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When one looks at a person before he is able to solve a problem and then after he has solved the problem, one observes that change has occurred.

A problem solving approach to instructional evaluation

by Judith A. Redwine

Judith A. Redwine is director of elementary education at Indiana University at South Bend. She has done extensive work with teachers and administrators, published and developed materials in the areas of instructional leadership, supervision, evaluation and professional goals and objectives as related to teacher evaluation. She is the co-author of another article appearing in this issue.

The purposes for teacher evaluation can be divided into two general categories: administrative and instructional.[1] Evaluative information is collected to improve decision making with respect to rehiring, transfers, termination, promotion and tenure (administrative) as well as instructional and curricular issues (instructional). While these categories are not mutually exclusive, the focus of the evaluations may be different. The problem solving approach to teacher evaluation is intended to help administrators and supervisors conduct more effective instructional evaluation.

Problem Solving Approach to Instructional Evaluation

Determining methods for increasing teacher effectiveness is a problem for which solutions must be sought. When one looks at a person before he/she is able to solve a problem and then when he/she is able to solve the problem, one observes that change has occurred in one or more of the following: cognitive processes, behavioral response production or perceptual processes.[2] *The problem solving approach to instructional evaluation is a process by which changes are effected in the teacher's thinking, behavior and/or perception, thereby enabling the teacher to work out solutions to the problem of increasing his own teaching effectiveness.*

The problem solving approach to teacher effectiveness meets the criteria of a sound formative evaluation program; i.e., it is cooperative, situation focused, diagnostic rather than judgmental, enhances personal and professional self respect and self image, encourages experimentation, creativity and variation in all those involved; and finally, it results in a higher quality and greater variety of opportunities for learning.[3]

Operationalizing the Problem Solving Approach

There are six distinct steps involved in the problem solving approach to instructional evaluation. These steps are: the preliminary conference, pretreatment data collection, diagnosis and prescription, treatment, post-treatment data collection, and the summary conference. (See Figure 1) The purpose of each phase as it relates to effecting the changes in cognitive processes, behavioral response production and/or perceptual processes necessary to stimulate teacher problem solving activity will be discussed in some detail. The role of the evaluator will also be described for each step.

1. **Preliminary Conference.** The evaluator (supervisor or administrator) and the evaluatee (teacher) mutually determine areas of interest or concern in the preliminary conference.

The first of these preliminary conferences is held early in the school year. Subsequent preliminary conferences are held periodically throughout the year with the spacing and frequency determined by the time required to complete the cycle.

Sources stimulating these mutual concerns and/or interests will vary. Some will develop from existing classroom difficulties; others will stem from professional reading, inservice sessions, university courses, etc. The courses tend to arouse concerns which were not present previously; i.e., will cause the teacher to raise his expectation level[4] thus causing uncertainty or dissatisfaction in an area where he/she was previously unconcerned or perhaps pleased with his performance. Whatever the source, it is desirable that some change in thinking occur;

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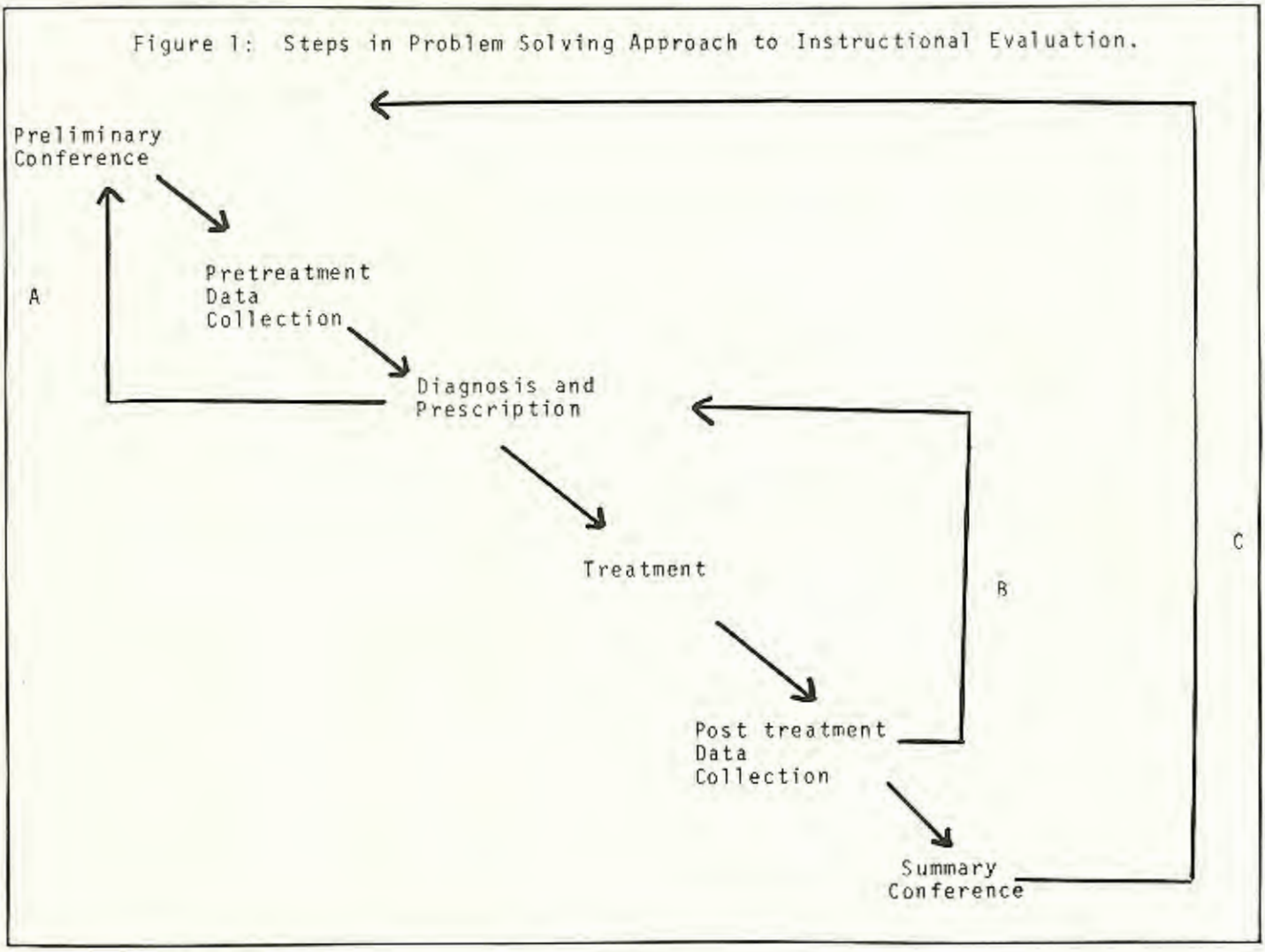
i.e., that the teacher begin to look at teaching/learning in a different way. For example, the teacher who expresses a concern regarding lack of student interest would benefit from a reminder of Bloom's taxonomy of cognitive activities[5] or Krathwohl's taxonomy of affective activities.[6] Through this discussion he can be led to look at the activities in his classroom in new ways. He may now wonder whether student boredom may be a result of a lack of a variety of activities on too low a level to be challenging. Similarly, an article which presents a theory of teaching as a special form of communication[7] may cause a teacher to question the adequacy or authenticity of his verbal and nonverbal communication. In each case, new ideas have been introduced which arouse uncertainty. Now the teacher has a need for data in order to determine how he measures up to the theory. Accordingly, the evaluator and the teacher move to deciding upon a method whereby this baseline data can be collected. Decisions regarding when, where, and by whom the data are to be collected are also mutually determined before the preliminary conference is concluded.

2. **Pretreatment Data Collection.** Means of collecting data may include: videotapes, audiotapes, interviews, surveys, tests and observation instruments or combinations. While the manner in which data are collected will undoubtedly vary, the purpose of the data collection always stems directly from the needs and interests expressed in the preliminary conferences.

The type of data collection is dependent upon the focus of the evaluation. Data may be collected on teacher behaviors, student behaviors, the classroom environment or some interaction among the three. The result of the data collection may be a list and frequency count of student behaviors which the teacher appears to be reinforcing, an analysis of nonverbal communication using an instrument designed by the evaluator and/or the teacher, a chart indicating percent of class time devoted to each of Bloom's levels, a frequency count of question types[8] used by students and/or teacher, a summary of the results of a student attitude survey, etc. In every case, data which require little observer inference are concerned with specific behaviors related to specific problem areas about which the teacher has expressed a concern will be collected. The purpose of the pretreatment data collection is to provide baseline data to assist the teacher in clarifying his perception of the teaching/learning situation.

The degree of involvement of the evaluator in the data collection step will vary. In some cases, he may spend several hours in direct classroom observation, in other cases he may assist the teacher in the design of a questionnaire to be used in gathering student data and in

Figure 1: Steps in Problem Solving Approach to Instructional Evaluation.



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yet others, the teacher may simply apprise him of the data gathering method.

3. **Diagnosis and Prescription.** As soon as possible after the data have been collected, the evaluator and the teacher meet to discuss the baseline data. The data serve as an impetus for teacher self-diagnosis. In this step the evaluator acts as a facilitator, guiding the teacher through a review of the data, eliciting a reaction from the teacher (if it does not occur spontaneously), and then assisting in the determination a prescription based upon the diagnosis. For example, viewing and coding a videotaped episode for teacher nonverbal behavior may indicate that the teacher comes across as unenthusiastic, unhappy, etc. The teacher himself expresses the judgment needed to make a decision to change his behavior, e.g., "I wouldn't like to have to watch myself all day long!" With another teacher, appropriate questions from the evaluator may be necessary to motivate the teacher to express a desire to change his behavior. The problem solving approach to teacher evaluation does not eliminate the evaluator's responsibility to exercise professional judgment in order to improve the teaching/learning situation. It does provide an opportunity for a teacher to assume this responsibility but if the teacher is incapable or unwilling, then the evaluator must take on this role.

Prescribed behavior changes may involve increasing existing behavior, weakening or extinguishing of existing behavior, or developing totally new behaviors. Often the change in self perception effected by the diagnosis is sufficient to direct the teacher in modifying his own behavior. The role of the evaluator in this step is to see to it that appropriate changes in self perception actually do occur to provide support to the teacher in accepting these realities, and to assist the teacher in designing a behavior change plan if necessary.

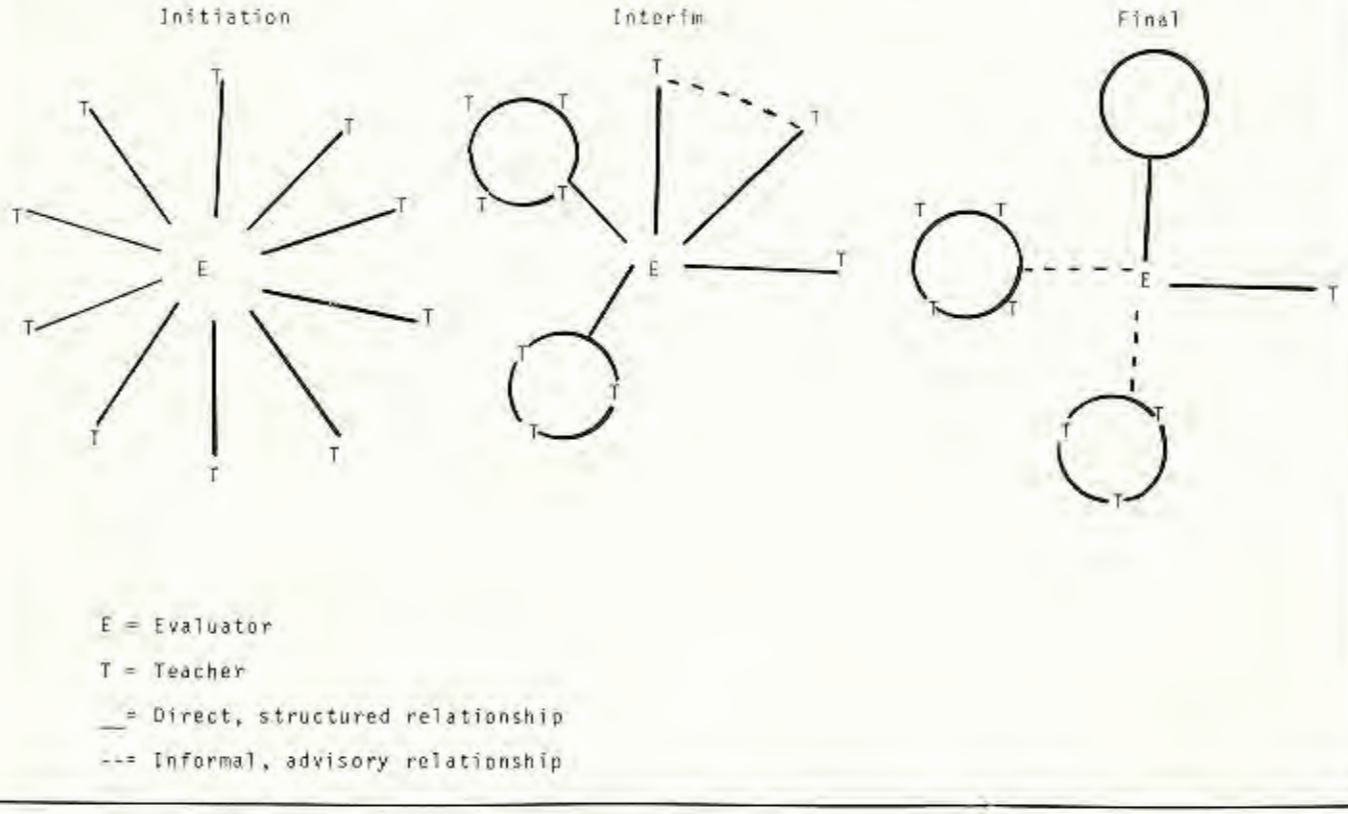
It is also possible that the data would support the teacher's original satisfaction with his performance. In this happy circumstance, a new area of concern is selected and the cycle begins again within the same conference. (See A in Figure 1.)

4. **Treatment.** In this step the teacher moves ahead in his behavior change plan. Again, the extent to which the evaluator is involved will vary with the needs of the teacher and the nature of the plan. The situation may require the presence of the evaluator in the classroom to reinforce a new behavior such as smiling or asking higher level questions. At other times the teacher may be able to carry out his own behavior change plan without assistance from the evaluator.

5. **Post Treatment Data Collection.** When the teacher feels he/she is ready or after an appropriate interval, new data are collected in a manner similar to the pretreatment data collection. The two sets of data are compared to measure change. Statistical analysis of the data will depend on the level of data collected.

6. **Summary Conference.** Pre and post treatment data are compared. If a mutually satisfactory change has occurred, and time permits, the cycle begins again with

Figure 2. Group Problem Solving Approach to Instructional Evaluation



another concern. (See C in Figure 1.) Discussion of the new concern or interest would usually occur within this conference; i.e. the summary conference develops into a preliminary conference. If sufficient change has not occurred and the concern is deemed worth pursuing further, the prescription is revised and the new treatment is applied. (See B in Figure 1.) In this case, the summary conference returns to the prescription phase.

Group Instructional Evaluation

While this approach has been described within a one-to-one framework, the same approach can be used to develop instructional evaluation groups comprised of, and eventually led by, teachers themselves. In order to initiate the problem solving approach to instructional evaluation, the evaluator is involved with individual teachers as depicted in the initiation diagram within Figure 2.

Depending on the commonness of teacher interests and needs and compatibility of the teachers involved, the evaluator gradually encourages the formation of teacher groups as depicted in the interim diagram within Figure 2. These teachers motivate, support, and assist one another in finding solutions to their problems of increasing teaching effectiveness. In this interim time, the evaluator leads the group as they move through the same phases described earlier.

Gradually, as these groups become ready to carry on their own problem solving, the role of the evaluator is taken over by the teachers within the group. Although the groups now operate somewhat autonomously, the former evaluator may be used in an advisory capacity from time to time. See final diagram within Figure 2.

Since not all teachers are simultaneously ready to assume the responsibility for participation in these autonomous groups, the evaluator still continues to work directly with some individual teachers. A teacher may choose to work with more than one evaluation group; e.g. one group may focus on cognitive goals whereas another might concentrate on affective goals. It is also possible that a teacher might continue to work individually with the evaluator while participating in an evaluation group.

The end result will be groups of teachers who truly are professionals in that they will have assumed responsibility for the practice of their profession.

The problem solving approach to teacher evaluation assumes that the teacher has a good self concept and is a professional; i.e., capable of operationalizing theory, diagnosing his own performance (given the necessary data) and designing and executing behavior changes necessary to increase teaching/learning effectiveness. It requires evaluators who are strong instructional leaders, who stimulate a steady flow of ideas among teachers, understand theories of teaching/learning, basic data collection techniques and statistical analysis, possess good communication skills and believe in and will go to great lengths to develop the potential of teachers. The result of the problem solving approach to teacher evaluation will be teachers who are capable of, and motivated to seek, their own solutions to the persistent problem of increasing teacher effectiveness.

(The author wishes to acknowledge the perceptive insights shared by Dr. Vincent Peterson and Dr. James Walter during the preparation of this article.)

FOOTNOTES

[1]McNally, H.J., "Teacher evaluation that makes a difference," *Educational Leadership*, V. 29, N. 4, pp. 353-7, January, 1972.

[2]Kelley, H.H. and J.W. Thibaut, "Group problem solving," in *Handbook of Social Psychology*, V. 4, G. Lindzey and E. Aronson (eds.), Reading Massachusetts: Addison-Wesley, 1969. pp. 1-100.

[3]McNally, op. cit.

[4]Kelley and Thibaut, op. cit., p. 10. The authors suggest that a person has a particular level of aspirations for a given task or relationship and will only engage in problem solving activities when outcomes are perceived to fall below this level.

[5]Bloom, B.S. (ed.) *Taxonomy of Educational Objectives: Handbook of Cognitive Domain*, New York: David McKay Co., Inc. 1956.

[6]Krathwohl, D.R., Bloom, B.S. and B.B. Masia. *Taxonomy of Educational Objectives Handbook II: Affective Domain*. New York: David McKay Co., Inc. 1956.

[7]Lewis, W. "Selected concepts of communication as a basis for studying mental health in the classroom," in *Teaching: Vantage Points for Study*, R. Hyman (ed.) Philadelphia: J.B. Lippencott, 1968. pp. 43-47.

[8]Cunningham, R. "Developing question-asking skills," in *Developing Teacher Competencies*. Englewood Cliffs, N.J.: Prentice-Hall, 1971, pp. 81-130.

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