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ABSTRACT

Assessment of proper control and suitable learning environment can proceed through collection of data related to teacher planning, student attitudes, and interactive behavior of teachers and pupils. The use of such data for improvement of instruction can provide valid and feasible assessment procedures. Directed skill training, competency contracts, and inquiry projects are all appropriate means of assessment and improvement at this stage in the development of techniques for the evaluation of teacher effectiveness. Inquiry projects can involve comparisons of behavior with a model, comparisons of behavior with stated behavioral objectives, and comparisons of behavior over time. Peer cooperation in collection of interactive data is apt to contribute to development of skills in coding behavior and therefore to lead to greater behavior change. (Author)

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THE ASSESSMENT OF PROPER CONTROL AND SUITABLE LEARNING ENVIRONMENT

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REPORT A72-21

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THE ASSESSMENT OF PROPER CONTROL AND SUITABLE LEARNING ENVIRONMENT

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A Point of Departure

This paper is concerned with criteria which can be used to evaluate how supervisors, principals, and teachers perform their adjunctive duties, help to create proper control, and jointly produce a suitable learning environment for the young people who are required by law to attend school. Criteria of evaluation refer to things that can be measured, so we must first ask what measurement techniques are valid and feasible.

If the goal of assessment is a one-time evaluation to be used for purposes of determining retention and merit pay increases, then, for assessment to be valid, we need:

1. Strong general agreement on the meaning of proper in "proper control" and suitable in "suitable learning environment"
2. Strong research evidence linking particular teacher behaviors to both control and the learning environment
3. Measurement instruments that are well developed, that measure most if not all of the facets of behavior related to control and learning environment, and that probably will be administered by outside consultants rather than by local school personnel, in order to maintain objectivity of results

It is not feasible to satisfy any of these three require-

ments, given our multivalued culture, the current state of educational research, and the present financial situation of most California school districts. Therefore, assessment viewed as a one-time evaluation cannot be valid and feasible at the present time. It is somewhat ironic that the legislative committee hearings on the Stull Act apparently provided no testimony (McDonald, 1972) on the adequacy or inadequacy of the currently available evaluation techniques. However, since the Stull Act makes provisions for counseling and advising certificated personnel after an evaluation, we can assume that there is a strong emphasis on the improvement of performance.

When the goal of assessment is seen as learning how to improve instruction, a valid assessment requires:

1. Agreement between the teacher and the supervisor on the instructional goals and/or the instructional theory to be utilized
2. Some research evidence linking particular teacher behaviors to control and learning environment
3. Some measurement instruments that can be administered by local school personnel as well as by outside consultants
4. Some training materials to enable teachers and administrators to improve skills when a need for improvement has been identified

There are areas of performance for which these requirements can be met. Therefore, assessment aimed at improvement of instruction can be considered to be both valid and feasible. Feasibility will be increased if at least some of the available training materials are self-instructional. This will make skill improvement more individualized and less expensive.

Clarifying Terms

In order to discuss how the provisions of the Act dealing with adjunctive duties, proper control, and suitable learning environment can be implemented, it will be necessary to propose a meaning for the various terms that appear in this paper. The two terms which stand out as begging for clarification are proper control and suitable learning environment. A good deal of space could be assigned to this task, but we prefer to take a shorter, pragmatic approach. The definitions below were determined largely by the limited number of assessment techniques that are available and the mandate of the Act, which is, to start now. Those readers who would prefer to define these terms differently should remember to reconcile their preferences with the operational meanings that the assessment techniques provide.

1. The goal of evaluation and of the Stull Act itself is the improvement of education, particularly teaching.

2. Proper control ultimately rests on a judgment that the methods of instruction are consistent with the purposes of instruction. Most teachers work in school districts which have a well-established curriculum of study. Yet any curriculum is primarily a guide that a teacher constantly adapts to his instructional purposes, his style of teaching, and his students. When this process of adaptation results in all of the students using the same materials and working on the same assignments under relatively close teacher supervision, a more formal and traditional pattern of active teacher control will seem consistent. When a teacher chooses to create the freedom necessary for independent, individualized learning activities, then a more flexible pattern of control will seem consistent. All teachers exert control. We can define proper control as the teacher's ability to create and maintain learning activities in which the intended learning can occur without undue

disruption. The judgment of what is proper and what is improper will not be the same for different adaptations of the curriculum. For example, freedom to talk to another student, move about the room, choose one's own learning task, etc., might be considered a symptom of improper control in a formal classroom but such freedom would be proper in a more open classroom. We might further note that proper control is essentially an adult concept. The values of the parents, the teacher, the principal, or those who provide professional supervision are usually the primary determinants of what is "proper."

3. A suitable learning environment, on the other hand, is essentially a child-centered concept. A learning environment refers to the students' opportunity to exploit a situation for the purpose of learning. A suitable environment means that the arrangements for learning match the interests and abilities of the students who are there to learn. One important aspect of a suitable learning environment is that students can participate effectively no matter what their ethnic origins may be and regardless of the socioeconomic level of the community. There are many features of a learning environment that we could emphasize, but for it to be suitable, we would at least expect the students to be interested in coming to class, to look forward optimistically to the work involved, and to obtain a sense of satisfaction from participating, especially in terms of self-respect and self-confidence.

4. Adjunctive duties are presumably to be distinguished from active teaching, administering, or supervising. One might guess they were added to the Stull Act by those who could remember when teachers also taught Sunday School, principals were expected to plan the Community Chest drive, and supervisors were expected to join a hospital auxiliary. In today's schools adjunctive duties may involve educators in projects to increase the parents' participation in the school,

to revise curricula, or to redesign report cards. The most important adjunctive duty related to classroom control and learning environment is taking the responsibility for analyzing one's own performance, exploring professional alternatives, and deciding when an alternative is an improvement; to this we add assisting others to do the same.

5. Competence and standards are probably used in the language of the Act in the simple sense of performing one's job in a satisfactory manner. In this paper we point out that information about an individual's performance can be used in several ways. To invoke standards usually means that criteria of performance can be identified and assessed, that certain minimal levels can be established, and that individual performance measures can be compared with norms from an appropriate reference group. Unfortunately, it is difficult to invoke standards when adjunctive duties are not consistent from one individual to the next, when proper control varies from one situation to the next, and when a learning environment becomes suitable precisely because it is custom-built to meet the needs of a particular group of youngsters. Faced with this diversity, we suggest that information about performance can be compared with behavioral descriptors of selected skills which, in turn, might be derived from a model of teaching. Another alternative is to compare an individual's performance at one point in time with the same performance at another point in time in order to determine the presence or absence of change. These applications of "standards" are likely to improve instruction provided those in the field act wisely by adapting the provisions of the Stull Act and using research results judiciously.

6. Student progress is dealt with in another paper at this conference, but it will be discussed here in terms of outcomes other than subject matter achievement. Attitude inventories can be used to assess student perceptions of the

teacher and the learning activities. Such measures are associated with patterns of verbal interaction (Flanders, 1970, p. 389). We would define student progress to include these student perceptions of the learning environment as well as patterns of desirable student behavior that can be observed during learning.

Adjunctive Duties

Both teaching and nonteaching certificated personnel now face the task of evaluating professional performance. We have defined this task as an adjunctive duty which has been added to all certificated job descriptions. As a result, one can now say that it is the duty of supervisors, principals, and teachers to participate in the evaluation of their own professional performance and to help evaluate the performance of their colleagues.

The same steps of overall evaluation can be used with a wide variety of adjunctive duties such as projects to increase parent participation in the schools, to redesign report cards, or to change the curriculum.

Procedure	Features to be Evaluated
1. The purpose of the project is decided by conferring with those who will participate.	Is the project easy/difficult, significant/insignificant, responsive to current priorities/not responsive, etc.
2. Plans are made to assess progress at appropriate check points.	Are plans practical (space/time/resources); are objectives specific/ambiguous, consistent with purpose/inconsistent, etc.

Procedure	Features to be Evaluated
3. Project is carried out.	Were final objectives and check point objectives achieved/not achieved; did a change occur/not occur; can the nature of change be determined/not determined, etc.
4. The consequences of the project are judged to be an improvement or not an improvement.	Were there sufficient/insufficient data to determine inprovement; can results become part of the program/not part of the program, etc.

This outline is a practical plan of evaluation which would have been appropriate at any point in the history of public education. Given the progress that has been made in the 1960's in analyzing teaching, this old outline can now be implemented with much greater specificity, especially with regard to classroom instruction. The objectives stated in Step Two can be particular skills such as asking questions, using certain responsive acts more frequently, learning how to modify patterns of instruction from one situation to the next, or learning how to write the objectives of instruction in denotative language. This means that the standards of performance which are set are likely to be unique to each project, even though they can be assessed with considerable objectivity.

Teachers, of course, will vary widely in their knowledge of new assessment procedures and their skill in using them. Evaluation projects designed by less experienced teachers will doubtless make use of simple assessment procedures. We can hope that this kind of knowledge and skill will improve with experience so that more extensive evaluation projects

may occur as teachers' competence increases.

Nonteaching Certificated Personnel

The nonteaching certificated personnel who work most closely with teachers to improve both professional performance and instruction are likely to be supervisors and principals. We propose that it is their adjunctive duty to promote the evaluation of instruction in ways that will contribute to the improvement of education.

Research

Studies of successful and unsuccessful attempts to improve public school education by means of various innovative programs have indicated that the school administrator plays a key role in the change process. Brickell (1964, pp. 503-505), surveying new instructional programs in New York State, noted that introduction of change depended almost exclusively upon administrative initiative. The most successful innovations were those which provided the most elaborate support to teachers as they attempted to change their instructional practice. Fox and Lippitt (1964, p. 297) found a much higher probability of instructional improvement when the efforts of the classroom teacher were accompanied by informed and sympathetic support from both school administrators and professional colleagues. They further noted that channels of communication within a school were needed to enable innovative teachers to share the results of their efforts with colleagues who were facing similar classroom problems. If such channels existed, teachers learned from each other.

California's experience with Title III programs (Johnson, 1964, p. 171) provides additional evidence of the need for administrative leadership. Fifty percent of the elementary schools in California reported extreme difficulty with in-service programs because of the inability of administrative

and supervisory staff to provide effective leadership in the substantive content of new programs. As a result, districts were unable to complete their in-service plans or to conduct adequate evaluation of programs.

The indication of these and other, similar, studies (Grieder, 1969, p. 1046) is that improvement of control and learning environments is not apt to result from the isolated efforts of individual classroom teachers to change their instructional practices. Support systems are essential.

Recommendations

Since the role of the administrator is such a critical one, evaluation of adjunctive duties could begin with the following questions:

1. Does the principal or supervisor organize space, time, incentives, and resources for the improvement of teaching in sufficient quantity and quality so that a potent change environment for teachers (Flanders, 1970, pp. 336-344) comes into existence?

2. Does the principal or supervisor collect a variety of evaluation procedures and the necessary resource materials so that teachers with different interests and abilities can obtain access to an evaluation procedure that matches their knowledge and skills?

3. Does the principal or supervisor update his own competence regularly? What is the most recent new skill he has acquired? When and how did he acquire it?

4. Does the principal or supervisor facilitate the communication of teachers with their colleagues about their own attempts to improve instructional procedures? Which teachers communicate with whom? How many teachers within the school are involved in this communication network?

5. What outside resources and/or consultant services does the principal or supervisor make available to teachers to provide input about the particular problems they are trying to

solve?

It is quite probable that the support system in every school in California needs to be improved if implementation of the Stull Act is to lead to instructional improvement. Effective support systems will not be established without effort. It will be some time before they are fully developed, if indeed they ever are. But preliminary steps can be taken immediately.

Providing a Model of Inquiry. Supervisors and principals who design and conduct inquiry projects in which their own skills for supporting teacher evaluation are the objects of inquiry are likely to accomplish several desirable outcomes with the same project. Not only will they learn more about the evaluation of instruction and how they can support it, but even more important, they will provide a model of self-assessment and self-development for the teachers with whom they work. The positive reinforcement effects of providing a model of behavior, which Bandura and his colleagues at Stanford have reported (Bandura and Kupers, 1963), are more likely to be realized if the steps of inquiry that supervisors and principals carry out are similar, if not identical, to the procedures teachers will use. Consider the following parallels:

Inquiry Projects*

Principals or Supervisors	Teachers
1. Identify evaluation activities you would like your teachers to carry out.	Identify patterns of pupil behavior you would like your pupils to exhibit.
2. Identify at least two different patterns of super-	Identify at least two different patterns of teacher

*A sample plan for a teacher inquiry project is included in Appendix A.

Principals or Supervisors	Teachers
visory behavior that you think will support the desired teacher behavior.	behavior that you think will support the desired pupil behaviors.
3. Practice these supervisory patterns in order to learn them and to develop observation schemes for analyzing them.	Practice these teaching patterns in microteaching and train a colleague to observe these patterns systematically.
4. Try out both supervisory patterns in comparable circumstances and collect data to evaluate and compare the two patterns.	Teach with each pattern in comparable situations and collect observation data to show that the patterns were performed, together with other data to show pupil reactions.
5. Analyze the data and decide which pattern of supervision works best.	Analyze the data and decide which teaching pattern is more effective.

The parallels in these outlines are meant to show how teachers, supervisors, and principals can evaluate their own professional performance by following almost identical steps of inquiry. To the extent that this is true, supervisors and principals can take the lead in demonstrating how to evaluate one's own performance under circumstances in which the teacher's behavior is not being evaluated. If the assessment of teachers includes the progress of their pupils, then why not base the evaluation of supervisors and principals partially on the quality and quantity of inquiry projects that are literally carried out by teachers?

Initiating Retraining Projects. Supervisors and principals can also initiate projects to develop new skills, and

can illustrate the process of continuous learning for the teachers with whom they work. The administrator who is actively retraining himself while on the job demonstrates the acceptability, even desirability, of admitting the need to learn new skills.

The Kettering Foundation has developed a design for helping administrators retrain themselves. In the Individualized Continuing Education (ICE) system, the school district supports the principal in an individually designed program of self-improvement that will contribute to desired improvements in the school and district (Kettering, 1970). An extension of the ICE program is called SPAR, Self-Performance Achievement Record. In this program the principal's self-development plans are laid out in a contract with specification of behavioral objectives, performance criteria, and acceptable evidence that these have been met (Olivero et al., 1972). Skill training for administrators and teachers could have the following parallels:

Competency Contracts*

Administrators	Teachers
1. Survey faculty communication channels devoted to improving instruction.	Record several segments of classroom interaction, analyze them, and identify the primary characteristics.
2. Determine changes in communication that have highest priority, and skills that will implement these changes.	Determine high priority teaching skills to be developed, depending on instructional goals.
3. Select a particular administrative or supervisory skill	Select a particular teaching skill to be developed;

*A sample competency contract is included in Appendix A.

Administrators	Teachers
to be developed; set a self-performance goal to be reached.	set a self-performance goal to be reached.
4. Begin a program of training to develop the skill.	Begin a program of training to develop the skill.
5. Collect post training data to determine whether self-performance goal has been reached.	Collect post training data to determine whether self-performance goal has been reached.

As in the case of inquiry projects, administrators and teachers can follow almost identical steps in planning, conducting, and evaluating a program of skill training. For an administrator who selects this route, one criterion of his effectiveness could be the number of teachers on his staff who have successfully completed some needed skill training through use of a competency contract.

Skill Training Materials. The principal who is ready to undertake a training program to develop new skills himself will find some training materials available. The table which follows, indicates some essential skills, training materials, and evaluation instruments. Additional descriptions of the training materials will be found in Appendix B.

Providing Outside Resources. A principal who is not prepared either to model inquiry processes or to demonstrate retraining processes for his staff may still fulfill his adjunctive duty to evaluate and improve instructional competency by providing support to his teachers in the form of outside resources. Outside consultants can be used to identify student entry behavior, desired student terminal behavior, and parameters of teacher behavior which are predictive of student success. Teachers can be observed by trained consultants or

ADMINISTRATIVE AND SUPERVISORY SKILLS	TRAINING PACKAGES	ASSESSMENT MEASURES
1. The supervisor will state behavioral objectives for his own performance as well as the performance of teachers and children.	Developing Effective Instruction (General Programmed Learning, Palo Alto) Behavioral Objectives (Southwest Cooperative Educational Laboratory, Albuquerque)	Evaluation instruments are contained in the training package.
2. The supervisor will record data on teachers' classroom interaction, using an objective observational system.	Interaction Analysis (Far West Laboratory) Systematic and Objective Analysis of Instruction (Northwest Laboratory)	Evaluation instruments are contained in the training package.
3. The supervisor will provide teachers with useful feedback and suggestions on the basis of his observations, in a supportive manner.	Systematic and Objective Analysis of Instruction (Northwest Laboratory)	Evaluation instruments are contained in the training package.
4. The supervisor or administrator will be perceived by his staff as knowledgeable and supportive.	Service provides analysis of responses and suggestions for methods of improving skills.	Administrator Image Questionnaire (Educator Feedback Center, Western Michigan University)
5. The administrator will demonstrate skill in using group decision making to determine instructional goals.	Determining Instructional Purposes (Far West Laboratory, Educational Management Program)	Self-evaluation instruments are included in the training package.

technicians and their goal-directed behavior can be reinforced.

Two examples of effective systems of this type are the Quality Assurance Specialist Program (QAS), developed by the Southwest Cooperative Educational Laboratory in Albuquerque, and the Spaulding Behavior Modification System (Spaulding, 1971). The QAS program is aimed at pupil achievement in learning English as a second language. The Spaulding program is aimed at increasing independent, self-directed behavior of pupils. Both of these systems have been effective in changing teachers' behavior. Both could serve as prototypes for California schools.

In this type of procedure the principal or supervisor is not providing the training or evaluation himself, but he is arranging to have outside consultants work with his teachers to achieve a specific goal of the school. The principal who utilizes this type of support system might be evaluated on the basis of the general improvement shown by the staff in the instructional skills being reinforced.

Certificated Teaching Personnel

The adjunctive duties of teachers pertaining to evaluation of professional performance are basically similar to those of principals and supervisors. We propose that it is the teacher's adjunctive duty to: (1) evaluate and improve his own performance; and (2) assist his colleagues in the evaluation and improvement of their performance.

The processes by which the teacher can evaluate and improve his own performance have already been discussed in illustrating the parallel procedures that could occur when a supervisor models an approach to inquiry or demonstrates an approach to retraining. The effectiveness of inquiry projects has been demonstrated in one study that involved the use of operant conditioning procedures and labeled the process "precision

teaching self-evaluation" (Neale, 1971). Teachers identified their immediate and long-range goals, collected baseline data on their own behavior and on pupil behavior in microteaching situations, planned a strategy to bring about desired changes in pupil behavior, and tested the effectiveness of the strategy in further microteaching situations. They were able to change both their own behavior and the behavior of their pupils.

While the process of inquiry or of competency contracting may be the same for both teachers and principals, the skills that teachers need to learn may differ markedly. Self-instructional training materials available to develop new teaching skills will be discussed later in this paper, in the section on proper control and suitable learning environment.

The process of assisting one's colleagues to evaluate and improve their performance was mentioned in the explanation of inquiry for teachers; it merits some additional discussion here. The Fox and Lippitt study (1964, p. 296) cited earlier stressed the need for innovative teachers to share their problems and discoveries with colleagues. Schmuck reported on alternative intervention strategies designed to help teachers improve informal group processes in the classroom, and noted that an effective procedure was to have pairs and trios of teachers plan and conduct inquiry projects (Schmuck, 1971, pp. 33 ff.). The Teachers College, Columbia University, Preservice Program has made extensive use of peer feedback as student teachers are trained to use a number of different instructional models in classroom interaction with children. The peer feedback is effective in helping student teachers learn to display measurably different patterns of teaching behavior as they play different instructional roles (Joyce et al., 1972).

At least two school districts in California have experimented successfully with dyadic peer relationships for the support of self-improvement programs (Wallace, 1972; S. L. Fox, 1972). One advantage of a support system involving peer

observation and evaluation is that the teacher is less apt to "put on an act" in order to achieve a high rating, and is more apt to learn from the evaluation process. Peer feedback may be less threatening than evaluation by one's employer. As an added bonus, the teacher who is assisting a colleague by observing and providing feedback is also learning himself as he develops new perceptions of the teaching act.

The assessment of a teacher's performance of adjunctive duties could include consideration of the quality and quantity of his own inquiry projects. It should also give some weight to the quality and quantity of his assistance to his colleagues in the conduct of their inquiry projects.

Summary on Adjunctive Duties

The adjunctive duties most closely related to assessment of proper control and learning environment are those which involve evaluation and improvement of one's own professional performance and assistance to one's colleagues in evaluating and improving their professional performance. Three possible organizational procedures for carrying out these adjunctive duties, and consequently for carrying out the assessment of professional performance, have been identified: (1) use of inquiry projects; (2) use of competency contracts; and (3) use of outside consultants. These three procedures can be used separately or in conjunction with each other. Each procedure has been tested in at least one pilot project.

It has been suggested that the role of nonteaching certificated personnel in providing proper control and suitable learning environment be evaluated in part in terms of the quality and quantity of inquiry projects carried out by teachers and the number of teachers successfully completing competency contracts. The assessment of a teacher's performance of adjunctive duties could be evaluated in part by the quality and

and quantity of his own inquiry projects and competency contracts and by the quality of his assistance to his colleagues in their attempts to improve professional performance.

Evaluation of Proper Control and Suitable Learning Environment

We have defined proper control as the teacher's ability to create and maintain a climate in which the intended learning can occur without undue interruption. A suitable learning environment is said to exist when students are interested in coming to class, look forward optimistically to the work involved, and obtain a sense of satisfaction from participating, especially in terms of self-respect and self-confidence. These definitions represent goals that probably cannot be achieved for all students all of the time. Yet working toward these goals as if they can be accomplished is a crucial element of professional teaching. It is our position that standards for assessment of teachers' achievement of these goals should refer to identifiable levels of performance associated with particular teaching skills and should be selected and defined by the teacher whose performance is to be evaluated.

Earlier in this paper, we identified four criteria to be met if assessment of proper control and learning environment, viewed in terms of improvement of instruction, is to be considered valid and feasible. These criteria are agreement between teacher and supervisor on instructional goals; some research evidence linking teacher behavior with control and learning environment; measurement instruments that can be utilized by local school personnel as well as outside consultants; skill-training materials, at least some of which are self-instructional.

Three sources of data for evaluating proper control and

suitable learning environment are teacher planning activities, student attitudes and perceptions, and the verbal interaction of teachers and pupils. Each of these data sources will be considered in light of the above criteria, and appropriate organizational procedures for the assessment of each will be identified.

Planning

On the basis of common sense we expect that classroom control and the learning environment are better when a teacher plans for instruction than when he does not plan. Planning for adaptation of curriculum materials to fit the needs of a particular class and particular children within a class may be taken as evidence that a teacher is attempting to provide proper control and a suitable learning environment. But can it be taken as evidence that a teacher is achieving proper control and a suitable learning environment? We think not.

Criteria for Valid and Feasible Assessment

Let us consider teacher planning activities in terms of the four criteria restated above. The first step in assessment is to reach agreement between a teacher and supervisor on instructional goals. This agreement is likely to be facilitated by the statement of instructional goals in terms of specific pupil behavior (a topic dealt with in another paper at this conference). Thus, one criterion of effective planning is the teacher's ability to specify objectives in behavioral terms. When specific objectives have been agreed upon, teacher performance can be assessed in terms of how well other planning activities contribute to achievement of those objectives.

Research Evidence. We know of no research projects which have the purpose of showing that making plans for instruction (versus not making plans) results in the improvement of desirable learning outcomes. Perhaps such studies do not exist

because the answer seems self-evident. Relevant research with regard to planning does provide some suggestions concerning the particular aspects of teacher planning that might be most closely related to control and learning environment. Berlyne (1960) reports that novelty, complexity, and "surprisingness" all increase the attention of students in the classroom. Other studies indicate that providing a variety of learning activities reduces "satiation" and is conducive to appropriate classroom behavior (Kounin, 1966). Biddle (1967) notes that classroom arrangements in which the teacher occupies center stage and pupils are encapsulated in small areas tend to be settings of some boredom for pupils. These studies suggest the possibility of evaluating the teacher's planning of both the physical arrangement of the classroom and the instructional materials available for use, with variety as an important criterion in both instances.

Planning for variety of instructional materials makes more sense when class formations and plans for the role of the teacher are also taken into consideration. For example, as work begins on a unit of study, the first task is to identify individual learning goals for students. There is a stage of teacher-student planning that calls for an appropriate class formation and particular patterns of teaching behavior. Later on, as work gets under way, another class formation, a shift in the role of the teacher, and the use of a variety of learning materials can be expected. Some suggestions about expected changes in teaching behavior as individual learning goals are clarified in mathematics and social studies classes have been reported by Flanders (1970, p. 327). Joyce and Weil (1972) identify and discuss different teaching models or strategies as appropriate for different instructional objectives. Taba (1966) also proposes particular changes in teaching behavior designed to support and encourage skill in inductive thinking.

We might note, in passing, that changes in instructional

materials do not necessarily ensure complementary changes in patterns of teaching behavior. There is evidence that modern mathematics curricula (Wright, 1967) and the new physics curriculum designed by the Physical Science Study Committee (Moore, 1968) failed to promote more independent patterns of student participation primarily because old patterns of teaching behavior were continued when new patterns were required.

Measurement Instruments and Training Materials. There is no available supply of tested measurement instruments for the assessment of teacher performance in planning for variety of classroom arrangements and instructional materials. There are, however, both assessment instruments and training materials to deal with teacher performance in stating behavioral objectives. (These were noted in an earlier section.) We have been unable to locate any training materials dealing with skills in planning for variety of classroom arrangements and use of instructional materials, though a training format for such materials has been proposed (Morine, 1972). Some books explicating the process of planning for the use of different instructional models are available (Joyce and Weil, 1972; Morine and Morine, 1973), as are self-instructional materials to develop the interactive skills associated with such models (Joyce, Weil, and Wald, 1972).

Skill-training materials related to two other facets of teacher planning have been produced. The Far West Laboratory's "Minicourse on Independent Learning" deals with teacher-pupil planning of independent learning contracts and emphasizes teaching behaviors related to providing for individual differences in academic interests and self-direction, both of which are relevant to control and learning environment. The training package on team teaching developed by the Austin, Texas, Research and Development Center deals with teacher-teacher planning and emphasizes behaviors that may be most closely related to the adjunctive duty of providing support and

assistance to one's colleagues.

Appropriate Assessment Procedures

Given this state of affairs, it seems evident that improvement of some planning skills is an achievable goal but that assessment in terms of normative standards would be indefensible. We recommend that assessment of planning proceed through use of competency contracts. A particular planning skill to be assessed can be identified jointly by teacher and administrator. Base-line data on teacher performance of this skill can be gathered by some objective means mutually agreed upon. Performance criteria that represent skill development in a particular direction can then be specified. Training materials would be made available to the teacher. Final assessment would be based upon attainment of the specified performance level.

Student Attitudes

The point was made earlier that suitable learning environment is essentially a child-centered concept, referring to arrangements which maximize a child's opportunity to exploit a situation for the purpose of learning. It follows that students' attitudes toward the learning environment will be an important indicator of the suitability of that environment for them. Student attitudes toward themselves and toward their peers are apt to be related to their patterns of social behavior, and thus may have an effect on classroom control.

Criteria for Valid and Feasible Assessment

Agreement on attitudinal goals that may be related to control and the learning environment can probably be achieved by most teachers and supervisors. Most educators support such goals as these: the student will value learning, enjoy school, believe in his own ability to achieve, accept responsibility for helping his peers, value and display independence, and be

willing to accept group decisions and obey group rules. Where disagreements frequently occur is in the identification of instructional procedures to implement these goals.

Research Evidence. It is encouraging to note that a large group of studies, altogether more than 20,* showed that when teaching behavior was more responsive, students had more positive attitudes toward the teacher and toward learning, often learned more (as shown by achievement tests), and often showed more desirable patterns of behavior in the classroom.

There are also a few studies relating student attitudes toward themselves and their peers to classroom control and learning environment. Wide sociometric dispersion in a group is related to higher group cohesiveness and stronger group norms supporting educational goals (Schmuck, 1966). Low sociometric status is related to negative self-esteem and hostility toward others (Lippitt and Gold, 1959). Teacher praise is likely to increase the sociometric status of the particular students toward whom it is directed (Flanders and Havumaki, 1960). While the research in these areas is rather meager, it does suggest that sociometric patterns may indicate the existence of problems in the area of control and learning environment. It does not suggest many solutions to such problems or point strongly to a particular direction for teacher improvement.

Measurement Instruments and Training Materials. A variety of instruments is available to measure student perceptions of the teacher, their peers, and themselves. Twenty-three different diagnostic forms for obtaining student perceptions are

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*Flanders, 1965 (four separate studies); Flanders, 1969 (three separate studies); Filson, 1957; Amidon and Flanders, 1961; Schantz, 1963; LaShier, 1965; Johns, 1966; Morrison, 1966; Snider, 1965; Soar, 1966; Birkin, 1967; Emmer, 1967; Furst, 1967; Measel, 1967; Pankratz, 1967; Powell, 1968; Samph, 1968; and Weber, 1968.

discussed by R. S. Fox, Luszki, and Schmuck (1966) in a very interesting little pamphlet called Diagnosing Classroom Learning Environments. The development of microteaching at Stanford University included a student reaction form called the "Stanford Teacher Competence Appraisal Guide" (STCAG) designed to obtain student perceptions of teaching performance. The "Michigan Student Questionnaire" has been used in several studies relating pupil attitudes to teaching behavior, and has demonstrated reliability (Flanders et al., 1969, pp. 169-179). The Educator Feedback Center of Western Michigan University provides a service for teachers that includes distribution and analysis of questionnaires dealing with pupil perception of teacher effectiveness and preparation of a teacher-image profile (see Appendix B for additional information). An instrument designed by Gage collects pupil descriptions of their actual and their ideal teachers and permits the teacher to compare himself with a "pupil-designed" model teacher (Gage et al., 1960).

The reactions of students who cannot respond by using a paper-and-pencil form can be obtained by asking them or by using an observation system that includes nonverbal student observation. Fairly reliable ratings for younger age levels have been reported by Soar (1966) on such matters as "at work/not at work," "interest/boredom," "participating/not participating."

While assessment measures for student attitudes exist, there are no training materials specifically designed to help teachers improve pupil attitudes toward school, toward each other, or toward themselves. Thus assessment of student attitudes will not lead easily into a skill-training program.

Appropriate Assessment Procedures

Assessment of student attitudes can lead to use of inquiry projects. When data on student attitudes have been collected, the teacher can identify alternative patterns of teaching

behavior that might support a change in pupil attitudes, practice these teaching patterns with different groups of pupils, and collect further data from students to determine which pattern was more effective in bringing about the desired change. Final assessment of teaching performance would be based upon the teacher's ability to plan, conduct, and evaluate the inquiry project, as well as the ability to learn new patterns of behavior and to bring about some change in pupil behavior. Possible designs for inquiry projects are discussed in the next section.

Interactive Behavior

The interactive events that occur between a teacher and his students, as well as those that occur among students, create a major part of the learning environment and also reveal patterns of classroom control. In fact, as students "interact" with instructional materials, which are inanimate objects, the adaptation of these materials for purposes of learning--the "humanizing" of these materials, so to speak--is created by what teachers and students say to each other and how they coordinate their actions. It follows that an analysis of interactive behavior should give us considerable insight into the qualities of the learning environment and the processes of control. This kind of evaluation can be based on many different systems of interaction analysis. Perhaps the first analysis of this kind was made in 1912 by Stevens (1970), who studied teacher questions from written transcripts recorded in stenographic shorthand. An extensive inventory of the observation procedures now available can be found in Simon and Boyer's Mirrors for Behavior (1970), in which more than 80 systems for encoding interactive events are reported.

One general conclusion from all of the research which uses some form of interaction analysis is that, when experienced teachers or college students take the time to analyze their own

patterns of verbal interaction, they are likely to change these patterns. Many different changes have been reported, but among those which occur most frequently are less teacher talk, more responsive teacher talk (e.g., reacting to ideas students express), and less teacher initiation (e.g., lecturing, giving directions, and criticizing students). This generalization is supported, to one degree or another, by no less than 13 different research projects.* One possible reason for these consistent results is that interaction analysis, with proper feedback, helps a teacher compare what actually happened during classroom interaction with what he wanted to have happen. When a teacher analyzes his own chain of interactive events, he is more likely to discover appropriate opportunities to react to students, and this increases the average incidence of responsive acts. Additional explanation has been proposed by Wagner (1971), whose study suggests that practice in discriminating among responsive acts may be more important than practice in performing these acts.

As noted earlier, there is also a large group of studies linking responsive teaching behavior to positive student attitudes, higher pupil achievement, and more desirable patterns of classroom behavior. Of course, reservations and exceptions have been made to these two rather sweeping generalizations. For example, it has been remarked that not all teachers can benefit equally from the study of their own interactions (Zahn, 1965, p. 297), cause and effect are not yet clearly established (Flanders, 1970, p. 426), the relationships may actually be curvilinear, which means a teacher can become too responsive

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*At the preservice level, Lohman, Ober, and Hough, 1967; Moskowitz, 1967; Kirk, 1963; Furst, 1967a; Finske, 1967; Bondi, 1969. At the inservice level, Flanders, 1963; Emmer, 1967; Hill, 1966; Jeffs, 1968; and Soar, 1966. Others have reported similar findings since this survey was made, for example Borg et al. (1970).

(Soar, 1966), and not all classes, subject matter, age levels, and ways to quantify variables are properly represented in the research reported (Rosenshine and Furst, 1971, pp. 37 ff.). However, the line of research is still impressive and deserves attention in terms of implementing the Stull Act.

Criteria and Inquiry Design

The problem of evaluation is to obtain information based on fairly objective criteria and then to use this information to make intelligent comparisons that, in turn, lead to valid conclusions. In research we say that variables should be carefully quantified and the data should be analyzed within a logical research design. Evaluation under the terms of the Stull Act may only approach the quality of carefully conceived research, yet the need for attention to the principles of good research is inescapable.

Criteria for Interactive Events. The criteria of evaluation when some system of interaction analysis is used will depend on the nature of the category system. In the Flanders ten-category system (1970, p. 197), the criteria can include ratios of different verbal statements made by the teacher (e.g., the i/i + d ratio); direct percentages of teacher talk, student talk, or silence/confusion; or subdivisions of the main categories. Other systems such as Parson's (1970) "Guided Self-Analysis" and Morine's (Morine, Spaulding,and Greenberg, 1971) discriminate different kinds of questions and different ways that a teacher can respond to student statements. The Coping Analysis Schedule for Educational Settings (CASES) and the Spaulding Teacher Activity Rating Schedule (STARS) by Spaulding (1971) discriminate types of pupil behavior and teacher use of positive or negative reinforcement.

Coding and analysis of total classroom interaction require extensive time and training. It is possible for evaluation to focus on one or two aspects of interaction and for coding to be limited to particular types of behavior. It is

our recommendation that initial assessment of verbal interaction skills focus on teacher questions and directions, which occur just before pupils participate, and teacher responsive behaviors, which occur just after pupils participate (Flanders, 1972). Such assessment will require the following procedures:

1. A trained observer will encode interaction analysis data by visiting live classroom settings or will have access to an intelligible voice and/or video magnetic recording.

2. The encoded data will be tabulated or placed in a display which permits questions, directions, responsive statements, and criticism to be identified, along with various kinds of student statements. Additional ratings of the situation and data from student inventories can also be utilized.

3. Fairly simple ratios or summary percentages can be calculated in order to provide scores for subsequent comparisons.

The trick, if we can call it that, is to avoid superficial, unreliable indices which have questionable value and to focus instead on features of the interactive events which are more likely to have pervasive consequences for the learning environment. For example, counting particular kinds of words (such as an "I/Thou" ratio) may seem to be related to Martin Buber's observations and philosophy about personal relationships, but we do not have convincing evidence that such word counts are related to educational outcomes, either desirable or undesirable. On the other hand, the proportion of responsive teacher statements to all teacher statements (the I/I + d ratio) has been shown to be associated with positive student attitudes.

Inquiry Designs. Considerable attention should be given to the situations in which interaction analysis data are collected. The main problem is to choose an inquiry design which permits logical comparisons that are consistent with the purpose of the evaluation.

Early in this paper, one-time evaluations for the purpose

of rating the quality of teaching were rejected. One reason for this recommendation is that a single visit is not likely to be representative of what normally occurs in a classroom. To secure more representative data may require at least six one-hour visits, well spaced (Flanders, 1970, p. 100) in order to collect reliable data. Samph (1968) has shown that the presence of an observer does influence interaction. The use of "standardized" lessons shows some promise of producing more reliable data (Finske, 1967), but more research will be necessary to demonstrate that such lessons represent average interaction. Most of us who conduct research using interaction analysis have discovered that it is not difficult for a teacher to put on an act which cannot be detected by most interaction analysis procedures. The final blow to one-time evaluation is that we simply do not have enough normative data to evaluate a teacher's performance in comparison with reasonably similar populations. Comparisons over time for the same teacher and the same class may be the best type of design for the diagnostic evaluation of the learning environment and the control processes.

One design could involve comparing interaction data with a model. A profile of interaction analysis data can be used to represent a particular model of teaching, such as a model of inquiry teaching. Examples of such a model can be found in Morine et al. (1971). A teacher can practice using this model and, on successive occasions, can compare his profile based on a specimen of interaction with the model display itself. Thus he can determine when his teaching matches the model. The primary purpose of this design is the improvement of instruction, rather than some kind of rating.

A second design would require a colleague or older student who is a trained observer to visit the class and obtain a general profile of interactive events at a first point in time. The teacher who was observed may identify some feature of this

profile that he would like to change. He can then practice making these changes in microteaching or short lesson sessions. He would finally invite his colleague-observer back for a second observation. A comparison of the data collected at two different points in time can often lead to useful insights. Again, this design is directed primarily toward the improvement of instruction.

The five-step inquiry model for teachers outlined earlier in this paper is perhaps the most advanced level of inquiry in which one's own behavior is the object of study. It is more advanced because, in Step Two, the teacher proposes his own model. These five steps are discussed in considerable detail, including proposed systems for displaying the interaction data, in Analyzing Teaching Behavior (Flanders, 1970, Chapter 9).

Combining Interaction Analysis with Other Data-Collection Procedures

The generalization that teachers tend to change interaction patterns when they study and analyze their own verbal statements is most easily explained by considering "feedback" and the effects of feedback on a behavior system. More adequate feedback to teachers is likely to occur if more adequate information is obtained. One way in which this can be accomplished is to help teachers develop the skills necessary to collect other kinds of information as well as information about interaction.

Two kinds of data, interaction data and student perception data, are essential to adapting teaching methods to one's own class. The interaction data permit a teacher to determine the extent to which his interaction matched his intentions. The data on student perceptions help to associate student reactions with the patterns of instruction. The combination permits inferences about how well a given strategy works for a particular class.

Regular Feedback. Incidental feedback to the teacher

goes on constantly. Systematic feedback occurs less frequently. Change is more likely to result from the latter because it is planned.

An effective, easy way to obtain feedback from students as part of an inquiry project is to ask them for their opinions. It may be both more tactful and more effective to divide the class into groups of four or five students, ask them to form opinions about some phase of instruction, and then have a "summarizer" report for the subgroup, not naming individual students. After opinions are rewritten to reflect the various subgroup discussions, a show of hands to indicate the amount of agreement and the strength of conviction helps to quantify class opinion.

Short forms for written or scaled student reaction which take only a few minutes to fill out can be created by most teachers. Many examples are shown by Fox, Luszki, and Schmuck (1966).

Feedback on interactive behavior is not quite so readily obtained. Time, space, incentive, and resources are necessary to learn to encode and decode classroom interaction. This kind of activity is not easily accomplished if it is an extra burden added to the load of an already busy teacher or supervisor.

One deterrent to learning how to use interaction analysis systems may be exaggerated demands for reliability of observations. The authors of this paper have worked with teachers as they learn some form of interaction analysis. We have found that the standards of reliability required for research projects need not necessarily be reached in order to benefit instruction. When two teachers disagree on how to code an event and they discuss their differences, it probably helps them to improve their discrimination.

Other factors will affect the success of training attempts. At the Far West Laboratory we have some unpublished

information from our field tests to indicate that teachers who work alone are less likely to complete training in interaction analysis than are teachers who work with one or more partners. The Northwest Regional Laboratory's materials (see Item D, p. 217, Appendix B) are purposely designed to fit the format of a weekend workshop for a reasonably sized group of teachers. If such a workshop is not feasible, self-instructional training packages should probably be used by several teachers in the same school for maximum effectiveness. There are quite a few training materials for learning some form of interaction analysis. Descriptions of these can be found in Appendix B.

Skill Training

Any assessment of teacher performance that is aimed at improvement of instruction will eventually lead to the identification of new teaching skills that should be acquired. Not all teachers will be ready to conduct inquiry projects or write competency contracts. For many the route to improvement of instructional skills will be the use of training packages that identify skills to be learned, provide carefully designed materials to assist the teacher in skill acquisition, and include assessment measures to determine the extent of learning that has occurred.

It is probable that many teachers will need training in stating behavioral objectives before they can write competency contracts. Training in coding interactive behaviors will be essential for many teachers before they can begin inquiry projects. Some teachers will move rapidly from skill-training projects to more complex assessment procedures. Others will remain at the level of skill training for longer periods of time.

One of the more powerful approaches to the improvement of interactive teaching skills is the development of "minicourses."

These are products of the Far West Laboratory for Research and Development (Borg, W. R. et al., 1970). Minicourses combine the techniques of microteaching with Bandura and Kupers' (1963) work on providing models of behavior. A minicourse provides a coordinator's manual, a teacher's manual, and color films or video recordings to demonstrate particular teaching skills, all organized around a series of lessons. Individualized training is possible for a single teacher or a group of teachers. Each minicourse is the product of an extensive sequence of product development and evaluation. Evidence of product effectiveness can be secured from the Far West Laboratory.

Other regional laboratories and university centers are currently developing and testing instructional materials designed to improve particular teaching skills. Reference to these materials can be found in this chapter and also in Appendix B. The advantage of most of these products is that they are designed to assist those teachers who do not care to design their own self-development programs. The procedures of interaction analysis, discussed in the previous section, require considerable teacher initiative and often call for the ability to invent a model of teaching (e.g., "What pattern of teaching behavior will support the desired pupil behavior?"). The self-contained minicourses and the instructional materials from laboratories and centers have the advantages that skills are usually specified in advance and that the materials specify a series of steps that will permit a trainee to improve his skill providing he follows the sequences of instruction.

Space does not permit an exhaustive list of the possible skill training tools that could contribute to the improvement of classroom control and learning environment. We include below a sampling of skills and training materials to indicate something of the range of possibilities that exists. (More detailed information is included in Appendix B.)

Teaching Skills	Training Packages
1. The teacher will state performance objectives for the instruction of his pupils.	Developing Effective Instruction (General Programmed Learning) Behavioral Objectives (Southwestern Cooperative Educational Laboratory)
2. The teacher will record data on his own classroom interaction using an objective observational system.	Interaction Analysis (Far West Laboratory) Interaction Analysis (Northwest Regional Laboratory)
3. The teacher will interact with pupils in ways that encourage high-level thinking skills.	Facilitating Inquiry in the Classroom (Northwest Regional Laboratory) Effective Questioning: Elementary Level (Minicourse 1, Far West Laboratory) Higher Cognitive Questioning (Minicourse 9, Far West Laboratory)
4. The teacher will organize the classroom for individualized instruction.	Organizing for Independent Learning (Minicourse 8, Far West Laboratory) Individualizing Instruction in Mathematics (Minicourse 5, Far West Laboratory) Teaching in IPI Mathematics (Research for Better Schools)
5. The teacher will increase the students' interest in learning.	Teaching Achievement Motivation (Education Ventures)
6. The teacher will expand the language and thought of young children.	Developing Childrens' Oral Language (Minicourse 2, Far West Laboratory)

Summary on Proper Control and Suitable Learning Environment

Assessment of proper control and suitable learning environment can proceed through collection of data related to teacher planning, student attitudes, and interactive behavior of teachers and pupils. The use of such data for improvement of instruction can provide valid and feasible assessment procedures. Directed skill training, competency contracts, and inquiry projects are all appropriate means of assessment and improvement at this stage in our development of techniques for evaluation of teacher effectiveness. Inquiry projects can involve comparisons of behavior with a model, comparisons of behavior with stated behavioral objectives, and comparisons of behavior over time. Peer cooperation in collection of interactive data is apt to contribute to development of skills in coding interactive behavior and therefore to lead to greater behavior change.

A Beginning

The educational community of California has been issued an ultimatum to evaluate the performance of certificated personnel throughout the state. We do not have the necessary knowledge base or the required measurement techniques and tools to respond to this ultimatum by instituting a system of rigid evaluative criteria for purposes of retention or merit pay. We do have the opportunity to respond by instituting systems of assessment that can contribute to the improvement of instruction.

Improvement of the educational process is a goal to which we all aspire. Perhaps we wish that we had not been placed under such immediate pressures to achieve this goal as the Stull Act seems to exert. But if we marshal our resources,

we can make an important initial attack on the problems of accountability, effective teaching, and improvement of instruction.

There are those who will view the Stull Act as an obstruction or a dead end. We can make it a beginning.

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Appendix A

SAMPLE INQUIRY PROJECT PLAN AND COMPETENCY CONTRACT

Sample Plan for an Inquiry Project

Teacher's Name: Mary T.

School: Samuel P. Zellerbach Elementary School

The desired patterns of pupil behavior are:

pupils will listen to each other's ideas

The acceptable evidence that such patterns have been achieved will be:

pupils independently summarize, explain, or ask for clarification of the ideas expressed by others in the group

Two different patterns of teaching behavior that might support the desired pupil behaviors are:

1. I will "model" the desired pupil behavior by summarizing, expanding on pupil ideas, or asking for clarification, with the expectation that pupils will begin to imitate this behavior.
2. I will ask pupils to summarize, explain, or ask questions about each other's ideas, with the expectation that after some practice they will respond in these ways without being asked.

The colleague who will work with the teacher on this project is: Jane M.

The method of observation will be: (Circle one)

"live" classroom visit listening to audio tapes watching video tapes

The colleague will observe at least two practice lessons and will collect the following information:

Pattern I. a tally of the number of times I:

A. summarize a pupil's idea

B. expand on a pupil's idea

C. ask for clarification of a pupil's idea

Pattern II. a tally of the number of times I:

A. ask a pupil to summarize another pupil's idea

B. expand on a pupil's idea

C. ask pupils if they have any questions about a pupil's idea

The teacher will teach eight classroom lessons to two different groups using these patterns, and the colleague will observe four (2+2) classroom lessons and collect the following information:

same as above, plus a tally of the times that pupils independently:

A. summarize another pupil's idea

B. explain another pupil's idea

C. ask for clarification of another pupil's idea

The more effective teaching pattern will be identified by: deciding which pattern of teaching behavior results in more of the desired pupil behavior in the last set of classroom lessons observed.

Sample Competency Contract

Name: Mr. X

School: ABC Secondary School

Analysis of segments of classroom interaction shows:

A predominance of narrow questions, teacher direction, and teacher lecturing; very little pupil initiation

Related instructional goals are:

Pupils will develop skills in independent thinking

High priority skills to be developed are:

Asking higher order questions

Encouraging pupil planning and self-direction

Particular skill to be worked on now is:

Asking higher order questions

Available training materials are:

Book - Classroom Questions: What Kinds? by Norris Sanders

Workshop - Development of Higher Level Thinking Abilities, Northwest Regional Laboratory

Minicourse - Higher Cognitive Questioning, Far West Laboratory

Training material to be used:

Minicourse 9, Higher Cognitive Questioning

Performance goal to be reached:

Given training in Minicourse 9, Mr. X will increase use of higher order questions, so that analysis of a post-training segment of classroom interaction will show that over 50% of the questions asked are higher order questions, and that pupil answers are generally longer than teacher questions.

Expected time length:

Six weeks.

_____ _____

(Principal's Signature) (Teacher's Signature)

Appendix B

AVAILABLE TRAINING MATERIALS*

1. Stating Behavioral Objectives

   A. Title: Behavioral Objectives Package

   Author or Developer: Southwestern Cooperative Educational Laboratory

   Source: SWCEL
   117 Richmond Drive NE
   Albuquerque, New Mexico 87106

   Cost: $132

   Materials: Slide-tapes; manual

   Description:

   The Behavioral Objectives Package contains slide-tape presentations and a workbook. Six lessons outline goals and objectives; the instructional program; the three domains (cognitive, affective, and psychomotor); entering behaviors; components of a behavioral objective; and how to write behavioral objectives. A pre- and posttest are included. Training in use of the package will be provided by the Southwest Cooperative Educational Laboratory.

   B. Title: Developing Effective Instruction

   Author or Developer: General Programmed Teaching

   Source: General Programmed Teaching
   P.O. Box 402, 424 University Avenue
   Palo Alto, California 94302

   Cost: Complete workshop (15 units) approx. $650.00
   Student workbooks (each) 5.95

   (first five units may be purchased separately at $55.00 per unit)

   Materials: Audio-tape; filmstrip; workbook; monitor's manual

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*Most of the information here is reprinted from B. Joyce, M. Weil, G. Morine, and R. Wald, Materials for Modules: A Classification of Competency-Oriented Tools for Teacher Evaluation (New York: Teachers College, Columbia University, 1971).

Description:

Entirely self-instructional course designed to teach principles and procedures for developing performance-based learning and instruction. Fifteen units deal with the following areas: basic principles of performance-based learning; general goals, affective objectives and cognitive objectives; main components of an objective; classification of objectives (verbal, discrimination, motor performance); criterion tests; determining entry level; entry level; tests; stimulus and response; one-way and two-way stimulus-response pairs; single and multiple discriminations; content analysis; stimulus-response pairs in chain activities; developing objectives and deriving content; programmed lesson plans and instructional media; validation.

The units assist the teacher in developing performance-based instruction on several levels: planning units and lessons; carrying out student contracts; creating programmed materials.

C. Title: Instructional Design: A Self-Directed Learning Program

Author or Developer: David P. Butts

Source: Research and Development Center for Teacher Education
University of Texas
Austin, Texas

Cost: Consult Source

Materials: Manual

Description:

The self-directed learning guide is designed as training in the skills for designing and planning instruction. It consists of 22 tasks organized around a single design or planning skill. For each task there is a pretest, a task activity, and a posttest. The task activity items require both multiple-choice and open-ended written responses. Most of the task activities are short and the entire sequence could be completed in about three to four hours. The task areas include behavioral objectives, task analysis, appraisal and assessment, matching instruction and materials to objectives, managing space and time, constructing instructional plans and initiating instruction.

D. Title: Vimcet Filmstrip - Tape Programs

Author or Developer: Vimcet Associates

Source: Vimcet Associates
P.O. Box 24714
Los Angeles, California 90024

Cost: $15.00 per program, filmstrip, and tape.
$ 2.00 per guide

Materials: Eighteen audio-tapes; filmstrips; instructor's manuals; utilization guide; related materials.
Supplementary texts: James Popham and Eva Baker, Establishing Instructional Goals: Planning an Instructional Sequence; Systematic Instruction. Englewood Cliffs, N.J.: Prentice-Hall, 1970.

Description:

This series consists of 18 filmstrip-tape programs concerned primarily, but not exclusively, with instructional design and planning skills. The titles of the programs are: Educational Objectives; Systematic Instructional Decision-Making; Selecting Appropriate Educational Objectives; Establishing Performance Standards; Appropriate Practice; Perceived Purpose (Motivation); Evaluation: A Curriculum Rationale (Tyler Model); Defining Content for Objectives; Affective Objectives; Analyzing Learner Outcomes; Knowledge of Results; Teaching Units and Lesson Plans; The Teaching of Reading; Discipline in a Classroom; Modern Measurement Methods; Instructional Supervision; A Criterion-Referenced Strategy; and Experimental Designs for School Research. The 18 programs fall into three general categories--instructional objectives, instructional sequences, and evaluation.

II. Analysis of Classroom Interaction

A. Title: Classroom Behavior Analysis and Treatment

Developer: Robert L. Spaulding

Source: Dr. Robert L. Spaulding
Director, Child Development Institute
San Jose State University
San Jose, California 95114

Cost: $3.50 plus postage

Materials: Book

Description:

This book reports on a comprehensive system for

measuring transactional behavior of children and teachers in classroom settings. It can help teachers to apply information about behavior modification techniques by providing them with a means of assessing behavioral styles and behavioral changes. Chapter titles include: The Coping Analysis Schedule for Educational Settings (CASES); The Spaulding Teacher Activity Rating Schedule (STARS); Using CASES and STARS Together to Measure Transaction; Using CASES or STARS in Teacher Training; Using CASES Categories to Measure Change toward Behavioral Objectives; Designing a School Management System to Permit Treatment Schedules by CASES Style; Data Gathering Procedures Using CASES and STARS.

B. Title: Discovering New Dimensions in the Teaching Process

Author or Developer: Greta Morine, Robert Spaulding, and Selma Greenberg

Source: College Division
Intext Educational Publishers
Scranton, Pennsylvania 18515

Cost: $3.95

Materials: Textbook

Description:

This book is designed to help teachers analyze and evaluate their verbal interaction with students in terms of its relationship to their instructional objectives. It focuses on how certain techniques, such as presenting information, asking questions, and reacting to student responses, might vary according to different instructional roles, such as "intellectual authority" or "intellectual guide." Practice exercises are based on transcripts of actual dialogue from both secondary and elementary school classrooms. Immediate feedback (correct answers) follows each practice exercise. Chapter titles include: Categorizing Teaching Activities; Recording Teaching Activities; Analyzing Recorded Behavior; Patterns of Interaction; Evaluating Teaching Behavior; Categorizing Teacher Questions; Teacher Roles and Teaching Behavior.

C. Title: Guided Self-Analysis: Teaching for Inquiry

Author or Developer: Theodore Parsons

Source: Guided Self-Analysis Professional Development Systems

2140 Shattuck
Berkeley, California 94704

Cost: $50.00 for set of six manuals

Materials: Written materials; audio- or videotape lessons and facilities are required but not provided by the program

Description:

The program aims to improve instructional competence by having the teacher learn a series of focused interaction codes, a system for computing profiles for each code, and guidelines for interpreting the profiles. He then codes, computes, and analyzes his own teaching. The program has six sequential coding schedules. Each schedule focuses on a specific type of teaching behavior, e.g., teacher question, teacher responses, type of teacher talk, etc. However, the schedules are interrelated and the interpretation of teaching style and classroom interaction is based upon the relationships among the codes.

The six schedules (focused codes) are: Schedule A, Questioning Strategies, classified according to the type of thinking required of the pupils; Schedule B, Response Patterns, classified according to whether they promote or inhibit further pupil thinking; Schedule C, Teacher Talk Patterns, a breakdown of the time spent in questions and responses, instruction, classroom management, etc.; Schedule D, Teacher-Pupil Talk Patterns; Schedule E, Experience Referents--analyzes extent to which teachers' questions relate to pupil experiences; and Schedule F, Levels of Thinking--analyzes congruence between level of thinking required by teacher questions and level represented by pupil responses.

D. Title: Interaction Analysis

Author or Developer: John H. Hansen and Robert A. Anderson

Source: Northwest Regional Educational Laboratory
Communications and Disseminations
710 S.W. Second Avenue
500 Lindsay Building
Portland, Oregon 97204

Special Ordering Instructions:

Trainer's manual includes copies of student

materials and transparencies, which can be duplicated locally. A training tape and training film are obtainable from:

Teacher Inservice Programs and Services
P.O. Box 465
Eugene, Oregon 97401

A filmstrip with audiotape is obtainable from:

University of Minnesota
Audio-Visual Center
Minneapolis, Minnesota

A textbook (Interaction Analysis: Theory, Research, and Application, by Amidon and Hough) is obtainable from:

Addison-Wesley
Reading, Massachusetts

Cost:		
Trainer's Manual	$ 4.00	
Training Tape	12.00	
Training Film	5.00	rental, or
	225.00	purchase
Filmstrip with audiotape	20.00	
Textbook (paperback)	4.50	

Materials: Printed materials include a trainer's manual, a textbook, and handout materials; a training tape, film, and filmstrip with audiotape are necessary supplements to these materials.

Description:

This course in interaction analysis is designed as a 40-hour workshop in use of the Flanders-Amidon matrix. It deals with category definitions, tallying in the matrix, analysis of the matrix, categorical teaching, effect of categories.

E. Title: Minicourse on Interaction Analysis

Author or Developer: Far West Laboratory for Educational Research and Development
1855 Folsom Street
San Francisco, California 94103
(415) 565-3016
Attn: Mrs. R. A. Elder, Ext. 74

Source: Not yet decided; scheduled for January 1973

Cost: Not yet determined, but less than $40.00

Materials: Teacher's manual, answer book; supervisor's manual; six cassette, magnetic voice recordings; orientation package

Objectives:

1. Trainees will learn to encode and decode with Flanders I.A. categories including time-line displays.
2. Trainee will practice analyzing his balance of teacher initiation and response.
3. Trainee will practice producing "because extensions."
4. Trainee will practice accepting and using student ideas and feelings.
5. Trainee will design and conduct a self-inquiry project.

Teachers can work singly or in groups. Two or more persons are recommended.

Availability: The operational field test edition (not final) is available by writing to the Far West Laboratory.

F. Title: Learning Interaction Analysis: A Programmed Approach

Author or Developer: Miles C. Olson

Source: Educational Consulting Association, Inc.
3311 South Broadway, Suite 304
Englewood, Colorado 80110

Cost: $4.95 each (includes book and records)

Materials: A 45-page booklet; two 33-1/3 RPM records

Description:

A compact, entirely self-instructional programmed course designed to introduce students to the concept of interaction analysis and develop their knowledge and coding proficiency using the Flanders Category system. The booklet is divided into four parts: (1) material describing interaction analysis and the Flanders Category system; (2) questions and exercises to learn and practice the category system; (3) material and exercises on completing a matrix; and (4) information on how to interpret the matrix.

The material is carefully sequenced to develop

first the student's knowledge of the category system and then his coding skills for both the category and the unit of analysis (time).

G. Title: Systematic and Objective Analysis of Instruction

Author or Developer: James R. Hale and R. Allan Spanjer

Source: Northwest Regional Educational Laboratory
710 S.W. Second Avenue
500 Lindsay Building
Portland, Oregon 97204

Cost: Information not available

Materials: Printed trainer's manual; printed participant materials; audiotape, videotape, or film of classroom teaching episodes to be furnished by user of this program

Description:

This program is designed as a four-week workshop. It has two major phases. The first deals with developing effective interpersonal communication skills. Topics include: group processes, communication skills, constructive use of feelings, interpersonal effect of various responses, processes of interpersonal influence. The second phase deals with developing effective supervision skills. Topics include: a model for systematically improving instruction, systematic analysis of teaching performance, strategy and the conference, problems and issues in improving instruction and supervision.

H. Title: Systematic Observation of Teaching

Author or Developer: Richard L. Ober, Ernest L. Bentley, and Edith Miller

Source: Prentice-Hall, Inc.
Englewood Cliffs, New Jersey

Description:

This book trains teachers to use the Flanders Interaction Analysis system to observe and control their own behavior. It is replete with examples of classroom interaction.

I. Title: The Role of the Teacher in the Classroom

Author or Developer: E. J. Amidon and N. A. Flanders

Source: Paul S. Amidon and Associates
5408 Chicago Avenue South
Minneapolis, Minnesota 55417

Cost: $1.50 (approx.) per copy

Description:

This is a manual written especially for classroom teachers. It introduces the notion of investigating verbal communication as an approach to the improvement of classroom instruction. Methods of interpreting a matrix are explained.

A variety of supportive instructional aids can be obtained from the publisher. These include voice tape recordings with a transcript for practicing coding with the basic 10-category system, videotapes for the same purpose, and programmed materials which introduce increasingly complex teaching skills. A complete inventory of materials can be secured from the publisher. Consultant services can also be arranged in the design and conduct of workshops for the inservice training of teachers or administrators.

III. Attitude Inventories

A. Title: Diagnosing Classroom Learning Environment

Author or Developer: Robert Fox, Margaret B. Luszki, and Richard Schmuck

Source: Science Research Associates, Inc.
259 East Erie Street
Chicago, Illinois 60611

Cost: Contact source

Description:

This pamphlet contains 23 diagnostic tools to assess classroom learning climate, social relations, pupil norms, pupil-teacher interaction, pupil self-concept, and parental influences on school adjustment. It also contains suggestions on organizing the data so that the teacher can focus his efforts to change the classroom learning environment.

B. Title: Educator Image Questionnaires

Author or Developer: Educator Feedback Center

Source: Educator Feedback Center
School of Education
Western Michigan University
Kalamazoo, Michigan

Cost: $10

Description:

This organization will send questionnaires for distribution to teachers or pupils, will collect and analyze the responses, and will prepare a confidential profile for the principal or teacher of perceived strengths and weaknesses, complete with suggestions for strategies to improve leadership or teaching effectiveness. A follow-up questionnaire can be used at a later time and the principal or teacher can receive a new profile showing comparative pretest and posttest responses.

C. Minnesota Student Attitude Inventory (grade 7 and up)
Michigan Pupil Attitude Inventory (grades 3-8)

Author or Developer: Ned A. Flanders
Far West Laboratory for Educational Research and Development
1855 Folsom Street
San Francisco, California 94103
(415) 565-3016

Source: Copies available from author

Cost: No cost, user duplicates own copies

Materials: One test booklet; one answer sheet for each test

Objectives:

1. The class average score on these inventories is associated with classroom interaction variables when used for between-classroom comparisons in a sample of similar classes.
2. Test results can be used to compare the same class over time.

IV. Teaching Strategies - Cognitive Orientation

A. Title: Classroom Questions: What Kinds?

Author or Developer: Norris M. Sanders

Source: Harper and Row
49 East 33rd Street
New York, New York 10016

Cost: Consult source

Description:

This book identifies seven cognitive levels of

questions based on Bloom's taxonomy and provides exercises in developing questions at various levels for use in the classroom.

B. Title: Development of Higher Level Thinking Abilities

Author or Developer: John A. McCollum and Rose Marie David

Source: Northwest Regional Educational Laboratory
710 S.W. Second Avenue
500 Lindsay Building
Portland, Oregon 97204

Cost: Information not available

Materials: Printed leader's guide; printed participant materials (can be duplicated locally); 30-minute demonstration film; 5 audiotapes; 1 slide tape

Description:

This is a 40-hour course based on Hilda Taba's work on teaching strategies which increase children's skills in categorizing, generalizing, and applying generalizations. This course can be presented as a workshop, extension course, or methods course. The major topics dealt with are: rationale for change, rationale for curriculum development, question strategies and discussion skills, concept diagnosis, interpretation of data, application of knowledge.

C. Title: Facilitating Inquiry in the Classroom

Author or Developer: Fred E. Newton
Northwest Regional Educational Laboratory

Source: Copy-Print Centers
1208 S.W. Jefferson Street
Portland, Oregon 97201
(Leader's guide and participant materials)

Special Ordering Instructions:

Confrontation tapes (audio) can be obtained from:

Rex Recording Studios
931 S.W. King Street
Portland, Oregon 97205

Demonstration equipment for inquiry exercises (pulse glass and bimetallic strip) can be

obtained from:

School Teaching Aids and Supplies
1225 Eighth Street
Berkeley, California 94710

Cost:

Leader's guide	$14.00
Participants' materials	2.50 each
Confrontation tapes	12.27 set of 4
Demonstration equipment:	
Pulse glass	3.00 each
Strip	12.00 each

Materials: Printed materials include the leader's guide and participant materials; four audiotapes and several items of demonstration equipment are necessary support materials.

Description:

This course in facilitating inquiry is based upon Richard Suchman's inquiry training technique. It is designed as a 40- to 45-hour workshop. The leader is provided with detailed instructions in the leader's guide, and need not be specially trained for this role. The sessions (or subsets) include such titles as: Experiencing Inquiry as an Inquirer; Identifying Possible Risks and Advantages; Allowing Inquiry to Happen; Inquirer Behavior; Practicing Allowing Inquiry Moves; Evaluating Teamwork Relationships; Developing Problem Focuses; Facilitating Growth Moves; Using Tuning-In Moves; Assessing Practice Tapes.

D. Title: Minicourse 1: Effective Questioning: Elementary Level

Author or Developer: Far West Laboratory for Educational Research and Development

Source: Macmillan Educational Services, Inc.
Front and Brown Streets
Riverside, New Jersey 08075

Cost: $1,435 purchase; $210 six-week rental

Materials: Written materials (teacher and coordinator handbooks); filmed materials

Description:

Teachers who take this course learn to increase the effectiveness of discussion and questioning skills by increasing pupils' readiness to respond, decreasing

the amount of teacher talk, probing, prompting, and maintaining a flow of discussion.

E. Title: Minicourse 2: Developing Children's Oral Language

Author or Developer: Far West Laboratory for Educational Research and Development

Source: Macmillan Educational Services
Front and Brown Streets
Riverside, New Jersey 08075

Cost: $1,320 purchase; $195 six-week rental

Materials: Written materials (teacher and coordinator manuals); filmed lessons

Description:

In this course for all who work with K-4 children, adults learn teaching skills that expand the language and thought of the child: expanding a phrase to a sentence, modeling new language patterns, modeling positional words in context with objects, modeling action words, etc.

F. Title: Minicourse 9: Higher Cognitive Questioning

Author or Developer: Far West Laboratory for Educational Research and Development

Source: Macmillan Educational Services, Inc.
Front and Brown Streets
Riverside, New Jersey 08075

Cost: $1,080 purchase; $165 six-week rental

Materials: Written materials (teacher and coordinator manuals); filmed lessons

Description:

Most questions asked by teachers require students simply to regurgitate facts. This minicourse helps teachers in intermediate and junior high grades to develop skills in asking questions that lead students to make inferences and judgments, to solve problems, and to make predictions.

G. Title: 1. The Basic Course: Teaching Is Learning to Listen

2. Activities in Metaphor

Author or Developer: W. J. J. Gordon and T. Poze

Source: Synectics Education Systems
121 Brattle Street
Cambridge, Massachusetts 02138

Costs: $50.00

Materials: Two paperback books

Description:

The two books can be used independently or in conjunction with one another. The major emphasis in both books is the development of the teacher's ability to use metaphoric activity in application with learners. The materials are designed to be self-instructional.

1. "The Basic Course: Teaching is Learning to Listen" is described as a programmed teacher training course. The objective of the course is the development of teaching skill for the utilization of metaphoric activity for creativity and problem solving. The teacher "learning to listen" refers to the acceptance of learners' feelings and ideas, an attitude of caring about the learner, and the ability to understand the thinking processes and kinds of connections necessary for metaphoric activity. There is a short introduction to synectics theory followed by practice exercises and problem-solving units for teachers and learners.

2. "Activities in Metaphor" is a compilation of activities for students based on metaphoric activity developed in the basic course. These activities are game-like and are developed in step-by-step detail. All of the activities are developed in terms of goals and processes. Examples of activities and their labels are: Answer Sharing, Metaphorically Based Twenty Questions, Matching Pictures, Helen Keller, Charades Based on an Analogy, The Fly's Eye, and The Way It Might Have Happened. Some of the activities lead to others: for example, the charades game may lead to theater exercises, improvisation, and dramatic production. Many of the activities are connected to specific content areas such as art, music, science and mathematics.

H. Title: Three Teaching Strategies for the Social Studies

Author or Developer: Bruce Joyce, Marsha Weil, and Rhoada Wald

Source: Science Research Associates
259 East Erie Street
Chicago, Illinois 60611

Cost: $ 3.60 per manual
$50.00, 3 filmstrips and audiotapes

Description:

The manual explains three teaching strategies: group investigation, concept learning, and role-playing. The filmstrips and audiotapes illustrate these strategies in use in classrooms. The materials train teachers to use these three strategies in their own classrooms.

V. Teaching Strategies - Affective Orientation

A. Title: Human Relations Unit

Author or Developer: Far West Laboratory for Educational Research and Development

Source: Anti-Defamation League
315 Lexington Avenue
New York, New York 10016

Cost: $410 sale; $50 rental

Materials: Films; handbooks

Description:

Four films depict critical encounters, simulated by teachers and students, in an open-ended format that is often based on a question (e.g., "What do you do if a defiant student refuses to remove his sunglasses in class?") After watching each episode, trainees split into small groups to discuss the issues raised, relate them to experiences in their own schools, and determine specific ways to deal with the problems.

The black-and-white 16mm films focus on four related topics: (1) how visitors to a school may be alienated by the attitude and behavior of the school personnel; (2) how a teacher's words and expressions may be offensive to the students; (3) how a teacher can mishandle rules and regulations; and (4) how a teacher's method of dealing with civil rights issues in a classroom discussion can result in confrontation situations.

B. Title: Interpersonal Communications

Author or Developer: John Wallen

Source: Northwest Regional Educational Laboratory
710 S.W. Second Avenue
500 Lindsay Building
Portland, Oregon 97204

Cost: Information not available

Materials: Printed instructor's manual; printed participant materials; 9 films; 1 audiotape

General Description:

This program is designed for use in a workshop setting. Materials are based on the work of the National Training Laboratories, Institute for Applied Behavioral Science. The following topics related to interpersonal communications are dealt with: paraphrasing, behavior description, describing feelings, nonverbal communication and perception check, the concept of feedback, expectations and communication, the interpersonal gap, the effects of feelings, matching behavior with intentions, open communications, communicating about interpersonal relationships, roles and patterns of interpersonal communications, norms and communication, one- and two-way communication, communication patterns in the school building, communicating under pressure, assessment of knowledge, improving skills, developing support for continuous learning.

C. Title: Teaching Achievement Motivation

Author or Developer: Alfred S. Alschuler, Diane Tabor and James McIntyre

Source: Education Ventures, Inc.
209 Court Street
Middletown, Connecticut 06457

Cost:		
	Text alone	$4.95
	Sampler set (text and pamphlets)	7.50

Materials: Paperback manual and related pamphlets (selected primary source materials available from a general library collection)

Description:

Achievement motivation training is concerned with increasing students' need to achieve their own kind of excellence. "Need to achieve" involves three elements planning to attain excellence, strong feelings about doing well, and action strategies. A repertoire of procedures (techniques) is used to develop need achievement. These include imagination exercises, action exercises such as role plays, games, exercises which emphasize emotional responses, and procedures which emphasize the "here-and-now."

The manual is divided into four parts: backgrou

in achievement motivation and psychological education, an achievement motivation workshop for teachers, motivation in classrooms, and achievement motivation training for students. The heart of the course is the teacher-run workshop (Chapter Two). It is designed as a ten-session (approximately 30-hour) course whose goals are to increase knowledge about need achievement and psychological education methods for increasing motives, and to apply psychological education. Participants in the course learn about their own motive patterns and relate their experience to their teaching. Some sessions are optional.

VI. Classroom Organization

A. Title: Team-Teaching Modules

Author or Developer: L. Jean York
Research and Development Center
for Teacher Education
University of Texas
Austin, Texas

Source: The Leslie Press
111 Leslie Street
Dallas, Texas 75207

Cost: $19.60, set of seven volumes
(excludes nonwritten materials)

Materials: Written materials; films; filmstrips; videotape

Special Ordering Instructions:

Ordering instructions and costs for films and other multimedia materials are listed at the beginning of each module.

Description:

This series of modules has as its general objectives: (1) development of an understanding of the philosophy, background, and processes of team teaching --the knowledge of the kinds of personnel and roles composing a teaching team, team-planning, nongraded school organization, and personal characteristics of team members; (2) knowledge of the organizational,diagnostic, and evaluative techniques for grouping and for individualizing instruction; and (3) personal experience in self-paced, individualized instruction and self-evaluation. The series consists of seven modules:

I. The Background, Philosophy, and Purposes of Team Teaching

II. The Roles of the Professional and Paraprofessional in Team Teaching

III. Materials and Resources Needed for Team Teaching and Individualized Instruction

IV. Grouping Children for Instruction in Team Teaching

V. Team Teaching as a Facilitator of the Nongraded School

VI. Evaluation of Team Teaching and Children's Continuous Progress

VII. Prerequisites for Good Planning Session in Team Teaching

B. Title: Minicourse 5: Individualizing Instruction in Mathematics

Author or Developer: Far West Laboratory for Educational Research and Development

Source: Macmillan Educational Services, Inc.
Front and Brown Streets
Riverside, New Jersey 08075

Cost: $1,395 purchase; $195 six-week rental

Materials: Written materials (teacher and coordinator manuals); filmed instructions; models

Description:

This course helps the elementary teacher handle individual instruction. It provides tutoring techniques to improve mathematics skills through diagnosis, demonstration, evaluation, and use of assigned practice examples for estimating, number of operations, verbal problems, etc.

C. Title: Minicourse 8: Organizing Independent Learning: Primary Level

Author or Developer: Far West Laboratory for Educational Research and Development

Source: Macmillan Educational Services, Inc.
Front and Brown Streets
Riverside, New Jersey 08075

Cost: $1,080 purchase; $165 six-week rental

Materials: Written materials (teacher and coordinator manuals); filmed lessons

Description:

During this minicourse, K-3 teachers learn a set of organizational procedures that make it possible for them to work with a small group of children for 15 to 30 minutes while the remaining students carry on independent activities. The children learn how to anticipate and deal with problems, to set their own goals, and to evaluate their progress.

D. Title: Teaching in IPI (Individually Prescribed Instruction) Mathematics

Author or Developer: Research for Better Schools

Source: Research for Better Schools
1700 Market Street
Philadelphia, Pennsylvania

Cost: Six-volume set (includes records), $10.00

Materials: Six workbooks; record set of three 33-1/3 RPM records

Description:

IPI Mathematics is a system of individualized instruction for children which coordinates behavioral objectives, diagnostic instruments, curriculum material, teaching methods, and instructional time (pacing). This self-instructional program, Teaching in IPI Mathematics, is designed to train teachers in the general diagnosing, planning, and guiding skills involved in individualizing instruction, and specifically to implement the IPI Mathematics Curriculum.

Six volumes deal with the following areas: (1) an overview of individualized instruction and IPI (Volume I); (2) behavioral objectives and the specific objectives in IPI Mathematics (Volume II); (3) diagnosing student achievement (administering and prescribing on the basis of student achievement tests - Volume III); (4) developing prescriptions for three case studies (Volumes IV, V, and VI).

VII. Administrative Skills

A. Title: Determining Instructional Purposes

Author or Developer: Far West Laboratory for Educational Research and Development

Source: Far West Laboratory for Educational
Research and Development
Educational Management Program
Hotel Claremont
Berkeley, California

Cost: $6-$17 for each training unit

Description:

These are three self-contained training units designed for use by a group of administrators. The topics covered are identification and analysis of existing and anticipated instructional programs and needs, specification and refinement of desired educational outcomes, and specification of performance standards against which actual outcomes can be measured.

B. Title: (ICE) Individualized Continuing Education for School Administrators

Author or Developer: Charles F. Kettering, Limited
Englewood, Colorado

Description:

In this system, the school district supports the principal in an individually designed program of self-improvement that will contribute to desired improvements in the school and district. Several administrators within a district work together as a study group, as well as participating in individualized learning activities. The superintendent and outside consultants provide program leadership. Districts that have participated in this ICE program through the auspices of the Kettering Foundation have demonstrated that a significant program can be operated for approximately $1,000 per year per participant. Thus, in a district with 24 principals, each principal could participate in a self-renewal program every fourth year, with an annual cost of $6,000 to the district for the overall program.

C. Title: Research Utilizing Problem Solving (RUPS)

Author or Developer: Charles Jung, Rene Pine, and
Ruth Emory

Source: Copy-Print Centers
1206 S.W. Jefferson Street
Portland, Oregon 97201

Special Ordering Instructions:

Tape recording obtainable from:

Rex Recording Studios
931 S.W. King Street
Portland, Oregon 97205

Cost:

Leader's Manual	$6.00
Participant Materials	2.25
Tape Recording	3.25

Materials: Printed manuals for use by leader and students; tape recording; printed charts to be prepared by leader

Description:

A carefully designed and tested course requiring 35 hours of instruction, designed to develop skills in problem solving. These skills include: identifying the problem: analysis of the problem using the force field technique (Lewin); selecting tools for data collection; deriving implications and action alternatives from research findings; planning for action.

D. Title: Self Performance Achievement Record (SPAR)

Author or Developer: James L. Olivero et al.
Program Associates
Charles F. Kettering, Limited
Englewood, Colorado

Description:

In this program, the principal's self-development plans are laid out in a contract, with specification of behavioral objectives and acceptable evidence that performance criteria have been met. Forms and instructions to help the principal plan his own inservice education have been developed by CFK Ltd. Associates.