DOCUMENT RESUME

ABSTRACT
        The objective of the project was to develop two
coding systems, one on teaching strategies and one on pupil
involvement in classroom activities. Videotape sequences served as
test data for refining the categories. Codings were analyzed for
clustering of teaching behaviors into teacher roles and relationships
between teacher behavior and pupil behavior. Coded samples of
trainees' early teaching sequences were compared to later sequences
to identify change in teaching performance. The two coding systems
offer a viable means for describing teaching-learning behavior in a
gestalt, thereby laying a foundation for agreement on
performance-competence criteria. The appendix includes a sample
Teacher Behavior Form and Pupil Behavior Form. (Author/SE)

TWO CODING SYSTEMS TO DESCRIBE TEACHING

BEHAVIOR AND PUPIL BEHAVIOR: A GESTALT

APPROACH TO TEACHING

Principal Author: Sydney L. Schwartz

Johanna K. Mott

Queens College, CUNY

Paper delivered at the annual meeting of the

American Educational Research Association, April, 1974

TABLE OF CONTENTS

TWO CODING SYSTEMS TO DESCRIBE TEACHING
BEHAVIOR AND PUPIL BEHAVIOR: A GESTALT
APPROACH TO TEACHING

Authors: Sydney L. Schwartz, Principal Author
Johanna K. Mott
Queens College, CUNY

Paper delivered at the annual meeting of the American
Educational Research Association, April, 1974

Preface

For the past three years, the early childhood staff of
Queens College of the City University of New York has been
in the process of designing and implementing an undergraduate
early childhood teacher education program that focuses on
teaching performance in field settings. The dimensions of
this program which depart from the previous teacher education
program at the college are:

1. a professional year of study, integrating
   learnings from the fields of educational psy-
   chology, child psychology and early.childhood
   curriculum and methodology,

2. on-going weekly field experiences in an
   assigned field center from the first week of
   the program and continuing through the year,

3. continuity of faculty instruction and supervi-
   sion through the assignment of one faculty mem-
   ber to supervise field experiences and college-
   based professional studies,

4. articulation of classroom teaching experiences
   with professional studies through joint weekly
   planning meetings with classroom teachers and
   college faculty,

5. use of instructional modules to facilitate
   individualization of student studies

(6) the development of performance criteria
as a determinant for successful completion
of the program,

(7) evaluational procedures built into the pro-
gram design.

The following study is an integral part of steps 6 and
7 and is designed to contribute to the task of developing
performance criteria which are defensible in the broader
field of early childhood education.

A second paper in this series describes the use of
the two coding systems with classroom teachers to individual-
ize teacher trainee practice. See Mott, J.K. , Using Two
Coding Systems, Teacher Behavior Form (TBF) and Pupil
Behavior Form (PBF) with Classroom Teachers in Field Centers
to Shape Observations and Guidance of Teacher Trainees.

Background: Needs and Objectives

The primary task as defined by the researchers was to find a way to describe teacher functioning and children's involvement in a multiple-activity early childhood classroom which would be sufficiently simple and efficient to be of practical value to classroom teachers, teacher trainees and college faculty. The goal was to find a common language to describe teaching-learning interactions that can lead to a better understanding of the relationship between teaching behavior, and children's involvement and progress. As this goal is achieved, a legitimate focus for teacher education programs is possible. The goal is not unique in today's era of attention to performance and competence criteria in teaching. Efforts to find orderly procedures for describing teaching-learning dimensions of a classroom have been in the limelight for over a decade, long enough to accumulate enough studies to warrent synthesizing summaries on the state of the art. (Rosenshine & Furst, Simons & Boyers, Bellack) It is clear that there is no paucity of teacher observation systems and instruments. A brief review of any of the above cited summaries reveals the extensive effort that has been devoted to studying teaching and learning behavior. What the researchers identified as missing was a broad-based observational system including verbal and non-verbal behaviors, in both management and instructional dimensions, that could realistically serve the team of teachers, teacher trainees and college faculty in early childhood education.

The current demands of certifying agencies in teacher education are forcing a premature specification of performance and/or competence criteria at the beginning teacher level. At this point in time, two problems which are of concern are: (1) the field has not clearly validated specific teaching behaviors as significant in terms of children's progress and (2) no orderly consideration has been given to the notion that effective teacher behaviors may have developmental stages in the process of acquisition. The study of such a notion may reveal much about appropriate criteria for teacher education and certification at different levels of experience, preservice, beginning teaching and in-service.or graduate training.

Adding to the complexity of the task is that fact that a definition of what constitutes children's progress at the early childhood stage is somewhat obscure(Bentley, Washington & Young). Except for the standardized tests in the reading and mathematics for the early grades, practical tools for assessing progress related to school group experience for young children is notably sparse. Perhaps this is due to the fact that early childhood programs include broad goals in contrast to the more narrowly defined curriculum content goals of the upper educational levels. Early childhood education is popularly know for its committment to foster development in oral language, social skills, motor coordination, expressive skills through action and media, as well as concept and skill development in the traditional subject matter areas. (Leonard, Van Deman & Miles)

If early childhood educators are to seriously face the
challenge of developing performance criteria for the novice
teacher, without the endless lists of minute behaviors or
limited lists of grossly stated behaviors, it seemed critical
to develop some format for looking at the gestalt of teaching
and learning behaviors in the early childhood classroom. The
task, as defined, was to find a way to talk about the behaviors
being used by the young teacher and the learning behavior
of the pupils as the teaching behavior occurs.

Underlying notions of the researchers in approaching
the task have been extremely well articulated in a recent
research journal article in a special edition devoted to
"Gaps in Teacher Education". (Medley.) The author discussed
the gap between research in teacher effectiveness and the
teacher education curriculum, specifically focusing on the
current contribution of teacher observation systems. He noted
that the performance criteria identified by the various cate-
gory systems are probably all valid under selected conditions.
Thus, the concern of the process-product research activities
would be more appropriate if focused upon identifying rela-
tionships between performance criteria and teaching tasks
in specific situations. This particular approach seemed
fruitful in terms of considering an early childhood class-
room which has distinctive dimensions to it.

No attempt is made here to indicate that there is only
one form of early childhood classroom or that there is one
over-riding theory which influences the development of pro-
grams for young children. (Note that early childhood herein

refers to ages three to eight years, encompassing programs for
prekindergarten, kindergarten, grades one and two.)   However,
the early childhood programs which drew the attention of the
researchers were those which featured action-based learning
activities in multiple-activity classrooms, small groupings
for instruction and extensive use of instructional materials
by the learners. In this environment, the instructional groups
usually number no more than ten children, and more often less.
Pupils have access to the instructional materials in the
activity without extensive waiting time. Consequently, the
pupils may respond actively to the instructional stimulus
without excessive restriction on spontaneity.

Theoretically, the pay-off for this instructional format
is high involvement of the children in the instructional acti-
vity. To maintain an active pace, the teaching behavior inter-
mingles the management and instructional dimensions so that
the involvement of the pupils in the task is not lost due
to distracting managment behaviors by the teacher.

One additional feature of such early childhood classrooms
warrants attention. Within the action-based learning model,
instructional activities range across a spectrum from the
pupil-selected exploratory and practice activities to the
teacher mandated activity, often didactic in form. The
essential task was to develop a broad-based observational
system which distinguished between teaching behaviors used
in one type of activity as contrasted to another type of ac-
tivity. Similarly, it could have the capacity to identify
differences in children's involvement in the differing types

of instructional activity with its correlated teaching behaviors. This approach offered the potential for process-product studies on children's progress in terms of learning goal and type of instructional activity and teacher behavior. This is in contrast to the more common approach of (1) building process-product studies on gross progress of children or (2) comparing general teaching style to progress on discrete learnings.

An observation system was sought that was versatile enough to focus on different kinds of instructional episodes in an early childhood classroom, including materials exploration, drill practice, didactic and discussion episodes. The goal was to develop the tools to investigate further into the relationship between teaching behavior, the type of instructional activity, instructional goal and children's learning behavior. If it is demonstrated that certain teacher behaviors tend to cluster around a learning goal, such as developing initial rhyming skills, then additional study can follow as to the degree to which the cluster of teacher behaviors correlates with learning outcomes at differing age levels.

In summary, the objective of the project was to develop two coding systems, one to describe teacher behavior and one to describe pupil involvment, which met the following criteria:

   (1) encompassed a broad range of teaching behaviors
       which could be compared to pupil involvment in a
       variety of learning activities in an early child-
       hood classroom.

   (2) offered descriptive feedback on teaching-learning
       behavior usable by classroom teachers, teacher

trainees and college faculty.

(3) would be sufficiently simple and efficient in use
to be of practical value to classroom teachers,
teacher trainees and college faculty in focusing
on describing teaching performance and pupil
involvement.

A coding system was needed which could be used as a functional
part of a professional activity to promote professional under-
standing of teaching-learning interactions.

Procedures

After a careful review of the literature, the researchers
eliminated those teaching observation systems which were re-
stricted to either verbal or non-verbal behaviors, affective
or cognitive behaviors, behavior management, or specific
academic content areas. The broad-based instrument sought
needed to include all of the above dimensions, maintaining
simplicity by avoiding extensive breakdown in each of the
above categories. Ultimately,the category system selected
for revisement was one published as a program related system.
(Robison & Schwartz). This category system had the advantage
of already including many of the dimensions identified above.
Extended study of the observation system was never completed
so that it was subsequently published as a guide for ways to
think about aspects of teaching behavior, to increase teacher
sensitivity to some of the behaviors commonly employed by
teachers of young children.

In terms of pupil behavior, the extensive possibilities

of learner behavior were narrowed down to a primary dimension,
that of involvement of the learner in the learning task. It
would be difficult to find a learning theory that did not
have an assumption that the involvement of the learner is a
prerequisite to achievement in any learning procedure. The
process by which the learner is engaged offers a point of
dialogue between various theories, however, the attention of
the learner to the learning task is essential. It is this
simplest dimension that the researchers sought to establish
in focusing on teaching-learning behavior, to begin to iden-
tify some parameters for describing the pattern of task
involvement by pupils as it relates to teaching behavior
in learning episodes.

The research team included 4 faculty members on the
Early Childhood Staff at Queens College, CUNY. Two of these
members were directors of the pilot year program, 1972-3
with 32 teacher trainees, and continued with a new group of
34 trainees in 1973-4. Over seventy-five video-taped class-
room teaching episodes guided by the pilot year trainees
and experienced classroom teachers provided protocol materials
for refining the categories. In 1973-4 group, 17 trainees
were selected for study and analysis of the codings of their
video-taped teaching episodes. The trainess selected
were assigned to one of two field centers serving distinc-
tively different socio-economic and ethnic groups in the
New York inner city. They were equally distributed in
the two field centers and across grade level lines, from
prekindergarten to grade two. This offered a representative
group for study, from a variety of teaching environments.

In the early developmental phases, as the categories for
the Teacher Behavior Form (TBF) and the Pupil Behavior Form
(PBF) were being clarified, the researchers viewed many of the
aforementioned tapes collected prior to the current year. At
various points throughout the developmental process, the devel-
oping teacher category system was tested for clarity and ease
of explanation by presentation to small groups of trainees,
classroom teachers from the field centers and college faculty.
Each presentation was accompanied by practice on typescripts
and video-taped sequences to test for concurrance on the defi-
nition of the categories. These early discussions of the devel-
oping categories contributed to clarification of the defini-
tions. The groups were engaged in discussion of the meaning
of the codings in describing relationships between children's
involvement and teaching behavior.

In the later phase of the development of the TBF and PBF,
seventeen video-taped instructional episodes were coded for
analysis using both coding systems. Codings were completed
by two members of the research team independently. In addi-
tion, coding, recoding procedures were used to secure the
stability of the categorization. However, at this early
stage, statistical analysis of inter-observer reliability and
coding-recoding reliability were not undertaken. The codings
were analyzed for:

      1. frequency of use of teacher behaviors by an indi-
         vidual teacher to form a profile,

      2. clustering of behaviors into a pattern, subsequently
         labelled teacher roles,

      3. comparison of teacher roles with the form and goal
         of the instructional activity, and

      4. comparison of teacher profiles with pupil involvement.

Development of the Teacher Behavior Form

In discussion of the development of the categories of
the TBF it is recommended that the reader refer to Appendix I
for the complete set of criteria and definitions, and recording
form. Chart I on page 10 offers a brief definition of the items.

Built into the Activities Analysis Form of Robison and
Schwartz was a distinction between management and instructional
concerns of the teacher. The rationale for this distinction
was that an important part of teaching energy in early child-
hood classrooms is devoted to facilitating children's active
involvement, often with materials, in the instructional activi-
ties of the classroom. This facilitation is achieved through
management behaviors, in contrast to those behaviors directed
to the instruction. In revising the categories, the clarity
of this distinction was increased. As the categories evolved,
the same teaching behaviors were observed to occur whether
focusing on the procedures or the instruction, consequently
the coding system was altered to account for these behaviors
as in the Management Mode or the Instructional Mode.

Both affective and cognitive teacher behaviors were
included. However, as has been noted in the research litera-
ture, the distinction between affective and cognitive behaviors
is not as clear as it appears initially. Certain behaviors
seem to be laden with the cognitive focus while others seem
to combine with affective dimensions. (Rosenshine, 1971)
The categories which were identified as having the heavy

Chart I

Brief Category Definitions of the

Teacher Behavior Form

Managing Behaviors

1. <u>Manipulate Materials</u>: Teacher handles, distributes or organizes materials as a management function.

2. <u>Give Directions</u>: Teacher tells children what to do and/or how to do it by verbal command form or by signals and gestures.

Strong Cognitive Behaviors

3. <u>Supply Information</u>: Teacher gives information, lectures or narrates verbally.

4. <u>Demonstration/Illustration</u>: Teacher gives information non-verbally, by action, signal, gesture or using materials.

5. <u>Reinforce: objective</u>: Teacher responds to child's verbalization or action by offering descriptive feedback or response, reaffirming or denying child's behavior.

6. <u>Short Answer Question</u>: Teacher questions children for recognition and recall.

7. <u>Elicit: Program Activity</u>: Teacher invites or encourages children to engage in conversation or to work with materials, related to the instructional activity.

8. <u>Probe</u>: Teacher encourages children to find additional information, identify relationships, interpret experiences and make predictions.

Affective Behaviors

9. <u>Reinforce: subjective</u>: Teacher responds to children's verbalizations or actions with generalized praise or criticism.

10. <u>Elicit: social</u>: Teacher engages child in conversation of a personal-social nature, unrelated to a specific instructional activity in progress.

11. <u>Physical contact</u>: Teacher comes into physical contact with child.

12. <u>Participate with children</u>: Teacher interacts with children as a member of the group.

13. <u>Non-intervention</u>: Teacher is present, viewing the children and not interacting for sixty seconds.

loading were for teacher inputs of Supply Information, (Category)
3 and Demonstrate, # 4. An additional teacher input was seen
in the Reinforcement: objective behaviors of the teacher as
the child's statements or actions were reaffirmed by the teacher,
5.

In addition, cognitive emphasis was present in those
teacher behaviors which call forth:

> (1) what a child knows at the recognition and recall
> level. Short Answer Question, # 6
>
> (2) narratives of impressions of experiences and/or
> production of behaviors already acquired. Elicit:
> program activity, # 7
>
> (3) new connections or new understandings between
> what the child knows and the problem, stimulae
> or task presented, a form of cognitive extending.
> Probe, # 8

In essence, the familiar cognitive levels of Bloom's Taxonomy
were collapsed into three categories. (Bloom)

Behaviors which were viewed as having strong affective
as well as cognitive dimensions include communications which
primarily offer generalized support and encouragement (or
the reverse) , Reinforcement: subjective, # 9 , Participa-
tion with children, # 12 and Elicit: social, # 10.

Only one category was viewed as primarily affective,
that of Physical Contact, # 11. Early childhood teachers are
often described as "touch" teachers, and though this behavior
did not show up as dominant in the initial work with tapes,
it was decided to have the category stand for the current
study.

Teachers' reinforcement behaviors have been subject to considerable study and have varied definitions. In the TBF the reinforcement categories refer to teacher behavior which reflects or gives feedback to the child on his verbal or non-verbal behavior. Teacher reflection or feedback takes explicit or implicit form in the sense that the teacher clearly defines or alludes to the original behavior prompting the response. This category was sub-divided into Reinforcement: objective, # 5, and Reinforcement: subjective, # 9, to pick up this distinction between the explicit and implicit response base. Interestingly, earlier reports of research summaries discuss this area of difference as offering the strongest research evidence for forms of approval negatively and positively related to achievement. (Rosenshine, 1971)

The extensive use of materials in the learning activities with young children was accompanied by teacher manipulation of these materials in preparation, distribution and arrangement for use. This occurred in addition to the use of materials to communicate information. Manipulate materials, # 1, was included as a category which distinguished teacher use of materials in instruction in the form of Demonstration, # 4, from the management of the materials. By definition, Manipulate materials occurs only as a management behavior.

The giving of directions which is a dominant teacher behavior serves both instructional and management goals. Though, when the behavior occurs as an instructional one, it still supports the teacher controlling of the environment, the distinction between instruction and management was deemed

Important.

No attempt was made to delineate between teacher initiation or teacher response in the behaviors expect for the category of Reinforcement: objective & subjective, which by definition is a responding category. For example, the category system does not identify whether the teacher gives information in response to a child's question or whether the teacher initiates the communication. In this system, teacher behaviors were considered important without respect for the stimulus for the communication.

In summary, the items included in the observation system were seen to reflect dominant behaviors of teachers in multiple-activity, action-based learning environments where instructional episodes were diverse in format and focus.

Development of the Pupil Behavior Form

While reading the discussion, it is recommended that the reader refer to the definition of categories and the recording form in Appendix II.

The development of the PBF was completed subsequent to the development of the TBF and evolved from the discussion and observation comments made about the children as the TBF categories were being refined. Continual reference was made by the researchers and various participants to the involvement of the children in the instructional activity. Although the possibilities for describing the learning behavior of the pupils range across a broad spectrum, the complexity of coding children's behavior when the children are

grouped led to a single category or base for building the coding system. The form of children's involvement in the learning activity was chosen as the base from which the sub-categories were developed. As indicated earlier in this paper, there is considerable difference of opinion as to what constitutes effective learning behavior, but all theories have in common the notion that the learner must attend to the learning stimulus.

The children were viewed as attending the learning activity, resisting the learning activity or attending to another stimulus other than the one provided in the activity. Children who were watching the stimulus, responding appropriately verbally and/or with materials, and/or in action were considered to be task involved. Children who were passively or actively avoiding the expectations of the teacher to listen, produce responses or behavior were judged as task resistant. Children who were engaged passively or actively in an alternate activity, occuring simultaneously with the learning activity were described as task unrelated.

Children demonstrated their involvement level by apparently listening, Receiving, making verbal contributions, Producing Language, handling the materials, Manipulating Materials, and moving about, Producing Action.

As the researchers worked with the PBF, it was decided that time-sampling best reflected the pattern of involvement of the pupils. It also became evident that recording of all pupil behaviors at each interval was necessary. Since the

coded episodes were of a ten-minute duration, time sampling was specified as the first three seconds of each thirty-second period. This allowed for twenty recordings in the ten-minute segment.

Defining Teaching-Learning Patterns

A beginning step was made in finding teaching-learning patterns by analyzing the codings of a teaching segment in terms of clusters of teaching behaviors occurring with pupil involvement. The clusters of teacher behaviors were called the teacher profile. The two stages of analysis of the codings were:

(1) developing profiles of each teacher,
(2) grouping profiles in terms of teacher behavior
       clusters and instructional goals.

These two stages represent the beginning work of the researchers in establishing a procedure for jointly analyzing the PBF and TBF.

The following analysis of a coded episode illustrates how a teacher profile is developed from the codings. See Appendix III for the raw codings.

Profile: Teacher A

Instructional Task:

Goals: I. Vocabulary expansion, language labels
       2. Visual discrimination practice.
Procedures: Use a UNICEF Lotto Game of foods from all over the world, an introductory experience with the materials. Discuss, label and match pictures.

Teacher Behavior (TBF)

There is a heavy loading of reinforcement behavior, with 34% of the behaviors appearing in the two categories, Reinforcement: objective and Reinforcement: subjective.

An emphasis on learner acquisition is reflected in the behaviors of <u>Supply Information</u> and <u>Demonstrate</u> which represent 25% of the behaviors recorded. The next most dominant behavior was asking children to produce language and action through <u>Short Answer Question</u> and <u>Elicit: program activity</u>, representing 23 % of the behaviors.

A cycle of giving information to children, asking children to produce responses was continuously followed by reinforcement behaviors, thereby indicating the dominant pattern as reinforcement of information.

Pupil Behavior Form (PBF)

The language dimension of the activity was more dominant in the children's behavior than the manipulation of materials. Children were <u>producing language</u>, <u>task related</u>, 80% of the time. Visual discrimination practice through <u>manipulation of materials</u> was possible only 30% of the time, though the materials manipulation could have served disucssion purposes and not matching practice.

Summary: Vocabulary and oral language practice is herein related to heavy loading of teacher reinforcement behaviors combined with giving information and asking children to produce language.

This teacher's management behaviors are barely visable, while she sustains children's involvement throughout the episode.

The preceeding profile analysis represents only one ten-minute segment of teacher behavior and cannot be used to make generalizations about the teacher's total pattern or style of teaching. Multiple samples of teaching in a variety of instructional episodes would be required before the dominant

pattern noted in this episode could be ascribed to a teacher.
Similarly, no generalizations can be made about the use of the
combined behaviors of reinforcement, supply information and
questioning and eliciting as it relates to episodes directed
to vocabulary expansion through discussion of new materials.
However, what can be said is that this profile represents an
example of the teacher's use of teaching behaviors and
the children's involvement achieved in the episode.

Stage two of the analysis, grouping profiles in terms of
teacher behavior clusters, suggested the need for further
work along these lines. Where teacher clustering of behaviors
amounted to at least one third of the behaviors employed by
the teacher, the label Teacher Role was applied to indicate
the extent of the use of the cluster of behaviors. Four
teacher roles were identified in the group that was coded.
These were Reinforcer, Information-Giver, Evaluator and
Manager. Illustrations of how the teacher behavior clusters
were formed are given on the following pages. Before
studying these clusters it is important to note that only
one-half of the trainees coded could be classified as
demonstrating a Teacher Role, or having a dominant cluster
of behaviors. Although nine did not manifest strong clustering
of behaviors, five of this group could be described as having
strong leanings toward a clustering pattern, that is, having
25%-30% of the behaviors in the cluster instead of the 33%
level selected to indicate a Teacher Role. This left four
trainess with no discernible pattern or clustering.

Reinforcer: responding to children's verbalizations &/or actions by reaffirming the behavior or statement, as positive reinforcement, or contradicting and denying, as negative reinforcement.

Examples:

Trainee B

Behavior Cluster.	Instructional Task
Objective & Subjective Reinforcement Behaviors comprise 48.5 % of episode, backed up by elicitation, .14.9%	Language elicitation to precede children's story writing by dictation. No props during discussion. Grade I

Trainee A

Behavior Cluster	Instructional Task.
Objective and Subjective Reinforcement Behaviors comprise 33.9% of episode, backed up by information giving, 24.9%	Expand vocabulary and practice visual discrimination with materials through discussion and use of materials. Grade I

Discussion:

Trainee B's reinforcement behavior was supported by teacher behaviors directed to eliciting. In essence, the trainee supported the elicitation by use of reinforcement behaviors. Children's high involvement in producing language that was task related continued throughout the episode.

Trainee A's reinforcement behavior was backed up by giving information. In contrast to Trainee B, this trainee supported the communication of information rather than supporting the elicitation. Children's involvement in producing language that was task related was somewhat less than Trainee B, at 80% instead of 100%.

In essence, the behaviors were consonant with the goals.

Information Giver: communicating information to children by verbalizing &/or demonstrating with gestures, actions or materials.

Trainee C

Behavior Cluster	Instructional Task
Verbal infor: 19%	Mathematics review of
Demonstrate: 21.8%	procedures for finding
totalling 40.8%	linear measurement,
backed up with <u>giving</u>	through a practice
<u>directions</u>, both for	activity. Grade I
instruction & management,	
36.8%	

Trainee D

Behavior Cluster	Instructional Task
Verbal infor: 19 %	Mathematics review of
Demonstrate: 21.8%	linear measurement,
totalling 40.8%	followed by practice
backed up by <u>giving</u>	activity. Grade I
<u>directions</u> in instruc-	
tion, 10 % and use of	
management behaviors, 23%.	

Discussion:

Unusual conformity of the percentages of behaviors raises some questions about the possibile uniformity of procedures in the specific instructional task being implemented by both teachers. This bears investigation.

Trainee C had increasing loss of involvement related to tne task during the progress of the activity, as children increasingly engaged in tasks unrelated to the focus of the activity. In contrast, Trainee D sustained pupil involvement in the task. The difference seems to rest in the variation in use of <u>directions</u> and <u>management</u> behaviors. The distinctive difference seems to be in the <u>manipulation of materials</u> as a management behavior oy Trainee D and not Trainee C. Further investigation is needed.

Manager: controlling the procedures or management of the activity through control of the materials, organizing the environment and directing children on procedural aspects of the activity.

Trainee K:

Behavior Cluster	Instructional Goal
Management directions, 20% combined with other Management behaviors totaled 39%. The supporting behaviors spread out into 3 categories: give info. 18% reinf.,obj. 17 % short ans. q. 19 %	Science: investigating the interior of fruits and vegetables for seeds; also, comparing properties of the foods using all five senses. Props, real food. Grade I

Discussion:

High involvement of children throughout episode. The extensive use of management behaviors bears further investigation in terms of the ends toward which the management was directed. The apparent focus of engaging the children in using the five senses combined with the strong management directions raises more questions than it answers.

. . . .

Evaluator or Tester: requiring children to produce what they know through the use of test questions combined with giving directions.

Trainee H:

Behavior Cluster	Instructional Goal
Short answer question, 36.6% backed up with manage. directions, 23.2%	Drill practice, initial word sounds using a picture chart as a prop. Kindergarten

Trainee I:

Behavior Cluster	Instructional Goal
Short Answer question, 27.4% accompanied by instructional directions, 14% Management behaviors, 14%	Drill practice, initial word sounds using word cards as propr. Grade I

Trainee J:

Short Answer question, 21.4% Instruction direction, 16% Management direction, 8.3%	Drill practice, word recognition using word cards as props. Grade I

Discussion:

Both trainees H & I had decreasing involvement of the children throughout the episode in terms of the task. In contrast, Trainee J sustained the involvement. Though not part of the behavior cluster, the presence of objective reinforcement, 10% in J's behaviors may account for the difference in the task involvement of the children. The behaviors are basically similar in the clustering, yet variations of the use of the less dominant behaviors and the presence of some negative affect in the behavior of both H and I raise questions for further study of the Evaluator-tester role.

Summary

During phase one of the developmental project, two coding systems were developed, one to describe teaching behavior and one to describe pupil involvement. The Teacher Behavior Form includes thirteen categories, focusing on both management and instructional, verbal and non-verbal teaching behaviors with affective and cognitive dimensions. The Pupil Behavior Form focuses on children's forms of involvement in instructional

activities. Four forms of involvement were identified, ranging
from receiving and attending stimulae offered to producing
language and action. Non-attending pupil behavior was recorded
as unrelated or resistant.

Technical treatment of the category systems for inter-
observer reliability and item analysis was neither planned
nor implemented in this phase of the project. The field
already offers numbers of observation systems statistically
treated for the above items but not suitable for observing
teaching-learning behavior in early childhood classrooms.
The task was to develop a set of coding systems and explore
possible analysis of teaching-learning interactions in the
action-based classrooms of early childhood. Once initial
work indicated that the coding systems could meet the need,
step two would be planned to formally test the coding systems
for independence of items and reliability.

Initial work with seventeen coded episodes of video-taped
sequences revealed clusterings of teaching behaviors into
patterns which were subsequently labelled teacher roles.
The clustering patterns identified were (1) managing the
environment, (2) giving information, (3) evaluating or
testing children's progress, and (4) reinforcing children's
verbalizations and actions. Pupil involvement was recorded
as reduced with the pattern of testing for child progress.

The next steps planned are to (1) accumulate a large
number of coded segments for item analysis and (2) establish
inter-observer reliability. Finally, validity studies will
be planned in terms of teaching-behavior patterns related to

learning behavior patterns toward selected instructional goals

and children's progress.

TEACHER BEHAVIOR FORM (TBF)

Definition of categories: Across the horizontal frame are two categories with identical subdivisions. The first category refers to the instructional activity and the second category refers to the procedures by which the instructional activity is managed. Teaching behavior devoted to the activity is coded as instructional, while teaching behavior devoted to facilitating the procedures of the activity is coded as management. The two sub-divisions in these categories indicate the presence or absence of teacher criticism of the learner. Teacher criticism is coded as having negative affect when the criticism of the pupil seems to reject, demean or isolate the learner from the learning environment without opportunity to regain status. Absence of the negative affect, by definition, is coded as positive affect.   See examples below.

1. Manipulate Materials: Teacher handles materials without making direct referral to the materials in other teaching behavior. The manipulation of the materials takes the form of pre-arrangement, distribution , re-distribution, running machines and straightening up.   By definition, this behavior is always coded as management. It is distinguished from Demonstration by the lack of direct referral to the materials in the other teaching behavior at the time of the manipulation. This behavior often occurs concurrently without another behavior, but, by definition, is unrelated.

Instructional Mode		Management Mode	
[+]	[−]	[+]	[−]
Reaching for a piece of chalk while talking about the weather. Distributing materials silently. Arranging materials while engaging children in an introductory discussion of activity. Taking back materials while changing discussion topic.		Expressing generalized anger by banging or abrupt movements with materials and equipment, without any referent for this anger in child behavior.	

2. Give Directions: Teacher tells children what to do, either as part of the instructional activity or as part of the management procedures. This behavior is distinguished from Eliciting and Supply Information by the command form.

Instructional Mode

[+]
Telling a child what to do or say as part of the activity.
"Put your magnet next to each item in the box."
"Mix the flour and the water with the salt."
"Everybody draw a circle on the paper."

[-]
Command with an angry tone, or overt hostility or sarcasm.

Management Mode

[+]
Assigning the speaker or the next performer in the activity.
"Johnny, tell us...."
Procedural directions:
"Put your pencils away."
"Give me the extra crayons." "Open your books to page 31."

[-]
Critical tone:
"Do it right this time."
"Stop hitting him."
"Don't sit like a tired old lady."
"Be good like J...."

3. Supply Information: Teacher offers information verbally. This occurs as a teacher initiated communication or in response to a child's request for information. It is often accompanied by Demonstration (#4) with materials or gestures.

Instructional Mode

[+]
Telling a child the names of the days of the week. Labelling colors. Explaining how a magnet works. Describing an experience with floating and sinking. Reading printed material.

[-]
Critical intonation while correcting a child's response.

Management Mode

[+]
Telling the correct location for putting materials away.
"The blocks belong on the top shelf."
"After recess we will practice ...."
"You will have a turn after A...."

[-]
Critical intonation while communicating information on procedures and order of classroom and activities.

4. **Demonstrate/illustrate:** Teacher offers information non-verbally by gesture, head-nodding, pointing, body movement and manipulating materials. This behavior is distinguished from manipulate materials by the direct reference to what is occurring in the interaction between teacher and children. Parrallel behaviors are often <u>Supply Information or Give Direction.</u>

Instructional Mode		Management Mode	
⊞	⊟	⊞	⊟
Showing child how to hold scissors or pencil. Cutting open fruit to show what's inside while children watch. Showing how to fold paper in origami. Holding up a picture, pointing to parts and labelling them.	Using abrupt of angry movements while demonstrating-instructional informa-tion.	Pointing to a shelf telling child where to find crayons. Showing where to put musical instruments. Placing a chair in line to demonstrate positioning of chair.	Using abrupt or angry movements while demonstrating a procedure.

5. **Reinforce Objective:** Teacher responds to child's verbalization or action by offering descriptive feedback or response. The responses reflect back to the child what he has done or said in precise terms, establishing clearly what the response refers to in descriptive dimensions.

Instructional Mode		Management Mode	
⊞	⊟	⊞	⊟
"You made a big, round circle." "The letter P you made fills up the two spaces just right." "Right" (to child's ans-wer to a question.) Echo responses.	"That circle is jagged all around, and it's lopsided." in critical tone. "That answer is wrong/" Critical	You put all the big blocks toge-ther just right. You desk is very clean.	Critical tone: "Your desk has many books on it." "You're not sitting up straight."

5. Short Answer Question: Teacher questions children for recognition and recall. This behavior is distinguished from Elicit by the focus on facts, requiring a brief response. The questions usually focus on "What?" and "Who?".

Instructional Mode ⊞	Instructional Mode ⊟	Management Mode ⊞	Management Mode ⊟
"What is Today?" "What is the weather outside?" "Who discovered America?" "What time does the clock say when the hands are straight up?"	Having critical, or sarcastic tone.	"Who can answer this question?" "Who thinks they can do this problem?" "What do you do with your book when you are finished reading?" "Do you know what to do next?" "Did you do this?"	Tonal – criticcal, angry or sarcastic, belittling.

7. Elicit: Program activity: Teacher invites children to engage in conversation or work with materials. Invitation may take the form of encouragement, use of the universal "We" or asking open ended questions. THis behavior is distinguished from giving directions, by the stated or implied choice given the child to participate or observe or withdraw.

Instructional Mode ⊞	Instructional Mode ⊟	Management Mode ⊞	Management Mode ⊟
"See how many things you can find that match this color." "What did you do this weekend at home?" "What kinds of animals have you seen at the zoo?"		"How would you like to help your freind clean up?" "Why don't you collect the books?" "See what else you can do to help." "Tell us how you managed...."	

8. **Probe:** Cognitive extending through questions that encourage a child to find additional information, put information together in a different order, identify relationships, interpret experiences and perceptions. This behavior is frequently signaled by the use of "How?", "What else?", "What more...?" "Why..?" This category is distinguished from the <u>Elicit</u> category by the emphasis on having the children develop new ways of relating information, or extending what they know.

Instructional Mode

(+)
"How can you find out which objects will float?" "In what ways do these objects go together?" "What other things can you think of that will..." "Why do you think that happened?"

Management Mode

(+)
"How shall we schedule the day to include..." "What other ways can we set up for clean-up?" "Why do you think we are having such trouble in...?"

(-)

(-)

9. **Reinforce: subjective:** Teacher responds to children's verbalizations or actions with generalized praise or criticism without direct reference to what cause the pleasure or displeasure. Often this behavior communicates interest and enthusiasm in the child's work or conversation without specification of content.

Instructional Mode

(+)
Comments such as "Wonderful", "Beautiful" "Great", "Lovely work" "Nice job." referring to a verbal contribution or productions.

(-)
Harsh or critical tone in telling child the work or contribution is incorrect, insuffi- cient or unacceptable.

Management Mode

(+)
Same comments as noted in Instructional Mode, now used to refer to classroom procedures.

(-)
Harsh or critical tone...see Instruc- tional Mode.

10. Elicit: social: Teacher engages child in conversation about non-instructional items, apart from an organized instructional activity. Conversations of a personal-social nature usually take place during snack periods, arrival and departure and at some transition periods. By definition, these conversations and interactions are not part of the instructional activity, though are considered part of a teacher's teaching behavior. By definition, these behaviors are coded in the instructional mode. ONLY.

Instructional Mode		Management Mode	
⊕	⊟	⊞	⊟
"Where did you get your pretty new dress?" "How was that party you went to yesterday?" "Did the new baby come home yet?" "How would you like to help me fix my zipper?"			

11. Physical Contact: Teacher touches child, by placing hand or arm on a part of child's body. This may occur as an affectional communication, as part of an informational move, or as a management move. It often occurs parallel with another behavior but may occur in isolation.

Instructional Mode		Management Mode	
⊞	⊟	⊞	⊟
Teacher moves child's around the scissors into proper grip. Teacher guides child's hand in counting.	Abrupt or harsh movements, similar behaviors.	Touches child to signal his turn to talk. Holds child on lap during story.	Harsh or angry abrupt movements, signalling procedures.

12. Participate with Children: Teacher interacts with children as a member of the group. This occurs in activities where the teacher and children are making something as a joint project, such as making play-dough or cooking. This behavior is also noted when the teacher and children laugh together over a common experience.

Instructional Mode

[+]

Working silently
with children mixing
paints. Chatting
with children about
how the activity is
progressing.
Laughing together.
Playing board game
or musical game.

[-]

Management Mode

[+]

Working parallel
with children on
clean-up chores.

[-]

13. Non-Intervention: Teacher is present, viewing the children and not interacting for at least a 60 second interval. By definition, this behavior cannot be categorized as instructional or management.

PUPIL BEHAVIOR FORM (PBF)

Definition of Categories: Across the horizontal frame are three categories designating the focus of pupil involvement. Task Involved refers to pupil attention directed toward the teacher, teacher stimulus and the process of the instructional activity. Task unrelated refers to pupil attention directed to a stimulus other than the one provided by the teacher in the activity. Task resistant refers to pupil behavior in direct contradiction to the stated expectations of the learning activity.

Child Behavior	Task Involved	Task Unrelated	Task Resistant
Receiving: listening without verbal or non-verbal action.	Looking at the teacher or materials of instruction. Silent and inactive.	Looking away from teacher activity to another stimulus not a part of activity. Watching a classmate.	Silent inaction, refusing to talk or perform as requested by the teacher.
Producing language:	Answering questions or making verbal contributions.	Chatting with classmate; telling a child to move over, or discussing a toy brought from home.	Telling teacher "no" as a refusal to cooperate. Making nuisance noises.
Manipulating Materials: handling instructional materials	Handling activity materials as suggested or directed by teacher.	Handling materials not provided in activity or at the wrong time.	Handling materials in direct contradiction to stated expectations of the teacher.
Producing Action: moving about, total body movement.	Actions conforming with activity design.	Actions not related but not prohibited. Tying one's shoelace	Actions prohibited by the teacher.

PUPIL BEHAVIOR FORM (PBF)

Teacher_____   Recorder _____

Children _____   Date _____   Activity_____

Child Behavior	Task Involved	Task Unrelated	Task Resistant
Receiving: listening without talking or moving about.			
Producing Language			
Manipulating Materials			
Producing Action moving about			

NOTES

DATE 12/73 AGE/GRADE 5-6 yr.old Children 3   Teacher Trainee A

Activity Introduction and practice with   Recorder SES/team

new lotto games. Goal-Vocabulary expansion, foods of different cultures

Teacher Behavior	* Instructional Mode	- + Management Mode
1. Manipulate materials	14 ////////////////////////	3,9,9,18,18,21,34,54 76,86,140,146,141 145 7.4%
2. Give directions	4 5,36,48,105 2%	(6) 3,50,54,73,119,146 3.2%
3. Supply information	27 1,2,13,29,34,39,45,49,56 153 64,65,66,71,86,92,105,116, 131,125,127,130,135,138 142,143,151,159 14.3%	8,12,38
4. Demonstrate illustrate	20 2,9,34,37,45,51,56,66, 76,79,101,105,116,121,125, 132,172,149,151,154 10.6%	38
5. Reinforce: objective	23.8% 14,16,20,23,27,28,31 52 37,41,42,43,46,48,53, 55,57,60,62,69,72,74, 78,80,82,90,92,95,100,101,104 106,108,112,114,115,122,123 126,128,132,134,137,139,144 149,155	4
6. Short answer question	13%	7,11,26
7. Elicit: program activity	18 33,36,87,88,89,44,47 111,116,122,129,136,138 137,150,152,155,156 9.5%	6,17,19,22,13,43 35,38,41,52,57,58,59 61,63,67,73,71,77 81,84,93,99,101,147
8. Probe		
9. Reinforce: subjective	15,24,32,38,44,68,70,75, 83,71,98,101,108,113,113 115,124,140,148 10.1%	
10. Elicit: social		
11. Physical contact		
12. Participate with children		
13 Non-intervention		
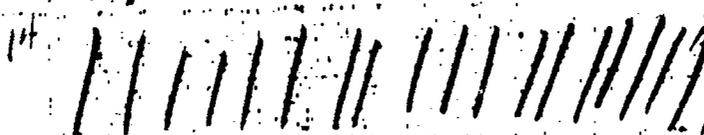
NOTES.

189 moves recorded
14 instances of 3/4 combined
A. Force: 83.9%

3 + 4 + 5 = 48.7% teacher input
6 + 7 + 8 = 23.3% solicit from children
Management = 14.8%

Appendix III (cont.)

PUPIL BEHAVIOR FORM   (PBF)

BEST COPY AVAILABLE

TEACHER. Trainee A   Recorder SLS
Children 3   Date 12/73   Activity Lotto game Foods

Child Behavior	Task Involved	Task Unrelated	Task Resistant
Receiving: listening without action	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 14, 15, 18, 19 **75%**		
Producing language	3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20 **80%**		
Manipulating materials	9, 12, 13, 14, 15, 17, 18 **30%**		
Producing Action: moving about			

Interesting to note that though the observer's impression is that children are continuously manipulating the materials, time sampling indicated that this behavior only occurs 30% of the time.

BIBLIOGRAPHY

Bellack, A.A. & Westbury, I.(Ed)Research Into Classroom Processes
New York, Teachers College Press, 1971.

Bentley, R.J., Washington, E.D., & Young, J.C.   "Judging the
Educational Progress of Young Children: Some Cautions"
Young Children, November, 1973.

Leonard, E.M., VanDeman, D.D. & Miles, L.E.   Foundations
of Learning in Childhood Education   Columbus, Ohio, Charles
E. Merrill Books, Inc., 1963.

Medley, D.M.   "Closing the Gap Between Research in Teacher
Effectiveness and the Teacher Education Curriculum"   Journal
of Research and Development in Education, Vol. 7, # 1, Fall,1973.

Robison, H.R. & Schwartz, S.L.   Learning At An Early Age, A
Programmed Test For Teachers   New York, Appleton-Century-Crofts,
1972.

Rosenshine, B   "Teaching Behavior Related to Pupil Achievement:
A Review of Research"   In Research Into Classroom Processes,
Edited by Bellack & Westbury, N.Y., Teachers College Press, 1971.

Rosenshine, B & Furst, N.   "Use of Direct Observation to Study
Teaching"   In Second Handbook of Research on Teaching, Edited
by Travers, R.M. , Chicago, Rand McNally Publishing Co, 1973.

Simon, A & Boyer, G.E. (Eds) Mirrors for Behavior: An anthology
of classroom observation instruments   Philadelphia, Research
for Better Schools, Inc., 1967