
- C. For which objectives or purposes are the five one-day workshops spaced throughout the school year more appropriate?
- D. How do teachers perceive each of these two contrasting workshop formats?



## WORKSHOP CHARACTERISTICS

The new workshop format will be characterized by the following dimensions: (1) five one-day sessions; (2) spaced throughout the school year; (3) conducted in colleges; (4) attended by teachers previously exposed to the one-week workshop format; and (5) offering college credit to workshop participants.

Each of the above dimensions poses a certain number of evaluation questions:

### DIMENSION 1: FIVE ONE-DAY WORKSHOPS

- A. Is this format productive?
- B. In what way?
- C. What is the effect upon the continuity of content and attendance?

### DIMENSION 2: SPACED THROUGHOUT THE SCHOOL YEAR

- A. Can better services be rendered during the school year or at the end of the school year?
- B. What are the administrative change implications of these workshops at the local level and at the State education level?
- C. What is the overall effect of such an arrangement on sending schools?

### DIMENSION 3: CONDUCTED IN COLLEGES

- A. Do people who don't need credit attend these workshops?
- B. Why do people attend these workshops?
- C. Does the academic credit earned at these workshops count towards a salary increment?

### DIMENSION 4: ATTENDED BY TEACHERS PREVIOUSLY EXPOSED TO ONE-WEEK WORKSHOP FORMAT

- A. Can the week long summer sessions be compared with the five one-day sessions spaced throughout the school year?
- B. For which inservice education objectives or purposes are the week long summer workshops more appropriate?
- C. For which inservice education objectives or purposes are the five one-day workshops spaced throughout the school year more appropriate?
- D. How do teachers perceive each of these two contrasting workshop formats?

### DIMENSION 5: OFFERING COLLEGE CREDIT TO WORKSHOP PARTICIPANTS

- A. Does college credit increase the practical value of these workshops?
- B. How is graduate credit distinguished from undergraduate credit?

## CONCLUSIONS

This document has contained both general and technical explanations.

The general explanations are found on pages 1-8.

The technical explanations are found on pages 9-42.

As always, the result of reading such a document is the whetting of the appetite of the reader.

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