

EVALUATING PERFORMANCE TRAINING METHODS:
A MANUAL FOR TEACHER TRAINERS

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Stephen McLaughlin

Jeanne Moulton

Center for International Education

University of Massachusetts

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Our experience has shown, above all, that each situation is unique and that, like every educational tool, this manual must be adapted by those who use it, to satisfy their particular requirements.

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INTRODUCTION

What is the purpose of the manual?

This manual is designed to help those who are concerned with training teachers (teacher educators, administrators, supervisors) to evaluate one of the most important aspects of a teacher training program the training methods. Specifically, the manual provides techniques for evaluating behavioral or performance training methods.* This manual is thus intended for those teacher educators who have begun to use performance training methods and want to become better able to evaluate the success of those methods in their programs.

Performance behavioral training is still a relatively little known area of teacher training which focuses specifically on the teacher's behavior in the classroom. Its purpose is to help a teacher trainee produce a variety of desired teaching behaviors. The basic ingredients common to all performance training methods are:

- 1) an instructional objective
- 2) an immediate feedback device

both of which will be explained later in the manual.

During the last fifteen years, schools of education and teacher training institutes have developed a variety of these performance training methods, such

*Although the terms "behavioral" and "performance" can be used interchangeably, the term "performance" will be used in this manual.

as micro-teaching, simulations, interaction analysis, and other classroom observation instruments, which teacher trainers around the world are beginning to use with success. Those familiar with these methods often find them intellectually fascinating but are sometimes skeptical about their effectiveness as tools to train better teachers. This manual is designed to help teacher educators evaluate the usefulness of some of these techniques and suggest ways to modify the use of them to better suit their own purposes.

Why is there a need for evaluation?

Wanting to know how well things are working is a natural human concern. Whether our goal is to learn how to swim, how to drive a car, or how to put a rocket on the moon, the more frequent and comprehensive the feedback we get about our performance, the more easily and quickly we can improve upon that performance and accomplish our goals. The same holds true for training teachers, where these evaluation functions are performed almost daily. Since graduates of teacher training programs are expected to meet certain levels of performance, their skills must be assessed regularly during the course of their training to insure that they are, in fact, reaching those levels.

But besides assessing the skills of their trainees, teacher educators also need to know how well their training methods are working, since these ultimately reflect the kinds of skills their trainees will acquire. The success of teacher educators in preparing good teachers depends, in part, on their ability to evaluate the effectiveness of the training methods they use and to make modifications that would maximize their efficiency.

The need to evaluate training methods, however, has not always assumed the importance it now has. For years, teacher educators depended solely on the training methods of (1) lectures, (2) assigned readings and (3) varying amounts of practice teaching. The effectiveness of these methods

was rarely evaluated, because they were so rooted in tradition that little need was felt to question their value.

Evaluation of performance training methods is especially necessary. These methods have usually been developed at universities or teacher training colleges in the United States or Europe and, as such, bear the indelible stamp of those cultures and their values. However, the conditions under which teacher training programs in developing countries take place differ enormously from those in Western universities. In fact, they differ from one another, even within a single geographical region. Accordingly, a method that has been transplanted and applied uncritically to one program cannot be expected to have the same effect as it would have in another program in either the West or in the same region. By using this manual, teacher educators will be better able to evaluate the effectiveness of any one of these performance training methods in their own programs.

In what ways have trainers acted as evaluators?

It is difficult to imagine a teacher educator who is not interested in the direction in which his program and his trainees are progressing. Indeed, every teacher educator evaluates his success in some way. But the worth of some evaluation techniques* that educators use could be seriously questioned.

One evaluation technique might be labeled "faith". In other words, the teacher educator believes, either because he has been told or because he has decided for some reason, that the training method he uses is effective in moving his students in the direction desired. For example, he may think that if his students can successfully pass a variety of written tests that they will have successfully mastered the behavioral skills of teaching as well. Another

*The terms "method" and "technique" are nearly synonymous. In this manual, the term "method" will be used in conjunction with training, and the term "technique" with evaluation, in order to avoid possible confusion.

technique might be called "numbers". Using this, the educator judges the success of his program on the number of its graduates, or the number who find jobs, or the number who pass tests, and so on. A third technique is personal judgment. The teacher educator might rely entirely on his own opinion of which direction the trainees are moving, without subjecting such opinion to the challenges of others or to any systematic evidence. One more technique might be named "smooth sailing". Using this technique, the teacher educator knows he is on the track as long as no one--trainees, colleagues, or officials in schools--indicates that they oppose the direction of the program, or, if they do, the program is modified accordingly.

All of those evaluation techniques give teacher educators some indication of the success of their training methods. But many have become dissatisfied with this kind of approach and are turning to more reliable evaluation techniques. It is the goal of this manual to present to teacher educators a procedure that will enable them to make a more systematic and accurate evaluation of their use of performance training methods than has commonly been the case in the past.

What is the format of the manual?

There are three main sections in the manual. The first is a survey of some of the performance training methods which have become familiar to teacher educators in recent years. The second is a discussion of some of the criteria or indicators which might be selected to evaluate performance training methods, including indicators that reflect the capacity of the methods to meet the objectives as well as those that concern some of the outcomes or impact of the skills that are being taught. The third section introduces some tools for evaluating the effectiveness of performance training methods in meeting the training objectives and for determining if and/or how to modify the methods to better achieve the objectives.

What will the manual not do?

We might conceive of the teacher training process as a sequence of concerns or questions.

Why do we train teachers?

What is a good teacher?

What are our training objectives?

What methods shall we use to train them?

How can we judge the effectiveness of our methods?

How can we modify them to better meet our objectives?

The manual assumes that the teacher educator has already answered--or is continually reanswering--the first four questions in this sequence. It assumes that he is serving in the teacher training program because he believes it has some value for the country, that he has a picture in his mind of a good teacher, as well as certain ideas about how to train good teachers, that he has set training objectives based on those ideas and has chosen some training methods--in this case performance training methods--to accomplish those objectives.

Therefore, answering the first four questions of the sequence falls outside the scope of this manual.* Very little help is provided in identifying a good teacher or in deciding what objectives to select or even in learning about all available performance training methods and materials .

What the manual does offer is assistance in assessing the effectiveness of performance training methods in meeting some of the objectives of the program. The reader should note that, although the manual suggests a variety of indicators on which the overall success of performance training methods

*If the teacher educator has not finished answering these questions, it would be profitable to do so before proceeding.

might be evaluated, the actual evaluation procedure described here includes only those indicators which reflect the extent to which the performance training program is accomplishing its objectives. The manual will not provide any assistance in answering questions related to the appropriateness of the objectives or the impact of the training for a particular setting. The teacher educator who wishes to measure these dimensions of his program should consult other sources for evaluation techniques that focus on these variables.

The scope of the manual is limited in another sense--that is, in the range of teaching skills to which the procedures described herein can be applied. Many teacher educators distinguish three major skill areas that are involved in training competent teachers:

1. curriculum skills--knowing what to teach and in what sequence to teach it;
2. materials skills--preparing instructional materials that will enhance the pupil's understanding of the content;
3. instructional skills--effectively utilizing teaching strategies, techniques, and procedures to facilitate the learning of pupils in the classroom.

While examples in the manual will occasionally reflect the interdependence of the three skill areas, the manual focuses primarily on the third of the three, the instructional skills. Performance training methods are, by definition, concerned with a teacher's classroom behavior, i.e., the ability to create and manage learning opportunities where pupils can successfully acquire new knowledge and skills. By providing procedures to help assess the effectiveness of performance training methods, the manual serves as a tool to those teacher educators who wish to devote special attention to the inculcation of these instructional skills in their trainees.

CHAPTER IPERFORMANCE TRAINING METHODS

Teacher educators have for years sought an effective way to implant in their own trainees some of the unique qualities that are commonly found only in the most gifted and imaginative classroom teachers. Formerly, it was thought that trainees might absorb these qualities through a process of osmosis during the course of an extended tutelage with a master teacher. However, as helpful as it was to have some of the more obvious attributes of a master teacher rub off on young trainees, this approach suffered from the lack any reliable tools to help trainees see that the teacher's performance was really a combination of his personality, skill, and experience blended into a highly individualized teaching style. The breakthrough on this problem came when teacher educators, borrowing from American military training during World War II, discovered that a complicated skill like teaching could be more easily taught when approached, not just as an application of theoretical principles, but as a synthesis of clearly identifiable behaviors designed to effect certain results. This realization provided the basis for a whole new movement in teacher education ~~which has considerably broadened and strengthened teacher training methodology.~~ The name of this new approach is performance training.

What is the theoretical basis for performance training methods?

Traditionally, teacher training has consisted of two or three main parts: subject area courses, such as science, math and history, practice teaching in the classroom, and sometimes foundations of education. Foundations and subject area courses have been taught predominantly through lectures and assigned readings, and practice teaching has given the trainee experience in a real classroom with supervision. In foundations courses, trainees have studied psychology, sociology, and the philosophy and history of education,

which provided them with a rudimentary knowledge of the teaching profession. In subject area courses, they have learned enough information about their subject to qualify them to teach it, when supplemented with training in curriculum development and the preparation of relevant instructional materials.

Such a program has sometimes been characterized as "theoretical discussions followed with trial by fire," since it usually neglected to give trainees any instructional or classroom performance skills. Over the past decade, however, the inclusion of the performance skills in teacher training programs has increased. The means of imparting these skills to student teachers are often performance training methods--that is, methods by which student teachers learn the skills by actually doing them. Among the most commonly used performance training methods in many teacher training programs are:

1. micro-teaching
2. interaction analysis
3. simulations.

Performance training methods are those in which:

1. the trainee takes an active part (performs or "exhibits behavior") as part of the method, and
2. the trainee's behavior can be observed clearly enough to indicate whether or not he has reached the objective.
3. Consequently, changes in the trainee's behavior can be observed; such changes help to indicate whether the training methods used have helped him meet the training goal.

The use of performance training methods to teach performance skills is grounded in the theory and research about how people learn. Some of the more important theoretical foundations are:

1. People learn by practicing actual teacher behaviors. In other words

when trainees are required to become actually involved in the lesson rather than merely listening or watching an instructor, their learning will be increased.

2. People learn best when instructional goals are made manageable and realistic. Performance training methods allow trainees to attempt certain teaching skills as separate behaviors before they are expected to use them amidst the complexities of the actual classroom situation.

3. The transfer of knowledge to a person is more likely if the recipient sees the relationship of that knowledge to himself. When the trainees are asked to practice certain skills as a part of their training, they can see more readily the application to their own behavior of what might otherwise be theoretical concepts or abstract information concerning the teaching/learning process.

These three along with other points in learning theory substantiate the success that has been found in using performance training methods to teach instructional skills to student teachers. One must not overlook, however, that another crucial finding of research on learning suggests that different people learn by different means, and that one cannot expect all trainees to profit equally from the same methods. Maximum student learning (defined as change in behavior and/or perception) is the ultimate criterion against which any teaching strategy must be measured.

What is micro-teaching?

Micro-teaching is a performance training method designed to isolate the component parts of the teaching process, so that the trainee can master each component one by one in a simplified teaching situation. Micro-teaching is "micro" in class size, lesson length and teaching skills involved. A typical micro-teaching session might use from four to six students; the lesson might last from 5 to 10 minutes; the specific teaching skills being practiced might

be limited to one or two, such as asking probing questions or introducing the lesson.

In addition to possible variations in size, length, and skills practiced, a micro-teaching session might have several other dimensions. For example, often the trainee is asked to teach the lesson and then to do it again (reteach) immediately after receiving feedback on his performance from the supervisor, from his peers, from pupils, or some combination of the three. A video-tape recording of the lesson can also be made, which then enables the trainee to observe and critique his own performance. In some cases, the pupils may be asked to fill out written feedback forms. All of these alternatives are optional, however; the essential feature of micro-teaching is its reduction of the complexity of teaching into learning tasks of manageable proportions.

What is interaction analysis?

Interaction analysis is a performance training method which allows the trainee to observe the number and kind of interactions that take place in the classroom. Interaction analysis might be done by someone who observes the trainee's own performance, by the trainee himself on other teachers' performances, or, with the aid of audio or visual recording devices, on his own performance. The method always requires an observer, who has a form on which the actions of the teacher and pupils in the classroom can be systematically recorded every few seconds.

There are many interactions which might be observed. In the Flanders system of interaction analysis, which is one of the most popular, the observer notes every three seconds the action occurring--whether the teacher is speaking, a student is asking a question, the teacher is asking a question, there is silence, and so on. One purpose of this kind of analysis is to determine the amount of time the teacher talks in proportion to the

amount of time students talk. Another purpose is to determine the nature of the interactions--whether they are teachers' questions and students' answers, students' questions and teachers' answers, students' questions of each other, and so on.

The nature of the interaction being observed and analyzed can vary considerably, as can the format for recording the interactions, the use of audio and video recording devices, the length of intervals between recorded observations, and the purpose of the analysis. In every case, though, interaction analysis is a performance training method used to help the trainee become aware of the interpersonal dynamics in his classroom and of how to influence those dynamics.

What are simulations?

Simulations are performance training methods in which the trainee must solve a classroom problem which is set up artificially through the means of games, films or other media. This method allows the trainee to perform in a classroom situation as if it were real, without risking the consequences of trying out solutions to the problem in a real situation.

In one kind of simulation, vignettes of classroom discipline problems are presented on 8mm film, and the action is stopped just short of a solution to the problem. The trainee is asked to act out or describe how he would solve the problem.

In another kind of simulation, called role playing, other trainees or selected students are instructed to act out certain roles in order to create a problem situation. There are many other kinds of simulations, all of which are performance training methods because they require the trainee to demonstrate his classroom skill through a simulated performance.

What are different levels of utilization of performance training methods?

Performance training methods have been used to varying degrees in those training programs where they have been introduced. In some programs, for instance, performance training methods are still considered highly experimental and have not yet advanced beyond even minimal levels of use. At the other end of the spectrum, however, are those training programs in which performance training methods are given a high priority at every stage of the training process. In between the two are a large number of programs in which performance training methods are employed to some extent during the training experience.

Teacher educators who are undecided about how to incorporate performance training methods into their own programs may find it helpful to distinguish between these different levels of utilization of performance training methods. The characteristics of the different levels are reflected in a number of ways, including the number of tutors making use of performance training methods, the extent to which the methods have been integrated into the curriculum, the time devoted to them, as well as the amount and kind of program resources (e.g., pupils, supervisors, hardware, materials, technical assistance, etc.) that are allocated for their use. The following discussion describes more explicitly some of these differences for three distinct levels of utilization of performance training methods, ranging from minimal use, to moderate use, to intensive use.

Minimal use of performance training methods

Programs in which performance training methods have been only minimally utilized are characterized by:

- Relatively low level of acceptance of the methods and a generally low level of energy put into the performance training component
- Little or no modification of the curriculum to recognize performance training as a legitimate subject of study

-- Little or no modification in course scheduling to accommodate more than one tutor using performance training methods. Reliance instead on individual tutors fitting performance training into their own classes

-- Lack of any special building or room in which to conduct performance training sessions

-- Small amounts of hardware--typically, one audio tape recorder--available for performance training purposes

-- Little or no use of real classroom pupils, supervisors, or technicians in performance training sessions

In this situation, the individual tutor(s) who is already using performance training methods should probably focus his efforts on improving the use of them in his own classroom. For example, the tutor might consider breaking his class into a series of small groups which could then separately practice various teaching skills using micro-teaching with peers as students. Even in the absence of any audio-visual equipment, feedback for micro-teaching could be supplied by the tutor rotating between groups or by peer observers in each group.

Moderate use of performance training methods

Programs in which performance training methods are used to a moderate degree are characterized by:

-- General acceptance of the value of performance training, but implementation stopping short of a full programmatic commitment to the concept

-- Some modification of the curriculum to partially assimilate performance training into the course of study. Short time periods--typically, one or two months--set aside for the performance training component

-- Some modification of course scheduling to accommodate more than
 -- one tutor using performance training methods, permitting skill
 -- training across subject areas.

-- Existence of at least one special room or lab in which to conduct
 -- performance training methods

-- Moderate amounts of hardware--for example, two audio tape recorders
 -- and two video tape recorders--available for performance training
 -- purposes

-- Limited use of real classroom pupils, supervisors, and technicians
 -- in performance training sessions.

In this setting, teacher educators utilizing performance training methods have the opportunity of establishing a reasonably effective performance training component. Several tutors can co-operate to design a program which focuses not only on general teaching skills but skills that are specific to particular subject areas. They can also introduce real classroom pupils into performance training sessions on a regular basis to lend realism to the training. Even if there is not sufficient equipment to video-tape trainees every time they micro-teach, it is still possible to arrange the scheduling so that they can all be taped at some regular interval, while making extensive use of peer observation in between.

Intensive use of performance training methods

Programs in which performance training methods are intensively used are characterized by:

-- Complete acceptance of the value of performance training and full
 -- programmatic commitment to the concept

-- Extensive modification of the curriculum to afford performance
 -- training a significant place in the program

-- Extensive modification in course scheduling to permit wide flexibility in designing performance training sessions. Lengthy time periods--commonly two to three hours daily--available for performance training

-- Existence of several fully-equipped micro-teaching rooms in which to conduct performance training sessions

-- Ample amounts of several different kinds of instructional hardware available for performance training purposes. Video and audio tapes of positive models available to help trainees develop their skills

-- Extensive use of real classroom pupils, supervisors, and technicians in performance training sessions

In this setting, performance training is regarded as a major element in preparing good teachers, so the program is designed accordingly. Broad cooperation between subject area studies and teaching methods training is encouraged. The ample equipment and facilities make it possible to run a truly systematic performance training component. Not only can trainees be taped on a regular basis but protocol tapes modelling various teaching skills can be produced. The extensive use of real classroom pupils in performance training sessions along with the backup support of specially trained lab supervisors and technicians provide a level of realism, individual attention, and professionalism that would be difficult to match in even the best of conventional programs. Performance training in this context, combined with an extended practice teaching experience, is a particularly powerful form of teacher education.

What are some of the problems with performance training methods?

Like the more traditional kinds of training methods, performance training methods also have problems which sometimes affect their usefulness in particular training programs. Some general characteristics and/or

problems of performance training methods which the teacher educator ought to be aware of are:

- 1. Every kind of training method provides a certain amount of control by the tutor over what the trainee is expected to learn, as well as certain criteria by which his learning can be judged. This is true, too, of performance training methods. Therefore, the chance always exists that the objectives for which they are designed might not be appropriate or that the methods might not be suitable in meeting particular training objectives.
- 2. Performance training methods are new to most teacher training institutions, and consequently carry with them the strategic problems of introducing any sort of innovation.
- 3. Educators who have developed methods for training teachers to teach in Western schools sometimes have difficulty applying their expertise to new situations which have problems and resources quite different from those they know well.
- 4. The use of materials that have been produced in places other than the local setting can be meaningless or confusing to student teachers who know only their own environment. Whenever possible, materials should be made locally.
- 5. The success of audio-visual and other materials depends very much on their quality. Therefore, the program must provide both the skilled personnel and the equipment necessary to produce

interesting and effective tapes, films and displays.

- 6. In order for video-tape equipment and other hardware to be used effectively and efficiently in a program, the following conditions must be met:
 - the teacher training institution must allocate the money, time and space for the activities for which the equipment is to be used;
 - tutors and supervisors must be given guidance in using the methods and technicians must be trained to run and maintain the equipment.

- 7. Performance training methods generally are used with small groups. Several related logistical problems must be solved, including the scheduling of tutors when they are available and arranging for space suitable for doing small group work.

- 8. The teaching act is far more complex than the mere acquisition of a set of critical teaching skills through performance training methods. While mastery of these skills may be a necessary part of the process of becoming a good teacher, it is not sufficient to guarantee that a good teacher will result.

In addition to the general problems discussed above, specific difficulties often arise while using particular performance training methods. The following is a list of some of the more common problems teacher educators have faced:

Micro-teaching

- 1. The shorter lesson length and smaller class size of micro-teaching sessions compared to real classroom situations may cause adjustment problems for some trainees, requiring tutors to find ways to help trainees become accustomed to the scaled-down dimensions.
- 2. While discipline is a significant problem in real classrooms, it does not occur frequently in the micro-teaching situation so must be dealt with elsewhere in the teacher training curriculum.
- 3. The presence of video tape equipment in the classroom sometimes interferes with the teacher's and the pupils' concentration on the lesson.
- 4. When real pupils are not available, student teachers must practice with their peers, resulting in a loss of realism in the micro-teaching experience.
- 5. The logistic demands of scheduling video-taping and small group work can become annoying to some tutors and create in them a bad attitude toward the whole method.
- 6. The use of micro-teaching without video-tape equipment or any equipment at all may appear to be a problem for some teacher educators. However, the micro-teaching concept is just as functional in the no-equipment situation as in the fully-equipped program--

the impetus is upon the teacher educator to discover for himself the best way to adopt the concept to his own situation.

Interaction Analysis

- 1. Accurate and complex observation of classroom verbal interaction demands adequate training of observers, which can be time consuming and costly.
- 2. Any classroom observation technique rests on certain assumptions about (a) what is worth observing and (b) what are desirable behaviors. These assumptions may not be appropriate to the particular situation in which they are applied.
- 3. The presence of classroom observers might interfere with the teacher's and the pupil's concentration on the lesson.

Simulations

- 1. Creating a simulation that dramatizes the essential situation or problem of concern requires much skill and practice. Too often simulations are not effective because they fail to hit on critical incidents or key issues.
- 2. Participants in a role play must have some willingness and ability to "act" -- to pretend they are in the situation being portrayed. Role plays that are not well-acted or well-planned will not be believable to trainees.

- 3. To be maximally effective, a simulation should be followed by a discussion among participants of what occurred and what lessons are to be learned from it. This requires a skilled discussion leader.

CHAPTER IIINDICATORS FOR EVALUATION OF PERFORMANCE TRAINING METHODSWhat are indicators?

Evaluation involves the collection of information about the performance of whatever program component or operation that decision-makers in the program wish to assess. However, not all information that may be collected is necessarily relevant or useful for a given evaluation task. Criteria must be selected that will define what is relevant information. These criteria, or indicators, as they are sometimes called, provide the points of reference against which the effectiveness of the performance-based program to be evaluated can be measured.

There are numerous indicators that might conceivably be useful to a teacher educator who is evaluating performance training methods in his program. He will need to choose from among them, a set of indicators that represent some of the major variables that effect the overall success of performance training methods, both in terms of the program itself and in relation to other factors outside the program. While several indicators that are likely to be important to many teacher educators will be described in this manual, these should by no means be regarded as the only important dimensions on which one could assess performance training methods. In order to obtain a balanced perspective that would enable the trainer to optimize the use of performance training methods within the resources and constraints of his program, it is important to consider as many of these relevant criteria as is possible or appropriate when conducting an evaluation.

Generally, indicators fall into one of two categories, which, for the purposes of this manual, will be called:

1. internal indicators
2. external indicators

Internal indicators are made up of two sets of criteria. The first set includes those criteria that derive from the program objectives themselves. They relate to questions of whether the training methods in fact accomplish the very objectives they are designed to meet. The second set contains criteria that are not really evaluative at all, but reflect, the capacity and efficiency of a program to combine the program inputs to produce the desired outcomes. These criteria focus on such questions as how the use of pupils, tutors, trainees, administrators, supervisors, hardware, and software can be optimized and how the introduction of performance training methods affects other parts of a training program. They might also deal with issues like any unintended side-effects that can be expected from the use of performance training methods, and the effect of their use on trainee motivation.

External indicators, by comparison, speak to the usefulness or validity of the program objectives. They attempt to answer questions concerning the general impact of the program--for example, its impact on student learning, the cultural appropriateness of the program's goals in a given setting and the effectiveness of those goals in meeting larger educational and societal goals, the degree of transfer of performance teaching skills to actual classroom teaching, etc. Although external indicators will be described briefly in Chapter III, they will not be considered in the evaluation process presented in the manual. Internal indicators are now examined in more detail.

How can indicators be derived from training objectives to evaluate performance training methods?

Some of the most important indicators which teacher educators will need in evaluating performance training methods are those that tell them whether their training objectives are being met by the training methods. This is obviously a vitally important question for any teacher educator to have answered. If the fundamental goals of a program are not being achieved, it may matter little whether these same methods are successful in meeting other important program considerations or larger societal goals and constraints.

What may not be obvious to a teacher educator, however, is how one in fact goes about learning whether the methods employed are meeting the desired objectives. By what series of operational steps can internal indicators be devised that would yield this knowledge?

Just as the process of training teachers begins with setting training objectives, so also does the process of evaluating training methods begin with setting training objectives.

An evaluator sets objectives in order to have a way of knowing how well he is progressing in the desired direction. If a teacher educator acting as an evaluator wants to know whether or not he is "on the track," he must have objectives which indicate just what the "track" is. In fact, an essential part of one's activities as an evaluator is setting objectives and stating them in such a way that progress toward them can be measured. The more a teacher educator cares about knowing whether or not he is progressing in the expected direction--i.e., whether he is on the track--the more carefully he will want to define that direction, or state the objectives. As a teacher educator, one can set objectives either vaguely or explicitly. But as an evaluator, the more specifically one states his objectives, the better that the progress toward them can be measured.

How should objectives be stated so that the success of performance training methods in meeting them can be evaluated?

In order to use the evaluation technique of observing how well trainees meet the objectives of the program, the objectives must be written so that trainee performance of them is observable. That is, they must be stated clearly.

A distinct difference between unclear and clear objectives is that clear objectives allow for the trainee who is attempting to meet them to perform in a way that can be observed by the teacher educator. Simply from direct observation or through the use of some feedback instrument, the teacher educator can easily determine the extent to which the trainee has met the objective. By contrast, the trainee's performance in meeting unclearly-stated or globally-stated objectives can be assessed only with the use of more personalized and judgemental criteria.

Other distinctions can also be made between unclear objectives and clear objectives. A clear objective is one which:

- 1) describes what the trainee will do, or how he will perform, in such a way that any number of people observing the performance would agree on whether or not it is correct;
- 2) describes the conditions under which the trainee will perform;
- 3) describes the standards by which the performance will be judged acceptable.

The following are examples of clear objectives:

- The trainee will demonstrate his ability to develop lesson plans by writing plans to cover a four-week period where the objectives for each lesson are stated clearly, the methods and materials to be used are described, and the

means for evaluating the student's success in meeting the objectives of the lesson are specified.

or

- The trainee will define in a 30-minute period the main stages of the child's mental growth according to the theories of Jean Piaget with a minimum accuracy of 80% according to the tutor's key of correct responses.

or

- The trainee will demonstrate his understanding of the theory of competency-based education by writing a five-page essay in which at least five of the major characteristics of the theory are discussed.

or

- The trainee will demonstrate his fluency in posing questions by asking at least 15 relevant questions (according to the tutor) in a ten-minute micro-teaching lesson of ten pupils.

An unclear objective, on the other hand, is one which:

- 1) can mean different things to different people;
- 2) uses action verbs which cannot be observed -- e.g., know, understand, appreciate, enjoy, etc.;
- 3) is a mere statement of intention;
- 4) gives no indication of standard or criteria to be applied for determining whether the specified performance has been achieved.

The following are examples of unclear objectives:

- The trainee will know how to plan lessons.
- The trainee will understand how children learn.
- The trainee will be able to discipline his students.
- The trainee will enjoy his work.
- The trainee will be a good teacher.

The important difference between unclear and clear objectives is that the specified performance of the trainee can be observed in the case of clearly stated objectives, whereas it is difficult if not impossible to observe the trainee doing in order to meet the objectives that are unclearly stated.

How can objectives and performance training methods be effectively matched?

Assuming the training objectives are clearly stated, the next step is for the teacher educator to begin to examine the methods used to meet them. There is, of course, a wide variety of training methods, both performance as well as non-performance, that teacher educators frequently choose from to train teachers. However, in this manual, we are concerned mainly with their use of micro-teaching, interaction analysis, and simulations as performance training methods.

Specifically, this means the teacher educator must map out how his training methods are matched with his objectives. In doing this, it is helpful to carefully organize one's list of performance objectives into groups of related objectives.

Objectives and methods are often combined in many different ways, some simple and some complex. For instance, the appropriate training method for a given objective may be directly implied by the objective itself. In the following objective,

"After reading Mager's book on behavioral objectives, trainees will demonstrate their ability to write behavioral objectives by stating five objectives on topics of their own choosing"

the method--assigned reading--is implied in the objective. In other cases, however, several training methods and objectives may be fused together in many different combinations. One training method might be directed toward

a single training objective, or one method might be directed toward a group of objectives, or a series of methods might be directed toward either a single objective or a group of objectives.

Consider the following example. Suppose we have these performance objectives:

Performance Objective #1: In a ten-minute micro-lesson, the trainee will be able to ask a class of five students at least five probing questions (according to the observer) on the topic being discussed.

Performance Objective #2: In a ten-minute micro-lesson, the trainee will be able to redirect a least five questions of students to other students in a class of five students.

Performance Objective #3: In a ten-minute micro-lesson, the trainee will be able to give positive reinforcement (encouragement) to every student who asks a question in a class of five students.

In order to help trainees meet these three performance objectives related to questioning skills, a group of methods might be used. Some of these would be performance training methods, others might not. The method of micro-teaching could be used. Or an assigned reading could also be used. Or both of these methods, plus others, could be used. For illustrative purposes let us see how the above objectives might be combined with three arbitrarily selected methods.

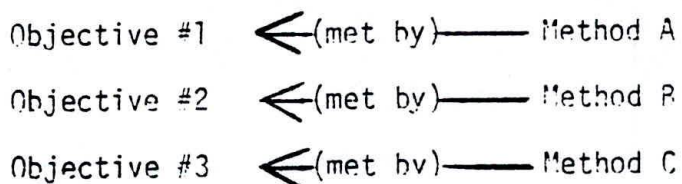
Method A (performance) is Micro-teaching

Method B (non-performance) is Assigned Reading

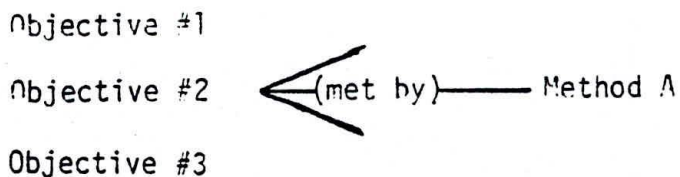
Method C (performance) is Interaction Analysis

The three methods and the three objectives could be matched in several possible combinations.

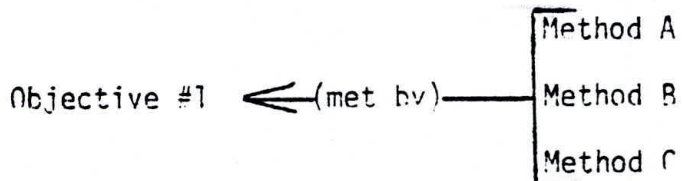
One method could be used to meet one objective:



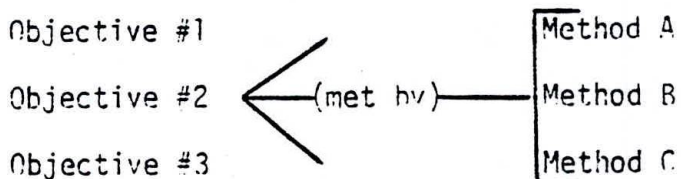
One method could be used to meet several objectives:



One objective might be met by a series of methods:



Several objectives might be met by a series of methods:



The following is an example of a series of training methods that have been combined into a training sequence to achieve a single training objective.

Example #1

Training Objective: The trainee will be able to ask at least five probing questions in a ten-minute micro-teaching lesson given to a class of 10 to 15 students.

Sequence of

- Training Methods:
1. Trainees read instructional materials on questioning skills, in which the use and importance of probing questions are described.
 2. The tutor uses a role-play to illustrate the differences in two lessons, one with and one without probing questions. The use of probing questions to elicit higher conceptual understanding in students is discussed.
 3. Trainees view a film or video-tape of a master teacher modeling probing questions.
 4. Trainees prepare a ten-minute lesson on a topic of their choice which they micro-teach to a class of six to eight students.
 5. After receiving feedback from their tutors and evaluating their own performance, trainees prepare another ten-minute lesson and teach it to a larger class (10 to 15 students).
 6. Trainees are given feedback again from their tutors and evaluate their own performance.

The following is an example of a series of training methods that have been combined to meet two related training objectives:

Example #2

- Training Objective #1: The trainee will be able to plan and teach an introduction to a ten-minute lesson to a class of 10 to 15 students, so that when asked whether the introduction has made them eager to continue the lesson, they will respond positively.
- Training Objective #2: The trainee will be able to list and describe in a paragraph at least three different ways to introduce a topic selected by the tutor that would maximize student interest in the lesson.
- Training Methods:
1. The tutor models an introduction to a lesson. The effectiveness of his demonstration is discussed and alternatives are suggested.
 2. For homework, trainees are asked to invent a unique approach to introducing a lesson in their own major subject area or in some preassigned subject.

3. Trainees are given a practicum in lesson preparation where ways of creating student interest are explored. Trainees test their previously prepared ideas on small groups of their peers.
4. For homework, trainees are asked to think of several other creative approaches to introduce a different subject to a class, one of which they incorporate into a five-minute micro-lesson.
5. Trainees meet with their tutors to discuss their lesson plans. Ways of enhancing initial student interest in the lessons are suggested.
6. Trainees micro-teach their five-minute lesson to a group of four to six students. Interaction analysis is used to gather data on the amount of student involvement in the lesson.
7. Trainees are given feedback on the lesson from peers who observe using interaction analysis, from tutors and from student responses. Trainees modify their methods or materials where necessary.
8. Trainees teach a longer, ten-minute lesson to a different class of ten to 15 students. They present an introduction to the lesson, after which the students, when asked if they are eager to continue with the lesson, respond positively. Student involvement during the lesson is measured by interaction analysis.

Once the relationship between the objectives and the training methods has been clearly defined, the outcomes of that relationship can then be more effectively assessed. A procedure for doing this will be presented in Chapter IV.

Teacher educators should note, too, that performance training methods can be used without relating them to specific objectives if so desired. This is, in fact, already being done in some programs. In such cases the objectives are only implied in the skills being practiced (e.g., stimulus variation, ending the lesson, etc.). Emphasis is placed, not on reaching specific objectives, but on analyzing and reflecting on what actually takes place in the performance training lesson (micro-teaching, for example) regardless of whether or not any clear performance objective is present.

What indicators can be used to judge whether program resources are being used effectively?

Up to this point the discussion has focused on internal indicators that help answer the question of whether or not the objectives of the performance training component are being met by the training methods. Having specified the objectives and devised a sequence of training methods to meet them, the teacher educator can consider a second major issue--that is, how efficiently the program combines the available resources to produce the intended training outcomes. Those internal indicators that focus on the uses of resources or inputs constitute some of the most important considerations to take into account when evaluating an aspect of a training program.

Resources, in the context of a teacher training program, should be defined rather broadly to include both non-human and human resources. This is an important point to remember, since teacher educators often think only of hardware when they are considering the program resources to devote to performance training. In a real sense, the optimal use of human resources is a technology and one that is perhaps more important than even the particular kind of hardware available to the program. Among the human resources that can be found in a program are the different kinds of personnel--e.g., tutors, trainees, pupils, supervisors, administrators, technical and supporting staff-- the range of their skills, and the applicability of these skills to the needs of the program. One should note that trainees and pupils are also included as program resources, since they play important (and frequently under-utilized) roles in implementing performance training methods in a program.

Non-human resources encompass a broad assortment of items: the kinds of equipment or hardware (e.g., video-tape recorders, audio-tape recorders, film projectors, overhead projectors, duplicating machines, and the like); materials

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or soft-ware (e.g., textbooks, journals, instructional manuals, library books, films, filmstrips, slide-tape units, pre-recorded video and audio tapes, programmed instruction, posters, maps, etc.); budgets, not only for normal program operation, but to purchase additional materials and equipment or hire additional personnel when necessary; time available for normal instruction and new innovations, and classroom, laboratory and resource space.

The availability of a particular resource in a training program could have an important bearing on whether certain objectives are achieved or not. This applies especially to performance training methods which often require unique kinds and amounts of resources, compared to conventional training methods. For example, if a particular training sequence requires the regular use of video-tape recording of trainee behavior, but the equipment is insufficient for the number of trainees who must use it or cannot be maintained in regular working conditions because of the lack of a technician, the achievement of the related performance objective is likely to be jeopardized. One of several things could be done at this point: either the objective or the method could be modified, additional equipment procured, a technician hired, or more efficient scheduling of trainees instituted.

In other cases, resources might have to be rearranged or redistributed. For example, since performance training methods are generally most effectively used with small groups of trainees, the resources of time and space must be allocated differently. Special rooms must be made available or existing ones set up differently for use with smaller groups and shorter time intervals than is the practice with traditional teacher training methods. Scheduling of micro-teaching sessions will have to be strictly arranged and adhered to to enable all the trainees to get adequate exposure to the method.

What is being illustrated in these examples, of course, is one of the most critical concerns of program administration--the way in which program

resources are managed. The central question in the management of program resources, of course, is how to best match available resources to resource requirements in order to successfully implement the program. Put more specifically, the question becomes how to both optimize and maximize the use of program resources--that is, how to obtain the highest quality results serving the largest number of people while using the minimum amount of resources?

The answer to this question can often be found in a careful weighing of the various alternatives in light of the particular conditions and constraints of a given program. Many teacher educators have found it helpful to conceive of the issue in terms of the costs and the benefits of various alternatives. Thus, in making decisions affecting the use of performance training methods in their programs, they will seek the answers to questions concerning the

costs- i.e., the resources needed for their use (materials, equipment, personnel, time, space, etc.) and the

benefits- i.e., the kind and amount of learning that occur among trainees as a result of their use.

Two questions are of interest in making decisions on whether to invest in, expand the use of, or merely continue the present use of performance training methods:

1. Are the benefits derived from investing in the method worth the additional costs when compared to the benefits of methods currently being used;
2. If a performance training method is introduced or expanded, but resources are limited so that it must be used with restrictions, how can the method be used most beneficially?

The following chart illustrates a few of the cost-indicators to be considered in using a performance training method in comparison to the costs of using a conventional method. By analyzing performance training methods

along the lines suggested by this chart, the teacher educator should begin to gain a sense of some of the costs that will be incurred when decisions regarding the use of performance training methods are made. Also, in the next chapter, a procedure will be presented to evaluate performance training methods and test whether and/or how they should be modified to better achieve their objectives. If the teacher educator could first establish the probable costs of allocating resources for performance training methods, it would enable him to know whether the modifications called for in the evaluation process will in fact be feasible or desirable.

Introduction or expansion of new methods will probably result in demands for additional resources or pressures for different uses of resources that in the past had been allocated to other parts of the program. Sometimes trade-offs with those parts are unavoidable. Often, however, the competition for resources that may occur among the program's components can be minimized by more productive uses of the available resources. For example, more creative uses of staff or more efficient scheduling of classes could be explored. Older and less effective methods that are no longer useful could be removed or reduced. Time spent on other parts of the program--e.g., bloc teaching, lectures, or other activities--could also be reviewed. Tutors, too, could reconsider their overall course objectives in relation to the amount of time to be devoted to performance training. The new and different uses to which facilities and equipment are likely to be put by performance training methods could also be carefully planned in advance. Yet, even when some shifting of resources to the performance training component is necessary, the teacher educator should view it, not as a sacrifice in one program component at the expense of the other, but as an intentional choice of alternatives that better meet the objectives.

What are some of the ways in which performance training methods affect other parts of the training program?

There are other implications of introducing performance training methods into a program besides their effect on the way resources are utilized.

For example, performance training methods may also affect the curriculum of the training program. The rationale behind performance training may be troublesome to some tutors, particularly those who are attached to more traditional methods. The practice of performance training may not, in fact, be congruent with the theories being taught in such courses as educational psychology, general and subject-matter teaching methods, or foundations. This may be the result of a particular tutor's vested interest in maintaining his own traditional views of teacher training or perhaps just the lack of a clear understanding of how performance training methods relate to or complement his own subject. Thus, the degree to which performance training methods are integrated into or are reinforced by other aspects of the training curriculum may affect both the internal consistency as well as the over coherence of the curriculum.

There are also unexpected and serendipitous effects from using performance training methods on other parts of the program. These sometimes occur when certain assumptions are made, often on the basis of experience elsewhere about how performance training methods will be received in a particular program. For example, the teacher educator might assume that there will be resistance to their introduction from some tutors from the very beginning. However, the exact opposite might happen--the performance training component might become quickly so attractive within the program that those tutors who teach less "desirable" courses might experience some drop in their morale. In other cases, the unintended effect might spring from the culture inappropriateness of the particular way a performance training method is

used. For example, the teacher educator might assume that it would be good to introduce the trainees to micro-teaching by first having them micro-teach a group of their peers--a practice that, in some cultures, would be highly threatening to trainees, at least initially. Unintended effects, such as these, are, by nature, difficult to anticipate and measure, but the teacher educator can at least be aware of their existence.

Another important implication for program design concerns the effects of performance training methods on trainee attitudes towards their teaching and their training experience. The importance of trainee morale during training stems from the fact that some teacher education research has recently suggested that a positive self-perception of one's teaching abilities may be even more closely correlated with teaching effectiveness than the possession of specific performance teaching skills. Therefore, it may be of more than passing interest to teacher educators to know whether the teaching skills they so successfully implant in their trainee's repertoires also instill a sense of satisfaction and confidence in their ability to be good teachers.

What are some specific indicators that will assist teacher educators in designing their training programs?

The following is a check-off list of specific items that should help teacher educators make decisions both about how resources should be used, but also about how performance training methods can best be incorporated into the training program.

- | | | | |
|----|---|--------------|-------------|
| 1. | Is the micro-teaching program which is actually implemented congruent with its original design? | yes
_____ | no
_____ |
| 2. | Is not, list the important differences between the original design and implemented design? | | |

- (a)
- (b)
- (c)
- (d)

3. Do the needs of the performance training methods vary from subject area to subject area? yes no

4. List the personnel involved in the micro-teaching program and the percentage of their time spent in micro-teaching.

PERSONS INVOLVED (List job title)	PERCENTAGE OF TIME IN MICRO-TEACHING			
	100%	50-99%	49-25%	less than 25%
(a)				
(b)				
(c)				
(d)				
etc.				

5. Are personnel who work in the micro-teaching paid for it in addition to their regular salaries? yes no

6. Does a trainee's completion of the teacher training program depend in part upon his successful completion of the micro-teaching program? yes no

7. Do teacher certificates require the successful completion of the micro-teaching program? yes no

8. How many hours of training do micro-teaching instructors receive? _____

9. How many hours of supervision do micro-teaching instructors receive? _____

10. How many trainees are in each micro-teaching group? _____

11. What is the student-teacher ratio in the micro-teaching program? _____

12. In which aspects of the micro-teaching program do the following persons participate?

- (a) choice of skills to be taught;
- (b) program planning;
- (c) implementation;
- (d) providing feedback to students;
- (e) program evaluation

TUTORS	ADMINISTRATORS	STUDENTS

13. List the outside experts/consultants used to meet program needs:

EXPERT (Job Title)	NUMBER OF HOURS EMPLOYED
(a)	
(b)	
(c)	
(d)	

14. List the institutions with which there have been exchanges of information about micro-teaching, interaction analysis, etc. and the nature of the exchange.

INSTITUTION	NATURE OF EXCHANGE			
	Correspondence	Materials	Personnel	Other
(a)				
(b)				
(c)				
(d)				

15. List the materials produced which involve performance training methods and the places each is used - internally or externally:

MATERIAL	USER
(a)	
(b)	
(c)	
(d)	

16. Can the audio-visual materials used be clearly heard and/or seen by the trainee? yes no

17. List the skills being taught with the use of performance training methods and the average number of times per class each skill would actually be used:

SKILL	NUMBER OF TIMES USED
(a)	
(b)	
(c)	
(d)	

18. How much time is allotted to the following components of the teacher training program?

COMPONENT	1st year		2nd year		3rd year	
	hrs wk	wks yr	hrs wk	wks yr	hrs wk	wks yr
(a) Total program						
(b) micro-teaching						
(c) other performance training methods						

19. List the kinds of equipment and number of hours each is used:

EQUIPMENT	No. of Sets	No. of hours per week each set is used	No. of weeks per yr each	Percentage of time it is in working order
(a)				
(b)				
(c)				
(d)				

20. Is time scheduled to allow the largest possible number of trainees to participate in performance training methods?

yes no

21. When a scarcity of resources does not permit all students to spend an equal amount of time in the micro-teaching program, what is the basis for determining who will be given priority? _____

22. Is there a room or lab used exclusively for micro-teaching or is the space shared with other programs' components?

yes no

 exclusive shared

23. List the local resources used:

- (a)
 (b)
 (c)
 (d)

24. List the imported resources used:

- (a)
 (b)
 (c)
 (d)

25. List the kinds of evaluation of the micro-teaching program that have been done and the extent of its use (e.g., once a month):

KINDS OF EVALUATION	NO. OF TIMES USED
(a)	
(b)	
(c)	
(d)	

26. What is the average rating, on a scale from 1 (low) to 9 (high), given by members of the following groups to the micro-teaching program?

	1	2	3	4	5	6	7	8	9
(a) Tutors									
(b) Trainees									
(c) Administrators									
(d) Personnel in schools served by the college									

CHAPTER IIIEVALUATING THE PERFORMANCE OF PERFORMANCE
TRAINING METHODS

Having determined the criteria for evaluating the use of performance training methods in a program, the teacher educator can then move to the next step in the evaluation process--obtaining information that relates directly to those criteria. This process of obtaining accurate and relevant information on which to make decisions that concern performance training methods is the subject of this chapter.

What is feedback?

To evaluate how well a program is working requires a regular source of relevant information about the program. To an evaluator, this kind of information, when obtained through a regular procedure or special instrument designed to yield such specific information, is known as feedback. In designing the evaluation process, then, the objective for the teacher educator is to find and use sources of feedback that provide information appropriate to the evaluation task.

Generally, teacher educators are faced with three evaluation tasks:

1. to evaluate the individual trainee's performance
2. to evaluate the effectiveness of the training program in meeting its objectives
3. to evaluate the extent to which the skills and behaviors that teacher trainees are trained in can be used appropriately in regular classroom teaching and the extent to which these skills contribute to an improvement in the learning of their students.

This manual is concerned primarily with the second of these tasks, although references to all three have been made throughout. Of paramount interest in accomplishing this evaluation task is an assessment of the role played by the training methods in meeting the training objectives. Since the scope of the manual is limited to instructional skills--i.e., the actual classroom behavior of teachers--the evaluation procedures suggested here will focus, in the main, on those training methods primarily associated with the inculcation of these teaching skills--performance training methods.

How can direct observation be used as feedback for evaluating training methods?

Fortunately, the first two of the above evaluation tasks are not mutually exclusive. Feedback data about a trainee's performance on a specified performance training objective also tells the teacher educator something about the effectiveness of the training methods used to teach the trainee. Thus, one important source of feedback data concerning performance training methods is direct observation of a trainee's ability to master a particular training objective.

If the training objective is stated in strict performance terms, then feedback on the effectiveness of the training methods is in fact "built-in." Certain requirements must be satisfied, however. As we have already noted, objectives must specify:

1. the desired performance of the trainee
2. the conditions and standards under which the performance will be evaluated.

If these are absent or unclearly stated, the teacher educator cannot be certain whether the trainee has really mastered the objective and, consequently, whether the training methods have been effective.

Determining the conditions and the standards under which the trainee's performance will be judged is not always an easy task. Sometimes it is merely a matter of directly observing the behavior to determine if it meets the performance expectations of the objective. For example, consider the objective:

The trainee will be able to conduct a discussion with a class of four to six students for ten minutes in which he will ask at least three open-ended questions.

In this objective, the desired performance ("ask at least three open-ended questions"), as well as the conditions and standards ("for ten minutes" and "to a class of four to six students") are all straightforward and easily observable.

In other cases, however, the conditions and standards are not so easily defined, and, therefore, may require a feedback device rather than simple observation. For example, consider this objective:

The trainee will be able to conduct a discussion with a class of four to six students for ten minutes in which the students actively participate in the lesson.

Although the conditions are clear, the term "actively participate" is not clear until some criteria are established. Direct observation is not sufficient in this case, because what one observer sees as "active participation" may not agree with what another observer sees.

To make the objective more explicit, the teacher educator could restate it so that feedback is obtained from another source. There are three other sources of feedback on trainee performance which can be used when direct observation is inadequate for a particular performance training objective.

These are:

1. student responses
2. observation instruments
3. rating scales.

How can student responses be used as feedback for evaluating training methods?

Although it may be difficult to gain acceptance for it in some programs, student reponses can be a valuable source of feedback on both trainees' performances and training methods. Such responses can be gathered either from an informal survey of students' reactions to the trainee's lesson or from a more formal written evaluation form on which students indicate how well they liked the lesson and the way it was taught. A supervisor or trainee might also give students a short test to determine how much they had learned in the lesson. Whichever form is used, data concerning the effect of a trainee's teaching performance on students can be an important indicator of how well various training methods have worked.

Returning to the last example, "active participation" might be more clearly defined as:

"...students respond unanimously after the lesson that they felt the teacher wanted them to participate,"

or

"...students respond unanimously afterwards that the teacher accepted their comments and questions."

Thus, by using a different source of feedback and revising the objective, it is possible to obtain more precise feedback, not only on the trainee's performance but on the effectiveness of the training method as well.

Student response is a source of feedback well worth including in any training program. However, in those programs where the idea has not been accepted, trainees and colleagues alike will have to be convinced that student response is a legitimate and useful source of information that is often unobtainable through other means.

How can observation intruments be used as feedback for evaluating training methods?

Another source of feedback for evaluating the effectiveness of training

methods is the use of classroom observation instruments. Originally designed as research tools for describing and analyzing classroom phenomena, observation instruments have been used as both effective training tools and useful evaluation instruments.

Among the multitude of observation instruments that now exist, the Flanders system of Interaction Analysis is the most popular. Based on the notion of superior-subordinate relations in the classroom, interaction analysis provides feedback on the "directness" or "indirectness" of the teacher's behavior. It is a very useful technique for monitoring certain clusters of teaching behaviors, especially those related to the encouragement of student participation in the lesson.

Going back to the example given above, "active participation" might be more clearly defined with the help of the Flanders system. One redefinition might be:

"at least fifty percent of the interactions observed will fall into the two categories of 'student talk' on the Interaction Analysis scale."

Here, the criterion by which the trainee's performance is judged is described in terms of feedback data from an observation instrument, rather than from direct observation or from student responses to the lesson. The use of an observation instrument is analagous to a scientist who requires the aid of a microscope to see a micro-organism which cannot be seen with the naked eye alone.

However, no one observation instrument can measure every important aspect of teacher-student interaction. The teacher educator may discover that the Flanders system does not provide the kind of feedback data most useful for some purposes. Or he may find that feedback is needed for other performances not accurately categorized by that system. If so, other observation instruments can be chosen from literally dozens of such instruments which will categorize many different behaviors. There are even systems designed for specialized

subjects and purposes such as individualized instruction, foreign languages, science, math, and social studies. The most complete anthology of observation instruments, Mirrors for Behavior by Simon and Boyer, describe 79 separate instruments. The authors suggest a number of thinking, communication, and responsible and effective action skills and behaviors that can be measured by observation instruments.

Although these observation instruments can provide feedback on virtually any teacher behavior, a word of caution is in store. The instruments vary widely in complexity. Some have very complicated coding systems or require teams of observers to record the observations. These problems greatly limit their usefulness in training situations, where it is important to have trainees master the technique. Interaction analysis has gained popularity because it is relatively simple to master and provides feedback many find useful.

Instead of using an observation instrument designed by someone else, teacher educators might want to modify an existing instrument or design an entirely new one that better suits their own needs. There are already instances of training programs where this has been done.* A "hybrid" or complete new system designed by the training staff might well provide more pertinent feedback to many objectives of a training program.

In the above example, a simple instrument might be designed by which the observer could count the amount of time used up by teacher talk and the amount used up by student talk. Perhaps the criterion for "active participation" would then become:

"at least forty percent of the lesson time is used up by student talk."

(This information can also be derived from a simple matrix of the observations made with interaction analysis.)

How can rating scales be used as feedback for evaluating performance training methods?

Some teacher educators prefer to set their training objectives without explicitly stating the conditions and standards by which the trainee's performance will be evaluated. Instead, they may utilize an alternative technique of stating only the desired performance and then applying a feedback device such as a rating scale to evaluate the actual performance.

Using this technique, the phrase "active participation of the students" in the previous example might be redefined to mean that the trainee will demonstrate competence in stimulating the participation of students when measured according to a five-point rating scale, such as the following, which is intended for use in rating progress in meeting the training objective:

1. No participation
2. Limited participation
3. Fair participation
4. Good participation
5. Considerable participation

Admittedly, this technique of writing objectives and evaluating trainee performance introduces a degree of inference into the evaluation process since the observer is required to judge the quality of that performance on somewhat less explicit criteria. However, the technique does have the advantage of being a much more manageable way to state training objectives. And since a rating scale provides relevant information about the trainee's performance in meeting the objectives, it constitutes an important source of feedback for evaluation, not only of the trainee's performance, but of the particular training methods involved as well.

How can the teacher educator use feedback information to tell if a performance training method is helping to meet his objectives?

Four general sources of feedback on trainee performance have just been described:

1. direct observation
2. student responses
3. observation instruments
4. rating scales.

Although other sources of feedback exist, any one of the above, when stated as part of the criteria of the training objective, can provide information for judging the trainee's performance, as well as for evaluating the effectiveness of the training methods. There are both informal and formal ways of using such feedback information on trainee performance to evaluate various training methods.

One informal technique is to periodically examine the compiled feedback data for general patterns of success or failure. A particularly useful setting for doing this is the regular weekly staff meeting. Here members of the training staff might discuss the ability of the trainees to meet various performance training objectives and the significance of their group performance in terms of the particular training methods used. A log could be kept of these discussions, providing the staff with an ongoing record of any modifications they make in training methods and the eventual effects of these changes on trainee performance. Through this informal procedure, the training staff which has little time for a more systematic evaluation can still maintain a reasonably accurate check on the progress of their trainees and the effectiveness of their training methods.

However, other teacher educators should consider making a more formal and systematic evaluation of their training methods. This could be particularly

important when the performance training methods are not entirely appropriate for certain teacher training programs. For example, The principle of a method might be very useful, but its present form, as adopted from another source, inappropriate. A trainer may like the concept of micro-teaching but not have the necessary resources (i.e., video-tape recording equipment) to use it as effectively as is desirable. Or, again, a training method might not be meeting the teacher educator's objectives for reasons not immediately obvious.

In such cases, the training method should be analyzed. One should be able to look at the principle--the basic idea--of a performance training method, and break it down into its component parts so that these might be modified to better conform to the conditions in the program and at the same time meet the training objectives. A procedure to do this is now outlined below.

How can a performance training method be analyzed?

There are several key characteristics or parts of performance training methods that determine how they function in a training program. Among these are:

1. placement in curriculum
2. personnel and the tasks they perform
3. materials and equipment
4. time length
5. location.

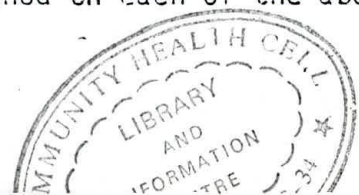
By analyzing a method in terms of these characteristics and in relation to its associated performance objective(s), the teacher educator can determine systematically which characteristics of the method need to be changed. This analysis has three steps:

1. List the current status or use of the method on each of the above characteristics.

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2. For each characteristic, list some alternatives.
3. Looking over the alternatives for each characteristic, consider the rationale for either maintaining the original use or selecting an alternative. This rationale need not be written down, if such a task seems tedious. But it should be recorded when it seems significant.

In order to progress through these steps, it is helpful to use a chart, such as the following, to identify the characteristics and possible alternatives:

Objective:

Method:

Characteristic:	Current Use	Alternatives
1. Placement in Curriculum		
2. Personnel & their tasks		
3. Materials & equipment		
4. Time length		
5. Location		

The following are some examples of how a chart like this is used. An example is given for micro-teaching, for interaction analysis and for a simulation. The examples are purposely left somewhat general, with a less than complete list of alternatives given for each characteristic. For practice, the reader might try to add to the list of alternatives at least one alternative for each characteristic that is relevant to his own situation.

Example 1

Objective: The trainee will lead a class of six to eight pupils to discuss abstract concepts, as judged by the tutor, in a science lesson on electricity.

Method: Micro-teaching lesson

Characteristics	Current Use	Alternatives
1. Placement in Curriculum	after a lecture on using questioning techniques to stimulate conceptual understanding	after viewing master teacher ask questions after a reading assignment on asking questions
2. Persons & their tasks	<ul style="list-style-type: none"> a. trainee: prepare lesson teach lesson (lesson is video-taped) view tape with tutor b. tutor: observe lesson view tape & critique lesson observe reteach of lesson c. pupils: participate in lesson 	<ul style="list-style-type: none"> a. trainee: use lesson prepared by tutor view tape alone no reteach of lesson b. tutor: view tape but not lesson no critique of lesson c. use peers instead of pupils for micro-class
3. Materials & equipment	<ul style="list-style-type: none"> a. desks & chairs b. video-tape equipment c. instructional material for lesson 	<ul style="list-style-type: none"> a. sit on floor b. audio-tape equipment c. no taping; feedback from tutor
4. Time length	10 minute teach 30 minute critique 10 minute reteach	20 minute teach 20 minute viewing of tape 20 minute reteach
5. Location	micro-teaching laboratory	classroom unused workroom

Example 2

Objective: Using Flanders Interaction Analysis or a modified version of it, the trainee will be able to determine the percentage of student talk compared to teacher talk in a ten minute classroom discussion of a social studies topic.

Method: Interaction Analysis

Characteristics	Current Use	Alternatives
1. Placement in Curriculum	The introductory activity in a unit on classroom observation techniques	after a reading assignment on observation of classroom interaction after a lecture on teacher behaviors related to student involvement in classroom discussion
2. Persons & their tasks	<ul style="list-style-type: none"> a. master teacher: conducts lesson (lesson is audio-taped) b. trainees: observe lesson and/or listen to audio-tape c. tutor: critiques trainees' observation of lesson d. pupils: participate in lesson 	<ul style="list-style-type: none"> a. tutor: conducts lesson himself, critiques trainee's observation of lesson b. use peers instead of pupils c. trainees' class is divided into small groups who observe lesson and discuss observations among themselves
3. Materials & equipment	<ul style="list-style-type: none"> a. desks & chairs b. manual for classroom observation c. audio-visual equipment d. instructional materials for lesson 	<ul style="list-style-type: none"> b. different version of lesson to be observed c. no taping of lesson
4. Time length	60 minute lesson 30 minute critique of lesson observations	10 minute lesson 30 minute discussion of observations 10 minute review of tape
5. Location	<p>master teacher's classroom in his school</p> <p>classroom in training institution</p>	micro-teaching lab

Example 3

Objective: The trainee will be able to devise three effective solutions, as judged by the tutor, to a discipline problem simulated in role plays acted out by trainees.

Method: Simulation

Characteristics	Current Use	Alternatives
1. Placement in Curriculum	after lectures on classroom discipline	after several weeks of practice teaching prior to all other lessons on classroom discipline
2. Persons & their tasks	a. tutor: writes role play situations observes role plays critiques trainees' solutions to problems b. trainees: participate in role plays observe role plays and discuss situations	a. tutor: participates in role plays leads discussion with trainees on critiques of the role plays b. trainees: write role plays participate in role plays c. use pupils to participate in role plays
3. Materials & equipment	a. role play "script" b. chairs	a. protocol tapes of discipline problems and solutions b. interaction analysis observation forms to record verbal interaction
4. Time length	30 minutes for role plays 30 minutes for critiques	10-20 minutes for role plays 60 minute critique and discussion period
5. Location	classroom	outdoors real school classroom

How can a teacher educator determine whether to change the use of a performance training method?

It is not sufficient to simply list the characteristics of a performance training method along with the possible alternatives for each characteristic. A rationale should be provided for selecting one alternative. Therefore, the teacher educator should articulate clearly to himself, or, if possible, discuss with his colleagues, the reasons for deciding on one alternative over the others.

The decision might be based on the expectation that a change in one characteristic will lead to an improvement in the overall effectiveness of the method. Or the decision might be based on logistical considerations. For example, access to personnel, time, suitable locations, materials and equipment, etc. could be restricted by the resources available. In such a case, one would need to ponder the alternatives carefully to insure that the performance training method can be made logistically feasible. In still another instance, the availability of resources might not be a problem at all, and the teacher educator could freely experiment with alternatives for the sake of improving the use of the method.

Eventually, a teacher training staff will probably arrive at a standard set of method designs, activity sequences, and resource allocations that will make it unnecessary to analyze each performance training method in the way described here. However, it is important never to stop considering alternatives, since many of the practices that become habitual are not always the most effective ways of meeting particular objectives. In order to determine whether an addition to, elimination of or modification of the present use of a performance

training method can improve the method's effectiveness in meeting a performance objective, the teacher educator should engage in some simple research.

Each of the characteristics of the method, in the language of a researcher, would be called a variable. In order to test the effects of changing a particular variable, the teacher educator must use the same set of characteristics of a method at least twice, in exactly the same way, except for the one characteristic he is thinking of modifying. For example, if he is considering the elimination of video-tape in a micro-teaching method, he would use the micro-teaching method twice: once with the video-tape and once without the video-tape.

Having done this procedure, the teacher educator can then study which use of the method (with or without the video-tape element) best helped meet the training objective. For example, the trainee who progresses through the method with the use of video-tape might be able to meet the performance objective after observing two lessons. The trainee who progresses through the method without the use of video-tape might not be able to meet the performance objective until after observing five lessons. In this case, one would probably conclude that video-tape is a necessary element that should not be eliminated or, if it is, that it is replaced by something other than unstructured observation.

The same kind of test for determining whether a particular element of a method should be eliminated can also be used to determine whether a different element could be substituted. In this case, the teacher educator would use the method twice, in exactly the same way, except that one time the method would be used with the original element and the other with the substitute. For example, if he wanted to find out whether an audio-tape could be substituted for video-tape in an interaction analysis method, he would carry out the method once with the audio and once with the video.

Once again, by comparing the number of trials or length of time required by trainees to master the objective(s) using audio-tape as opposed to using video-tape, will indicate to the teacher educator which use of the method--i.e., in this case, which particular material--is more effective.

The teacher educator can be more certain of the effectiveness of a particular use of a method if the "with and without" or "substitution" test is done on many trainees. In fact, the more trainees involved in the test (the larger the sample), the more confident he can be about the results. Of course the ease with which the teacher educator discovers how to modify various characteristics of a performance training method so that it works best depends also on how clearly the objectives have been stated and on the number and relevance of the indicators used to judge the method's overall usefulness.

The following chart might be used to keep a record of the results of such tests to determine the effectiveness of a method.

NUMBER OF LESSONS NEEDED BY TRAINEE BEFORE MEETING OBJECTIVE		
Name _____		
TEST #	WITH VIDEO-TAPE	WITHOUT VIDEO-TAPE
1		
2		
3		
4		
5		
TOTAL:		

NUMBER OF LESSONS NEEDED BY TRAINEE BEFORE MEETING OBJECTIVE:

Name _____

TEST # WITH VIDEO-TAPE WITH AUDIO-TAPE

1		
2		
3		
4		
5		
TOTAL:		

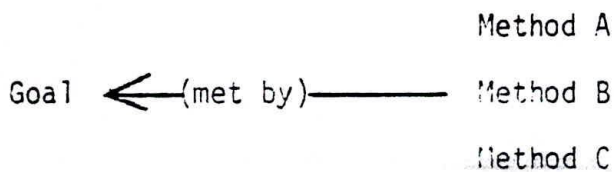
The performance of individual trainees in attempting to master objectives could be recorded regularly on such charts. Then, aggregates of a number of these individual trainee performances could be compiled, proving group data that would greatly aid the teacher educator in making decisions about the way in which the method is used.

How can the teacher educator analyze a sequence of methods?

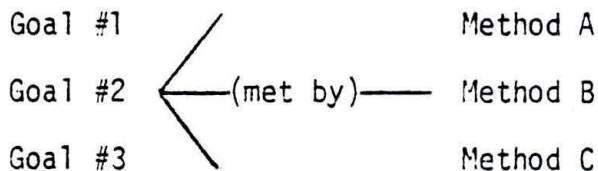
The teacher educator may want to take this process of evaluating a particular performance training method one step further and evaluate a sequence of methods. Evaluating combinations of methods that meet clusters of related performance objectives provides information about an important aspect of a performance training program--the interrelationship of teaching behaviors. It helps to answer the question of how the learning of one skill influences the learning of another. Moreover, it sheds light on the extent to which the training methods enable trainees to integrate diverse teaching behaviors into competent, personalized teaching styles? It is one thing to know that trainees have mastered certain teaching behaviors as isolated, discrete performances. It is quite another to

know that these performances can be effectively and appropriately coordinated in the context of regular classroom teaching. If the teacher educator organizes and evaluates the training methods as distinct but interdependent parts of a much larger whole, he will begin to know whether the training is in fact producing higher-level competencies.

Recall from Chapter II that several methods can be combined to meet a single objective:



and that a sequence of methods can be combined to meet a group of related objectives:



Suppose, for example, we are interested in the following larger objective which combines several sub-objectives:

In a 30-minute lesson with 20 students, the trainee will be able to combine the use of reinforcement, attending behavior and verbal cueing so that on an interaction analysis, more than half of his teacher-pupil interactions fall into categories 1, 2, 3, and 4, and at least one-third of the class time is made up of student talk.

Since such a complex objective involves several different behaviors, it might require a long sequence of training methods. Suppose, for example, that the breakdown of the performance objectives and corresponding training methods for the above objective looks like the following:

LARGER PERFORMANCE OBJECTIVE

Component Performance Objectives:

- #1. The trainee will be able to reinforce student responses at least ten times in a 30-minute lesson of 20 students.
- #2. The trainee will demonstrate attending behavior by restating at least five student questions in the 30-minute lesson of 20 students.
- #3. The trainees will be able to cue students so that three out of every four of his questions are answered correctly in a 30-minute lesson with a class of 20 students.

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Sequence of Training Methods:

- A. Reading material on reinforcement, attending behavior and cueing skills.
- B. Lectures on use of same skills.
- C. Films modeling the use of the skills.
- D. Role-play Simulation illustrating attending behavior.
- E. Listening Exercises in small groups to develop attending behavior.
- F. Case Studies to identify good and bad examples of the same skills.
- G. Practicum to examine and practice cueing techniques.
- H. Micro-teaching lessons, on each of the above skills, to a class of five students for ten minutes.

In comparing this example with the previous examples in which single methods are analyzed, several differences can be seen.

In this case, a sequence of methods has been substituted for the sequence of tasks in a single method. With a sequence of methods and objectives, the particular way in which the methods and objectives are ordered is likely to be an important factor. Some performance training skills, for example, are more effectively taught as clusters of behaviors or with certain combinations of methods. Also, there are more personnel, materials, time, and locations involved here. The analysis of a sequence of methods, therefore, will be more complicated than the analysis of a single method.

By repeating the same process of breaking down the sequence of methods into single methods and examining each method in relation to the associated performance objective(s), the teacher educator can determine which methods to change and how to change them. The only difference is that the task is more complex, with many more elements to include in the process.

Once again, however, one can follow these three steps:

1. List each of the characteristics--this time, each method (in a sequence of methods) or each sequence of methods (in an overall training sequence).
2. For each characteristic (method or sequence of methods) list some alternatives.
3. Consider the rationale for either using the original sequence or for selecting an alternative.

The same kind of simple experiment might be set up to test the effects of substituting a different method (or sequence of methods), eliminating or adding a method(s), or re-ordering the sequence of methods in some way. So, for example, if it is found that sub-objective #1 (using reinforcement) is achieved more effectively by adding an informal peer group practice session, such a method could be added.

In what ways can teacher educators evaluate the overall usefulness or impact of performance training methods?

The previous section introduced the notion of evaluating teaching competence, not just as having mastered a set of discrete teaching skills and behaviors, but also as the ability to assimilate these same skills as part of an effective overall teaching style. This section takes the discussion further by asking whether the mere mastery of some specific teaching skills through performance training methods makes any real difference in determining the teacher's eventual success in the classroom. This question, of course, suggests a completely different set of

criteria on which to evaluate performance training methods. It calls for criteria that relate more to questions about the usefulness, validity, or impact of the training goals than to whether or not the goals were achieved. These are the criteria that were earlier labelled "external indicators" What are some of these external evaluation concerns?

Among these, of course, are questions such as those raised in the last section concerning the transferability of the training. Can trainees actually combine and execute the specific teaching skills in the course of regular classroom teaching? That is, can a set of behaviors that have been learned in the context of a specific training program be transferred to a new or different context -- in this case, the real classroom?

Given the situation where performance teaching skills are, in fact, being actually put into practice in regular classroom teaching, does their addition to the teacher's repertoire of skills have any noticeable effect on students' learning? For example, one could assume that the ability to ask questions clearly and effectively or to reinforce student responses or to introduce lessons in interesting ways are skills vital to any teacher's success in the classroom. Yet, if the net effect of the skills on the learning of students is nil, their ultimate usefulness is open to question.

Moreover, granted the fact that performance skills do appear to result in improved student learning in schools in some societies, are those same skills just as effective and appropriate in schools in other societies? Specifically, then, to what degree are the skills possessed by graduates who are about to assume teaching posts compatible with the

goals, values, and practices being promoted within the educational establishment and in the larger society? What is the role of the schools in the particular society and how are teacher competencies expected to fit into those roles? The point is, if a training program's assumptions about teaching competence run counter to the prevailing cultural norms, the effects of the low level of acceptance of those competencies in practice may outweigh their true potential for positive change.

These issues are obviously some of the most important evaluative questions that teacher educators are ever likely to encounter. They are also exceedingly difficult questions to answer. The process of obtaining data to answer them is beset with many, many complications and compounding variables. Because of this, techniques for evaluating external indicators have not been included in this manual and must be sought elsewhere. Yet, the significance of such "ultimate" issues should behoove all concerned teacher educators to at least remain aware of their existence.

CONCLUSION

The teacher educator has been provided with some tools to help evaluate the use of performance training methods in a teacher training program. The evaluation approach presented in the manual was made from the perspective of how to determine whether the methods accomplished what was expected of them. In evaluating training methods, the need to first select criteria on which to evaluate was established. The manual then cited the importance of stating the goals that the methods are supposed to achieve as explicitly as possible. The teacher educator was encouraged to carefully map out how the training goals are matched with training methods. Also, some assistance was given at that point to assessing whether the resources in a program are being optimally utilized. The manual then proceeded to show how the feedback data that is normally received in evaluating individual trainee performance can also be used to evaluate the effectiveness of the training methods themselves. Ways were provided to help teacher educators analyze the characteristics of a training method and decide if or how to change the use of the method. Finally, the teacher educator was urged to evaluate the training methods on some larger considerations, as well, such as how well the methods develop the trainees' ability to master the skills as an integrated whole.

When evaluating the training program, the teacher educator should be ready to consider changing any part of his training procedure that appears to be in need of change. This view is predicated on the belief that teacher educators have set program goals that they want to accomplish and are concerned about actually accomplishing them. The efforts of the

teacher educator to achieve better training results should, therefore, not cease as long as there is some room for improvement. Evaluation can be an invaluable aid in providing information that can be used to make decisions that improve the program or some part of it. However, if the teacher educator has not clearly established exactly what it is he wishes to accomplish or is not really concerned about whether he accomplishes it, evaluation is not likely to be a very useful exercise.

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