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FOUR OBSERVATIONAL CATEGORIES FOR DESCRIBING TEACHER BEHAVIOR.

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BASED IN PART ON A SKINNERIAN LEARNING ORIENTATION, 4 DIMENSIONS OF THE TEACHER'S BEHAVIOR ARE HYPOTHESIZED AS IMPORTANT IN MEDIATING CLASSROOM LEARNING--(1) INFORMATION GIVING (IG), (2) RESPONSE ELICITATION (RE), (3) FEEDBACK (F), AND (4) TEACHER CONTROL (TC). FROM 34 TO 42 5-MINUTE OBSERVATIONS WERE OBTAINED FOR EACH OF THE 4 TEACHERS IN A COGNITIVE ENRICHMENT PROGRAM FOR UNDERPRIVILEGED PRESCHOOL CHILDREN. RECORDINGS WERE MADE FOR EACH "SMALLEST DISCERNIBLE SEGMENT OF A TEACHER'S VERBAL OR NONVERBAL BEHAVIOR WHICH COULD BE CLASSIFIED INTO A PARTICULAR CATEGORY." INTERRATER RELIABILITY EXCEEDED .90 FOR EACH OF THE 4 CATEGORIES. THE DISTRIBUTION OF BEHAVIORS AMONG THE 4 CATEGORIES VARIED SIGNIFICANTLY AMONG THE TEACHERS, WITH TOTAL PERCENTAGES AS FOLLOWS--IG-46 PERCENT, RE-33 PERCENT, F-14 PERCENT, TC-7 PERCENT. INTERCORRELATIONS AMONG THE OBSERVATIONAL CATEGORIES SHOWED, IN PART, THAT THE CATEGORIES WERE MUTUALLY RESTRICTING. THUS A TENDENCY TO GIVE INFORMATION REDUCES THE LIKELIHOOD OF ENCOURAGING PUPIL RESPONSES OR PROVIDING FEEDBACK. SIGNIFICANT DIFFERENCES BETWEEN TEACHERS WERE FOUND FOR THE RATIO OF FEEDBACK TO RESPONSE ELICITATION, ASSUMED TO CORRELATE POSITIVELY WITH EFFECTIVE TEACHING. THE LIMITED AVAILABLE EVIDENCE SUGGESTS THAT THE OBSERVATION PROCEDURE DOES DIFFERENTIATE AMONG TEACHER STYLES, BUT THE SCALE STILL NEEDS TO BE VALIDATED AGAINST EXTERNAL CRITERIA. (LC)

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FOUR OBSERVATIONAL CATEGORIES FOR DESCRIBING TEACHING BEHAVIOR

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This article presents a description and some preliminary results of a classroom observation scale based in part on a Skinnerian learning orientation. Skinner in many of his theoretical and empirical papers (e.g., 1938; 1953) has stressed that much of human behavior is shaped and controlled by reinforcement contingent upon the occurrence of a response. Consistent with this position, Skinner (1954) has suggested that classroom learning is influenced by the degree to which a child's responses to the curriculum content are promptly and consistently reinforced. This idea has been embodied in the now frequently discussed and utilized approach of programmed learning.

It is reasonable to assume that the teacher exercises considerable influence in establishing conditions which can contribute to or interfere with pupil learning. The observation scale described in this paper delineates four dimensions of the teacher's behavior which are hypothesized as important in mediating classroom learning. These dimensions are described below.

1. Information Giving (IG). This dimension refers to any teacher behavior by which a fact or portion of a concept is verbally transmitted by the teacher to her pupils.

2. Response Elicitation (RE). This dimension refers to any teacher effort to involve pupils actively in the learning activities by asking them specific questions relevant to the curriculum lesson or by giving pupils instructions to respond motorically. This category is somewhat analogous to a programmed learning situation in which the child responds to a series of questions presented in a sequential order.

3. Feedback (F). This refers to any indication by the teacher of the correctness or incorrectness of a pupil's (or the class') response to a learning activity. Included in this category are any teacher statements which guide the pupil toward the desired response. This dimension parallels a basic feature of a programmed learning situation—i.e., an immediate indication of whether a response is correct.

4. Teacher Control (C). This refers to any effort by the teacher to maintain or redirect pupil attention in relation to a learning activity.

METHOD

The above dimensions were used in observing a cognitive enrichment program for underprivileged preschool children. The observations were conducted in four nurseries, each having an average enrollment of 13 children, supervised by a teacher and her assistant. The nursery observations were limited to planned group activities involving, for example, concept teaching, object-word relationships, etc. Each observation was made for a 5 min. period. When the lessons were terminated before the observation period ended, the scores were prorated for a 5 min. interval. From 34 to 42 observations were obtained for each of the four teachers.[1]

In using the observation procedure, a tally was recorded to represent a unit of a teacher's behavior corresponding to one of the dimensions described above. A unit was defined as the smallest discernible segment of a teacher's verbal or nonverbal behavior which could be classified into a particular category. To illustrate the categories and the manner in which the tallies were made, a brief sample from a nursery lesson is given below with the categories indicated in parentheses:

Teacher: Yesterday, I showed you a vegetable (IG). Does anybody remember what it was (RE)?

Child: A tomato.

Teacher: No, it was not a tomato (F). (Teacher seats a child moving away from the group (C).) Tony, sit quietly (C). Robert, the vegetable I brought yesterday was what (RE)?

Child: A cucumber.

Teacher: Yes, it was a cucumber (F). You said that word very well (F). Now let's all say cucumber (RE).

A preliminary condition to be met in the construction of the scale dealt with the ability of independent observers to agree on their interpretation of the behavioral categories. Based on 26 5-min. observational periods (obtained in an earlier study), the interrater reliability correlation coefficients exceeded .90 for each of the four observation categories. To insure representativeness of the reliability data, the 26 observations were distributed approximately equally among the four nurseries.

RESULTS AND DISCUSSION

The data in Table 1 indicate that the total scorable units of teacher behavior are not uniformly distributed among the four categories ($\chi^2 = 44.44$, $df = 3$, $p < .01$), with teachers spending a major portion of their time in giving information. In addition, there is

TABLE 1
Mean Percentage of Behavioral Units Distributed Among the Four Observational Categories for Each Teacher

Teacher	Information Giving %	Eliciting Responses %	Feedback %	Control %
A	64 (1924)	24 (728)	9 (260)	3 (88)
B	34 (1017)	46 (1384)	12 (360)	8 (238)
C	42 (1271)	30 (911)	16 (485)	12 (331)
D	43 (1304)	32 (967)	18 (534)	7 (195)
Total Mean Percentage	46	33	14	7

NOTE—The number in the parentheses indicate the total number of behavioral units occurring within the 30 observation periods upon which the percentages were computed.

[1] To equate the comparisons, from 4 to 12 observation periods were randomly deleted from the data collection on each nursery.

a significant variation among the teachers in how their behavior is distributed among the four observational categories ($\chi^2 = 38.62$, $df = 9$, $p < .01$). Thus, for example, of the total observable behavior of Teacher A, 64% was categorized as information giving in contrast to 34% for Teacher B.

Table 2 presents the intercorrelations among the observational categories. In general, the pattern of relationship suggests in part that the observed categories of teacher behavior were mutually restricting of each other. Thus, tendencies of teachers to give information reduces the likelihood of their encouraging pupil responses or providing feedback.

TABLE 2

Intercorrelations Between Observation Categories Based on N=30 Observations

Variables	IG	ER	F	C
Information Giving (IG)	—	—.85	—.73	—.31
Eliciting Responses (ER)		—	.49	.00
Feedback (F)			—	—.12
Control (C)				—

While the effectiveness of any particular style of teacher cannot be determined from the available data, some inferences may be made from an examination of interrelationships among categories. As suggested from the Skinnerian framework, it may be assumed that the ratio of feedback to response elicitation should be high for effective teaching. That is, children should be regularly and consistently informed regarding the accuracy of their responses in order to reinforce desirable behavior and extinguish incorrect response tendencies. A one-way analysis of variance does show that this ratio differs significantly ($F = 3.06$, $df = 3/116$, $p < .05$) between teachers from a mean value of .56 for Teacher D to .26 for Teacher B.

In evaluating the usefulness of the observational scale, attention must be first directed to whether or not the scale differentiates among teacher styles. The very limited evidence collected so far suggests that the observation procedure does indeed detect differences between teachers, especially in regard to the response elicitation and feedback dimensions. The scale must of course be validated against external criteria. As suggested above, one prediction might be that learning (as measured by standardized achievement tests) would be higher in classrooms where teachers provide frequent feedback to the learning efforts of pupils—i.e., in classrooms where the ratio of feedback to response elicitation is high. Studies (now being planned) which confirm such a prediction would help establish the construct validation of the described observation scale.

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