DOCUMENT RESUME

ED 189 079 SP 016 289

AUTHOR Borich, Gary D.
TITLE A Needs Assesment Model for Conducting Follow-Up Studies of Teacher Education and Training.
INSTITUTION Texas Univ., Austin. Research and Development Center for Teacher Education.
SPONS AGENCY Organisation for Economic Cooperation and Development, Paris (France).
PUB DATE 79
NOTE 10p.

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Competency Based Teacher Education; *Evaluation Methods; *Followup Studies; Higher Education; Inservice Teacher Education; *Needs Assessment; Preservice Teacher Education; *Program Evaluation; Program Improvement; *Summative Evaluation; Teacher Improvement; Training Objectives

ABSTRACT

This article presents a methodological model that can be employed to conduct follow-up studies of preservice and inservice teacher training programs. The model first defines a training need by identifying "what should be" and "what is" in the knowledge, perfcrmance, and consequence (reaction to behavior) competencies of trainees. The distance between these two poles is an index of the program's effectiveness in teacher training. The needs assessment model, which can be used for self, summative, or formative evaluations, is then implemented through the: 1) listing of competencies, 2) surveying of inservice teachers for competency attainment, 3) ranking of competencies according to the level of importance and the level of attainment, 4) comparing of high priority competencies to the content of the training program, and 5) revising cf the program or the competency. The model can be adapted and extended to suit other institutions and purposes. (CJ)

A Needs Assessment Model for Conducting Follow-Up Studies Of Teacher Education and Training*

Gary D. Borich

The University of Texas at Austin

Teaching competencies derived from process-product studies (Borich, 1979; Borich and Kash, 1979; Medley, 1978; Rosenshine, 1975) have contributed in some degree to the content of inservice evaluations of teacher training. However, because the intent of these studies has been limited to investigating teaching behavior vis-a-vis pupil outcomes, they have been less useful in suggesting the methodology with which institutions could conduct inservice evaluations of their training programs. This article presents a methodological model that can be employed in conducting follow-up studies of preservice and inservice training.

Overview of the Model

Training institutions are continually in search of ways to improve their training programs. Methods for determining needed areas of improvement have ranged from telephone surveys to full-fledged research studies complete with control and experimental groups. Perhaps most used among these methods has been the follow-up questionnaire mailed to recent graduates for the purpose of eliciting their opinions about the training they received and the extent to which this training may or may not have prepared them to meet the immediate demands of their teaching environment. While many of these surveys are creatively and exhaustively carried out, their ultimate utility rests on the

*This model was prepared for the Organization for Economic Cooperation and Development (OECD) and represents a portion of the author's final report as a member of OECD Expert's Committee on the Evaluation of Inservice Education and Training. See also the Journal of Teacher Education, 1979, Jan.-Feb. XXX, p. 77-86, for a related portion of the author's report.

extent to which they provide direct and unambiguous recommendations for program improvement. Unfortunately, the excitement and challange of the survey process can turn to disappointment when evaluators are faced with the task of making unambiguous recommendations from the data they receive.

One approach to conducting a follow-up study is to design the survey instrument in such a way as to "lock in" from the outset the type and quality of the data that will be received. This can be accomplished by employing a specific model for collecting the data which establishes prior to questionnaire development the precise scheme by which the data will be analyzed and interpreted. This can be done by designing the questionnaire in such a manner that respondents provide data in a form that can be weighted and prioritized so that responses are linked to a practical decision framework for program improvement. Conceptualizing possible program weaknesses as relative "needs" and utilizing a needs assessment model for data collection is one means of accomplishing this.

A training need can be defined as a discrepancy between an educational goal and trainee performance in relation to this goal. The process of identifying training needs can be conceptualized as a discrepancy analysis that identifies the two polar positions of "what is" and "what should be." Training programs can apply this model by defining "what is" as the measured behaviors, skills and competencies of the trainee and "what should be" as the goals or intents of the training program. The discrepancy (or distance) between these two poles can then be used as an index of the effectiveness of the training program in reaching its intended goals and to identify components of the training process that fail to

engender specified behaviors. Discrepancies can be prioritized by a panel of trainers or by statistical techniques that weight the relative importance of each goal statement from values assigned to them by the respondents. Prioritized discrepancies, ranked in descending order, provide the framework for deciding what parts of the program to modify or revise.

Model

Following are the steps involved in implementing the needs assessment model.

1. List competencies. Competency statements can be derived from the competency implications of teacher effectiveness studies or from the intents and objectives of teacher trainers, or both. Inservice teachers, trainees and program administrators can assist in this task by supplying competency statements derived from an examination of the activities and materials used in the training program or from a list of program objectives. All competency statements are checked against program activities and materials to insure that they actually represent program objectives. These competency statements are then used in constructing the survey instrument.

2. Survey inservice teachers. All or a sample of the trainees who have completed training are asked to rate (a) the relevance of each competency to their current job function (or perceived future job function) and (b) their current level of attainment of each competency. A typical questionnaire might take the following two-part format.

Competency	Perceived Relevance					Perceived Level of Attainment				
	Low				High	Low				High
1.	1	2	3	4	5	1	2	3	4	5
2.	1	2	3	4	5	1	2	3	4	5
3.	1	2	3	4	5	1	2	3	4	5
4.	1	2	3	4	5	1	2	3	4	5

An alternative format for rating competency attainment is to divide each competency statement into "knowledge" competence, "performance" competence, and "consequence" competence. These terms can be defined on the questionnaire in the following manner.

Knowledge competence: Ability to accurately recall, paraphrase, or summarize the procedural mechanics of the behavior on a paper and pencil test.

Performance competence: Ability to accurately execute the behavior in a real or simulated environment in the presence of an observer.

Consequence competence: Ability to elicit learning from pupils (as recorded on tests of affective and/or cognitive achievement) by using the behavior in the classroom.

These distinctions require the teacher to make finer judgments in rating each competency and in turn permit a more refined evaluation of the training program. A questionnaire incorporating these competency dimensions might take the following form:

Competency	Perceived Importance	Knowledge of Mechanics of Competency	Ability to Perform Competency	Ability to Produce Pupil Learning with Competency
1.	1 2 3 (4) 5	1 2 3 (4) 5	1 2 (3) 4 5	1 (2) 3 4 5
2.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
3.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5

Knowledge discrepancy = 0

Performance discrepancy = 1

Consequence discrepancy =2

Each competency then yields for each respondent three discrepancy scores which indicate the effectiveness of the training program in producing (a) trainee knowledge, (b) trainee performance, and (c) pupil consequences. Using these discrepancy scores as a guide, components of the training program can be revised to produce increased "knowledge," "performance," and/or "pupil impact." The three discrepancy scores above might indicate that field experiences for this competency (performance and consequence) need improvement but classroom instruction (knowledge) is adequate.

3. Rank Competencies. Competencies are then ranked according to ratings obtained on the questionnaire. For each competency the difference between perceived importance and perceived level of attainment is calculated across the three dimensions: knowledge, performance, and consequence. These differences are ordered according to magnitude or relative weight, calculated by multiplying the discrepancy score by the average perceived importance determined over all respondents. In the above example, if the average perceived importance of competency 1 were 2.5, the resulting knowledge discrepancy would be 0.0, the resulting performance discrepancy would be 2.5 and the resulting consequence discrepancy would be 5.0. Other competencies deemed either more or less important than this competency would have their discrepancies adjusted accordingly. This weighted ordering takes into account that a small discrepancy on one competency may be of greater perceived importance than a large discrepancy on another competency. Those discrepancies with the greatest positive rank difference would have the highest priority for revising the training program.

4. Compare High Priority Competencies with the Content of the Training Program. High priority competencies determined from the above analysis are compared to the instructional experiences, components, and materials that receive high priority in the training curriculum. The instructional staff might examine instructional time devoted to the competency, the clarity of the instruction, adequacy of the training materials, and the number of minutes or hours allotted to students for practicing the competency in order to determine the emphasis that the training program is actually placing on the competency. When a competency is highly valued but poorly performed, the problem may derive from insufficient rather than ineffective training.

5. Revise Program or Revise Competency. Where possible, the emphasis of the training program is modified to match high priority competencies. Or, if altering the training program to emphasize a particular high priority competency is not cost-effective, other training resources (e.g. self-paced modules, programmed texts) or other alternatives (e.g., agencies and institutions at which the inservice teacher may obtain the needed training) are recommended to program graduates.

Characteristics of the Model

The needs assessment model can be extended and adapted to meet a variety of institutional needs. For example, the needs assessment instrument could be used in conjunction with a similar survey completed by supervisors or administrators in order to corroborate the subjective responses of the teachers. An evaluation of training, for instance, might be based on the mean discrepancy across teachers and supervisors, thereby taking into account a second and presumably more objective group of respondents. Or, competencies for which the reported level of attainment differs dramatically

from supervisor to teacher can be withheld from analysis pending clarification from other data sources, such as the classroom observation of teachers.

Evaluations employing the needs assessment model can have multiple purposes. These purposes derive from the nature of the needs data which can be employed with equal effectiveness for making either formative or summative judgments about the training program. Formative data revealing the perceived importance of the competencies taught can serve as a check on the relevance of the training and as a guide to what additional training may be needed. Summative data revealing the level to which trainees attained the competencies compared with trainees from other programs or institutions can serve as an overall check on the program. The versatility of these data make the needs assessment model less restrictive and more developmental than other approaches to the evaluation of training.

The needs assessment model is essentially a self-evaluative procedure which relies on the judgments of teachers about their own performance. The assumption underlying the needs model is that the performer (teacher) can best judge his or her own performance and, when explicitly asked to do so, can make an objective judgment. This assumption is most tenable when the purpose of the data collection is the evaluation of training and not the evaluation of individual teachers. If desired, efforts to make the needs assessment model more objective can include supervisor-administrator ratings or limited follow-up visitation. These additions can enhance the credibility of the self-reports and provide an additional vantage point from which to judge discrepancies between program intents and the performance of

trainees.

An important practical characteristic of the needs assessment model is the ease with which it can be implemented. It is sufficiently direct that data analysis and instrument construction are no more complex than with any type of follow-up survey; yet, the amount and interpretability of the data it yields is considerably greater than many types of follow-up questionnaires. Consequently, it is a model that is easily implementable by teacher trainers who need immediate feedback on the effectiveness of program experiences and materials and who have limited resources.

Finally, we must note the definition of evaluation implied by the needs assessment model: determining the congruence between "what should be" and "what is," i.e., between what the teacher should be able to do and what the teacher can do. The evaluation is complete when the training program has objectively determined the discrepancy between these two poles. This definition calls for the development of goals and objectives (in the form of competency statements) and an assessment of whether these goals and objectives have been met. This is accomplished by obtaining self-report data about both the perceived value of the training objectives and the level to which trainees have attained the objectives.

References

Borich, G. Implications for developing teacher competencies from process-product research. Journal of Teacher Education, Jan-Feb. 1979, Vol. XXX, 1, 77-86.

Borich, G. and Kash, M. What the teacher effectiveness research has to say about teaching practices and student performance. Atlanta, Ga.: Georgia State Department of Education, 1979. (Also available from the Research and Development Center for Teacher Education, The University of Texas at Austin, 78712.)

Medley, D. M. Teacher competence and teacher effectiveness. Washington, D.C.: AACTE, 1977.

Rosenshine, B. Review of teaching variables and student achievement. In G. Borich The Appraisal of Teaching: Concepts and Process. Reading, Mass.: Addison-Wesley, 1977.