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ABSTRACT

A field based inservice training program designed to update teaching skills of professionals working with young mainstreamed handicapped children is described. Two programs--Using Skills Effectively and Using Resources Effectively--were conducted in cycles with 73 elementary regular and special education teachers and daycare providers. Class experiences are alternated with work on the job. Sample objectives and progress forms are included. Training results are reported to seven cycles and are grouped by age of children taught. Child performance data were obtained. Followup data indicated that 60% of the trainees who responded 6 weeks after training used their training with other children. Considerations of motivation's effect on performance are addressed. Advantages of the field based model include opportunities for application of the skills, with feedback. (CL)

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Training Over Time: A Field-based Model for In-Service Delivery

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Training Over Time:
A Field-based
Model for Inservice Delivery

Inservice training is the most common method of updating the skills of classroom teachers. Typically, inservice training consists of "one-shot", or short-term didactic instruction in a lecture or workshop format. Frequently, however, the material taught in the workshop does not generalize successfully to use of the skill in the classroom. Possible reasons for this include: the lack of active trainee participation in the training, the lack of trainer feedback following a one-time lecture, the failure to provide for extension of skill application and knowledge to the classroom, and the lack of verification of correct usage of teaching skills and improved pupil performance (Cavallaro, Stowitschek, George, & Stowitschek, 1980). However, there is evidence that on-the-job performance can be improved if, in addition to didactic instruction, personnel are given the opportunity to practice teaching skills in the field and to receive feedback on their performance. (Doyle, 1977; Gossairt, 1973; Rule 1972; Shores, Salzberg, Stowitschek & Kerr, 1978; Shores, Cegelka & Nelson, 1973).

Often the topics offered in inservice training are classroom specific. For example, special education teachers attend workshops dealing with PL 94-142 and seizure control, while elementary education personnel attend discussions on teacher-parent relationships and creative science activities. The

implementation of PL 94-142 has recently emphasized the need for regular classroom teachers as well as special educators to receive inservice training regarding exceptional children. Whether real or imagined, teachers may fear that they will be confronted with a mainstreamed child before they have been adequately prepared. A field-based inservice training program, in which training sessions alternate with work on the job, can allay this fear by providing teachers with the opportunity to practice teaching skills, receive feedback on their performance, and address their specific classroom needs.

The purpose of this presentation is to describe a field-based inservice training program designed to update teaching skills of professionals working with young mainstreamed handicapped children and to discuss the results of such training.

Using Skills Effectively and Using Resources Effectively were developed through a grant (number G007803105) from the Office of Special Education and Rehabilitation Services, United States Department of Education, to the Regional Intervention Program Advisory Committee, Inc., Nashville, Tennessee. The content of the two programs consists of a continuum of teaching skills that are applicable to programs for young children of varying handicapping conditions or for other students whose developmental skills are at a preschool or early elementary level. Using Skills Effectively (USE) was designed to teach trainees to translate a particular child's needs into skill objectives, to use a program to teach a skill through direct

instruction, and to evaluate the results of that instruction. Participants learn to assess a child's existing skills in a given content area (language, preacademic, motor, or self-help), to select a prewritten teaching program, to teach the child and to keep regular records of the child's performance.

Using Resources Effectively (URE) was designed to help professionals working with exceptional children enhance their teaching effectiveness by learning new ways to incorporate two kinds of resources: existing materials and other adults. Participants learn to develop skill sequences and instructional programs using their own available materials. They practice two systematic formats for group instruction, and rehearse methods to teach others, such as aides, parents, or volunteers, to use specific instructional programs with children.

Training cycles were conducted in Tennessee and Connecticut by seven different persons. Total enrollment was 73. Enrollment per cycle ranged from five to 17 persons. Trainees included Head Start teachers from several rural Tennessee counties, public school elementary and special education teachers from Nashville, and day care providers from Hartford, Connecticut. Two cycles were taught by teams of two trainers (one of these by program developers); five cycles were taught by single trainers.

The format of both programs is an alternation between class experiences and work on the job. Teachers are introduced to concepts and procedures through in-class discussions and practice procedures through role playing and videotaped or written exercises. The content is organized into performance objectives

which require written products or observed application of specific teaching procedures. Examples of trainee objectives from the USE program are shown in Figure 1. Objectives are listed in the left column. Objective letters C and F indicate in-class and field objectives, respectively.

In-class objective C.3.1. is "simulate 1-1 teaching from trainee's program." After determining, through a pretest, that the skill is appropriate for the child (that is, the child does not already exhibit the skill but has prerequisite behaviors), trainees practice using the instructional program in a role play. Criteria from this objective are listed in the second column. Trainees must complete 10 trials consisting of teacher instruction, child response, and teacher-presented consequence. They must praise the child at least 2 times per minute, ignore inappropriate (non-dangerous) behavior, give appropriate signals (instructions), and have 80% agreement with the trainer on child performance data. The role play, in which the "children" are instructed to answer correctly, allows the teachers to become comfortable using the program and materials and to receive feedback on their teaching before implementing the program with an actual child.

In-class objective C.3.2. is "simulate 1-1 teaching from the program using the correction procedure." This activity is also a role play; however, "children" are instructed to occasionally err. The criteria for this objective include all those for C.3.1. and consistent use of the specified correction procedure. In-class objective C.3.3. is "graph child data." Trainees graph the data taken during the teaching role play.

Figure 1

U.S.E

TRAINEE PROGRESS FORM

ACTIVITY	CRITERIA	DATE MET	NUMBER TRIALS BEFORE MET
CHECK OUT ON CONTENT	80% CORRECT		
C.3.1 SIMULATE 1-TO-1 TEACHING FROM TRAINEE'S OWN PROGRAM	10 CONSECUTIVE CORRECT TRIALS HAVING: A. PRAISE RATE AT LEAST 2 PER MINUTE B. NO OFF TASK CONTACTS (INAPPROPRIATE BEHAVIOR TURNED OFF) C. SIGNALS: APPROPRIATE TO TASK, CONSISTENT THROUGH TASK, NOT INTERRUPTED, GIVEN ONLY WHEN CHILD ON TASK D. 80% AGREEMENT ON DATA TAKEN WHILE TEACHING		
;.3.2 SIMULATE 1-TO-1 TEACHING FROM TRAINEE'S OWN PROGRAM USING CORRECTION PROCEDURE	SAME AS ABOVE PLUS E. SPECIFIED CORRECTION PROCEDURES FOLLOWED		
;.3.3 GRAPH CHILD DATA	A. GRAPH CORRECTLY LABELED B. TRAINER APPROVAL		

Figure 2 shows a sample of objectives from the URE program. For in-class objective C.1.1. trainees list a skill sequence for one child for one academic year. Teachers are shown during training sessions how to expand and/or adapt extant curricula to construct such a sequence. To meet criterion on this objective, the skills must be expressed as observable behaviors and be sequentially ordered as judged by trainers.

In-class objective C.1.2. is a simulation of the preliminary assessment. As in the USE program trainees practice assessing child skills through role play before assessing the actual child. Participants meet criteria if they record child responses as they are performed and check skills more than one time. The purpose of this assessment is to pinpoint a target skill for which the trainee will write a program. Trainees must, therefore, assess each skill in their sequence.

In field objective F.1.1. trainees conduct the preliminary assessment with an actual child. Trainees meet criterion by submitting their checklist of skills showing the results of the assessment.

As suggested by the objectives, participants apply procedures between training sessions during their own work and bring their experiences back to class for discussion, suggestions and revision.

Progress is measured in four ways: 1) written pre and posttests on didactic content are administered; 2) teachers' application of teaching procedures is observed in class (application of

Figure 2

U.R.E.

TRAINEE PROGRESS FORM

ACTIVITY	CRITERIA	DATE MET	NUMBER TRIALS BEFORE MET
.1.1 IST SKILL SEQUENCE OR 1 CHILD FOR 1 CADEMIC YEAR	A. SKILLS EXPRESSED AS OBSERVABLE BEHAVIORS B. SKILLS IN SEQUENCE AS JUDGED BY TRAINER		
.1.2 IMULATE PRELIMINARY SSESSMENT	A. RECORDS AS CHILD PERFORMS, OR AFTER EACH TASK B. CHECKS SKILLS MORE THAN ONE TIME		
.1.1 ONDUCT PRELIMINARY SSESSMENT	SUBMIT CHECKLIST SHOWING RESULTS		

procedures in the field is observed for a sample of participants); 3) written work, such as task analyses and data systems are evaluated with respect to predetermined criteria; and 4) child performance data, submitted by teachers, are evaluated with respect to progress towards student objectives. In addition to these measures, participants periodically rate their satisfaction with the training program.

Training results are reported for seven cycles and are grouped for reporting purposes by age of children taught. Sixty-two headstart, preschool and day care professionals constitute one group; eleven kindergarten and early elementary and special education teachers constitute the other.

Inservice length varied for each cycle, ranging from two to four hours per session with five to ten sessions; therefore, the number of content units and assigned objectives also varied. Consequently, not all evaluation measures were applied to all cycles.

Table 1 shows knowledge change data, as measured by the difference in pre and posttest scores. In most cycles, pretests were administered at the beginning and posttests at the end of a session. The mean gain score (posttest score - pretest score) for early elementary teachers was 33 percentage points. Mean posttest scores are shown in addition to gain scores, because posttest data only were available for day care professionals. For the 39 day care professionals who took posttests, the mean posttest score was 79% correct. The 11 elementary teachers scored a mean of 82% correct. Knowledge

TABLE 1

TRAINEE KNOWLEDGE

	$\bar{X}$ CHANGE SCORE (POSTTEST SCORE - PRETEST SCORE)	$\bar{X}$ POSTTEST SCORE
DAY CARE PROFESSIONALS N=62	*	**79%
EARLY ELEMENTARY MAINSTREAMED N=11	33	82%

*PRETEST SCORES NOT AVAILABLE.
**DATA AVAILABLE FOR 39 TEACHERS.

change was variable across trainees, and this measure of performance will be discussed later.

In several USE cycles a performance probe was given before and after training. The probe was a teaching simulation with a standardized task and a set of standardized learner responses. Teachers' rates of praise, descriptive praise and contacts to off-task children were measured. Twenty-five teachers participated in the probe. Teachers met criteria for 31% of the 75 total objectives prior to training and 89% subsequent to training.

Table 2 shows the mean percent of performance objectives met by the trainee groups. This percent was derived by dividing the sum of the objectives assigned to each trainee into the number of objectives completed during the cycle. Thus 89% of the 157 in class objectives were met by the day care professionals while the mainstreamed early elementary teachers met 76% of 21 objectives. Day care professionals met 84% of the 131 field objectives, and the early elementary teachers completed 61% of the 38 assigned.

Child performance, shown in the third column in Table 2, was judged by two independent evaluators according to these definitions: 1) made progress -- three of the four most recent data points showed improvement from pretest, baseline, or first session and no decreasing trend was evident; (in the case of programs with successive steps, movement to a more difficult step was considered progress over baseline, unless the child was at criteria on all steps upon initial presentation and there was no pretest data); 2) made no progress or insufficient data -- the data showed no change in skill from pretest, baseline

TABLE 2

	Trainee Performance				Child Performance
	Class*		Field*		
Day Care Professionals	# Objectives Attempted	% Objectives Met	# Objectives Attempted	% Objectives Met	% Making Progress
N=62	157	89%	131	84%	60%
Early Elementary Mainstreamed					
N=11	21	76%	38	61%	67%

*Data available for 39 teachers.

or first session; or the data were not sufficient to judge progress or 3) regressed -- the data showed loss of skill for three of the four most recent data points (from baseline, pretest or first session) and no increasing trend was evident. Sixty percent of children taught by the day care professionals and sixty seven percent of those taught by the early elementary teachers made progress in the instructional programs implemented during training. The remaining children (40% taught by day care teachers and 33% taught by elementary teachers) made no progress or there were insufficient data to judge the occurrence of progress.

Child performance was determined from trainee-reported data. To ensure the data were accurate, trainers observed a sample of 12% of trainees on site and recorded both teacher performance and child performance. Mean trainer--trainee agreement was 100%.

Reliability of recording was also estimated by recording data from audiotapes of teaching sessions submitted by 8% of the trainees. The mean percent of agreement between teacher reported data and the independent ratings of the tapes was 76%.

Child performance data were considered critical to evaluation of training since the training was intended to assist teachers in instructing children. If what was taught during training did not generalize to the classroom, and if what the teacher applied in the classroom did not have salutary effects on the children, the validity of the inservice training would be questionable. On-going evaluation of child performance during training focused attention on the teachers' classroom needs. In addition, child performance data facilitated the trainer's role as consultant as well as evaluator. Children's instructional programs were designed to fit children's skills and altered

as their skills changed. By monitoring child progress data, teacher and trainer examined program effects on children. The emphasis in the process of evaluation was shifted from judgment of the teacher as good or bad to refinement of instructional programs and teaching skills to assist children.

There is evidence that trainees found the training helpful. At the conclusion of each unit, trainees were asked to rate the content and interest level of the training on the form shown in Figure 3. Thirty-five percent of all trainees rated content as 3 (they learned something) while 52% gave a 4 rating (they learned a lot). Thirty-two percent of the trainees ranked the training 3 (interesting) while 62% ranked it 4, or very interesting.

To evaluate durability of the training, follow up data were obtained for 83% of trainees by questionnaires mailed six weeks following the end of training. Sixty-seven percent of the 52 teachers reported that what they learned in the training program was "very useful;" 69% said they learned "a great deal;" 56% reported that they used what they learned "often;" and 73% reported maximum possible satisfaction with the program (they "liked it a lot.") Of those who responded, 60% used their program with other children. A total of 121 other children were taught. Twenty-five percent of the teachers responding developed a total of 44 new programs.

In evaluating the results of this and other inservice efforts, the variable of motivation merits discussion. Motivation is particularly important in training programs such as USE and URE which require active performance from trainees. The incentive

PARTICIPANT'S RATING OF TRAINING UNIT

A. FROM THE MATERIAL COVERED, I:

1	2	3	4	
LEARNED NOTHING	LEARNED VERY LITTLE	LEARNED SOMETHING	LEARNED A LOT	DON'T KNOW OR DON'T WISH TO ANSWER

B. I THOUGHT THE SESSION WAS:

1	2	3	4	
EXTREMELY BORING	BORING	INTERESTING	VERY INTERESTING	DON'T KNOW OR DON'T WISH TO ANSWER

Figure 3

to perform well during inservice training is probably less than the motivation to achieve in preservice training, when course credit and certification depend upon successful performance. Inservice training is often required but not accredited; if credits are given, they may be contingent upon attendance rather than performance. The majority of teachers who participated in USE or URE inservice training received no credit for training. A few were required to obtain an assigned number of inservice training hours, a school system requirement. These hours could have been obtained from any of a variety of experiences, many of which required no participation except attendance. The suspicion that motivation affects performance during training is supported by a comparison of training results from inservice cycles with the results of a URE cycle conducted for course credit in special education at a Nashville university. The nine undergraduate and graduate students enrolled met 100% of the 69 assigned field objectives, 99% of the 58 assigned in-class objectives and five of the six children they instructed made progress. Performance in this cycle surpassed that in any inservice cycle. There were, of course, many variables besides motivation that differed between the preservice and inservice cycles. The marked difference in results nevertheless suggests that further exploration of the influence of motivation on trainee performance may be warranted.

If performance is generally better when credit depends upon performance rather than attendance, inservice credits should, perhaps, depend upon performance. A major change in delivery of

inservice training would be necessary because appropriate performance would have to be defined and measured. This would be an expensive but worthwhile undertaking if improvement in skill acquisition resulted.

A major impediment to the use of performance measures is that evaluation of knowledge change is much cheaper. Knowledge change can be evaluated by pre and posttests. Unfortunately, changes in knowledge do not guarantee changes in skill acquisition. In a survey of 97 studies and evaluation reports of teacher inservice, Lawrence (1974) found that knowledge based objectives were more likely to be met than performance objectives. In the USE training cycles, the relationship between knowledge and performance was questionable. Trainees from three cycles with posttest data were ranked by mean posttest score and by percent of objectives completed. Only half of those in the top five in knowledge measures were among the top five achievers of performance objectives.

Evaluation in the field based training models, although expensive, serves as the basis for helping trainees to acquire new skills. If training is a one-time occurrence, it is likely that evaluation will be extraneous to the training process, for data analysis usually occurs only after training has ended. When training alternates with work in the field, evaluation occurs at several levels and the results of evaluation are incorporated into the training content. First, participants practice skills in class before applying them in the field.

Their behavior is observed and measured and feedback is given during the session. Remedial practice can occur if the results of evaluation indicate that skills have not yet been mastered. Second, participants bring products of their field work to class. Trainers not only evaluate products but also assist participants in making any necessary revisions. Finally, performance feedback accompanies observation of trainees in the field. Both the process and products of evaluation at every level serve to assist participants in mastery of skills.

In other words, the field based model incorporates supportive consultation into inservice training. The trainers act as consultants rather than as lecturers or judges. Such support is critical for mainstreamed teachers who have little prior experience in direct instruction or managing behavior problems. An additional provision for consultation was made in one cycle. Special educators who had already acquired many of the skills addressed in the training arranged to act as consultants to participating mainstreamed education teachers. This type of participation not only broadened special educators' skills, but also strengthened the school system's support network.

The field based model can help teachers to apply the skills addressed during training in the classroom. The model may require a greater commitment of time and, therefore, money than one-time inservice efforts. The model, however, offers trainees the opportunity to receive expert assistance in preparing to apply new techniques and materials in their own classrooms and to receive assistance in evaluating their efforts during and

after application. To the extent that this model facilitates generalization of skills from the inservice setting into the classroom, the results are worth the time and effort.

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