DOCUMENT RESUME

ABSTRACT
          The parent training component of early childhood
intervention programs was examined with four handicapped children (26
to 29 months old) and their mothers. Antecendent and contingent
modeling, two procedures that parents are commonly trained to use
with their handicapped children, were investigated. Each modeling
procedure was effective in teaching children; however, quantitatively
and qualitatively distinct interactions between parent and child were
generated by each procedure. It was concluded that educators must be
concerned with the effects of teaching procedures on the interactions
between the parent and child. (Author/IM)

Implications for Training Parents:

Measuring and Evaluating

Child Inter

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Regional Inte

2

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3

Abstract[1]

Parent training components are now recognized to be a vital aspect of innovative early childhood intervention programs. A study conducted at the Regional Intervention Program[2], a parent implemented program in Nashville, Tennessee, is presented. Antecedent and Contingent Modeling, two procedures that parents are commonly trained to use with their handicapped children were investigated. Each modeling procedure was effective in teaching children. However, Antecedent and Contingent Modeling generated quantitatively and qualitatively distinct interactions between parent and child. The system used to collect data on the parent-child interaction during training is described with suggestions for coding and interpreting interaction data. Although teaching procedures may be very similar and equally effective, they can generate clearly distinguishable parent-child interactions. The authors argue that the nature of the interaction that occurs between parent and child is a factor that parent trainers must not overlook.

4

Implications for Training Parents:

Measuring and Evaluating Parent-

Child Interactions

Parents and teachers are confronted daily with the task of teaching young handicapped children. One parent, usually the mother, is the principal person with whom the young child interacts. Consequently, the child's major learning experiences are directly related to the way the mother structures the environment and inter- acts with her child within that environment. In the past "maternal instinct" guided the strategies mother used to train her handicapped child. Training strategies based on "maternal instinct" or past child-rearing experiences are no longer considered sufficient. Today there are many early childhood intervention programs available throughout the country whose purpose is to augment, enrich and specify the child's early learning experiences in a systematic, accountable manner. In progressive special education programs for young children the establishment of effective classroom programs is not the only goal.

In recognition of the tremendous impact parents have on their child's growth and development (Johnson & Katz, 1972, and O'Dell, 1974) many intervention programs have begun to emphasize the impor- tance of an organized parent training component (Feldman, Byalick & Rosedale, 1975: Flint, 1975; Kelly, 1973; and O'Connell, 1975). Often a child's parents is actively involved in his her child's

5

performance at the intervention center (Wiegerink & Parrish, 1974).

That parent is trained to implement specific teaching tactics to

use with his child during training sessions. Generally, the teach-

ing tactics that parents are taught include modeling and imitation

procedures. Training parents to use these procedures appears to be

appropriate in light of the fact that the effectiveness of modeling

procedures in teaching a wide variety of behaviors is well documented

(Baer, Peterson, & Sherman, 1967; Brown & Sontag, 1972; Jobes, 1975;

and Shumaker & Sherman, 1970).

Unfortunately, the differences that exist among various model-

ing procedures are not always recognized or considered when training

parents. Recently researchers have addressed themselves to document-

ing the differences between modeling procedures that are currently

popular among teachers (Hester & Hendrickson, 1975). Two modeling

procedures, Antecedent Modeling and Contingent Modeling, have been

identified as basic modeling tactics predominantly used to train

handicapped preschoolers. Both modeling procedures are very similar--

each uses a question, a modeled response, and reinforcement for cor-

rects. In the Antecedent Modeling procedure the child is told

(modeled) the correct word (response) immediately after he is asked

a question and before he makes a response. Thus, the model is pre-

sented before the child has an opportunity to answer. In the Con-

tingent Modeling procedure the child is asked a question and given

a specified amount of time to answer (3-5 seconds). If he errs,

6

the trainer turns his head away for three seconds, in essence,
"ignores" the child. The trainer then presents the questions again,
but this time models the correct response immediately. The child is
reinforced for all correct responses in each procedure. Typically,
Antecedent Modeling and Contingent Modeling resulted in the children
acquiring and maintaining the targeted behaviors. For this reason,
parent-trainers, knowing the relatively equal effectiveness of both
modeling procedures, may indiscriminately select either modeling
procedure for parents to learn. In short, the major criterion for
selecting procedures to train parents to use with their handicapped
children has been the effect that that procedure has on the child's
performance.

Recently, researchers have stressed the need to consider the
reciprocal effects of interaction between children when planning
educational strategies (Strain & Shores, in press). Hester and
Hendrickson (1975) suggested that the selection of educational pro-
cedures should include an evaluation of the interaction between parent
and child that different procedures generate. They noted that this
may be particularly important when the effectiveness of two pro-
cedures is relatively equivalent. In such cases differences in the
nature of the interaction between the parent and child may not be
immediately apparent. To examine parent-child interactions when
using similar modeling procedures the authors conducted a study which
investigated Antecedent Modeling and Contingent Modeling. The

7

purpose of the study was to document the interactions that occurred
between mother and child using each modeling procedure.

The Antecedent-Contingent Modeling Study was conducted at the
Regional Intervention Program, a parent implemented program for
young handicapped children in Nashville, Tennessee. Children in
this program exhibit a variety of disabilities ranging from severe
developmental delays to mild behavior disorders. A single subject
multiple baseline design with across subject replication was used.
Mothers who had no previous training in special education were taught
to use Antecedent and Contingent Modeling procedures. Four chil-
dren, ages 26 months to 29 months, were taught to label 20 picture
cards previously unknown to them. Data was collected daily during
training on the interaction between mother and child to determine
whether Antecedent Modeling and Contingent Modeling were really
equally appropriate for mothers to use.

The data collection system used to measure mother-child inter-
actions was a reliable, easy to learn system. A sample data collec-
tion sheet is shown in Figure 1. The parent and child's behaviors

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Insert Figure 1 about here

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are recorded (by number) in the order of their occurrence. The
Antecedent Event (marked AE) indicates the type of parent presenta-
tion, the Movement Cycle (MC) denotes the child's response, and the

Subsequent Event (SE) pinpoints those parent behaviors which follow
the child's response. Trial 1 in Figure 1 is an example of a typical
trial during Antecedent Modeling. The parent asks a question,
marked 1, and models the correct response, 2. The child responds
correctly, 3, and is praised by the parent, marked 4. Trial 2 is an
example of the Contingent Modeling procedure. The parent asks a
question, 1, which is followed by an incorrect response by the child,
2. The subsequent event, ignoring, is marked 3, followed by a ques-
tion and model from the parent, 4 and 5. The child then responds
correctly, 6, and is praised.

To facilitate interpretation of interaction data, the frequency
of specific response patterns under each procedure was graphed.
These response patterns were the sequences of mother-child inter-
active behaviors surrounding both the correct and incorrect responses
of the child. The mother-child response patterns during training
sessions for one of the subjects are presented in part in Figure 2.

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Insert Figure 2 about here

_____

The Antecedent Modeling procedure typically generated two re-
sponse patterns, one sequence when the child was correct and another
sequence when the child made an error. Most often the sequence of
"Question/Model/Correct/Praise" occurred when the child's response
was correct. The frequency of "Question/Model/Correct/Praise" was

tallied each day from the previously described data collection
sheets and is presented in Figure 2. In Figure 2 the correct
sequence of interactive behaviors is represented with a triangle,
(△). The Antecedent Modeling error sequence of "Question/Model/
Error" is represented by a solid triangle, (▲).

The Contingent Modeling procedure also generated two different
mother-child interaction sequences for correct and error responses.
In Figure 2 the Contingent Modeling sequence of "Question/Correct/
Praise" is represented by a solid dot, (∙). The Contingent Model-
ing sequence of "Question/Error/Ignore" is represented by the open
circle, (o).

The results of the Antecedent-Contingent Modeling study docu-
mented qualitatively and quantitatively different mother-child inter-
actions. Two very distinct patterns of interaction between mother
and child were observed. Antecedent Modeling generated a high fre-
quency of correct responses by the child each day of training. This
high frequency of correct responses by the child resulted in the
parent delivering an equally high frequency of positive reinforce-
ment to the child. Thus, their interaction was based on positive
exchange and was mutually rewarding. On the other hand, Contingent
Modeling initially generated a very high frequency of errors. Em-
bedded in this error sequence was the teacher's behavior of "ignoring."
Consequently, during Contingent Modeling when the initial frequency

of errors was high, mother often ignored the child. This high fre-
quency of ignoring the child resulted in a qualitatively different
interaction, decidedly more negative, than the interaction genera-
ted by Antecedent Modeling procedure. During Antecedent Modeling
mother praised and reinforced the child frequently for his high rate
of correct responses. Thus, a mutually positive interaction was es-
tablished.

To further underscore the importance of interaction data the
investigators asked the mothers at the Regional Intervention Program
their opinions of the two modeling procedures. Their answers pin-
pointed salient differences. Both of the parents who served as
trainers stated that the Antecedent Modeling procedure was more
appropriate for teaching expressive language to these young children.
One mother very articulately expressed these feelings, "I preferred
the (Antecedent) modeling procedure, particularly for handicapped
children. It was a more positive approach. The children were not
subjected to the aversive consequence of being ignored as they were
during contingent modeling, even after sometimes trying to answer.
In the (Antecedent) modeling procedure the child knew exactly what
was expected of him. A handicapped child experiences many frustra-
tions; therefore, the (Antecedent) modeling technique seemed to be
the better approach."

Most educators would agree that the learning process should be
an enjoyable experience for both the mother and the young child.

11

This may be particularly important when training children who probably have received more attention for their disabilities than their abilities. The views of the mothers in this study reflected the same philosophy. They preferred the Antecedent Modeling procedure because the child "was reinforced each time he imitated the word which meant that the teaching session was more fun. The mother and child should be having fun and building their relationship."

Thus, the interaction data from this study documented the need to look beyond child performance when selecting training procedures that parents may use. It seems clear that quantitatively and qualitatively different interactions, ranging from very negative to very positive, are generated by the different teaching procedures. Such quantitative and qualitative differences must be considered when training parents. Training parents of handicapped children to use "negative" procedures when more "positive" alternatives are available may be warranted in certain instances. It appears that any and all decisions regarding the selection of educational training strategies should not overlook the importance of the parent-child interaction.

In summary, it is not the intent of this paper to advocate the use of a particular modeling procedure, e.g., Antecedent versus Contingent Modeling. Rather, our purpose is to advocate that parent trainers be cognizant of the fact that 1) teaching procedures that may appear very similar can generate very different interactions

between parent and child, and 2) objective interaction data should
be a part of the criterion measure used for the selection of pro-
cedures to train parents. Educators must not narrow their concern
to the effectiveness of specific procedures on child performance to
the exclusion of how those procedures affect the interactions
between the parent and the child.

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Footnotes

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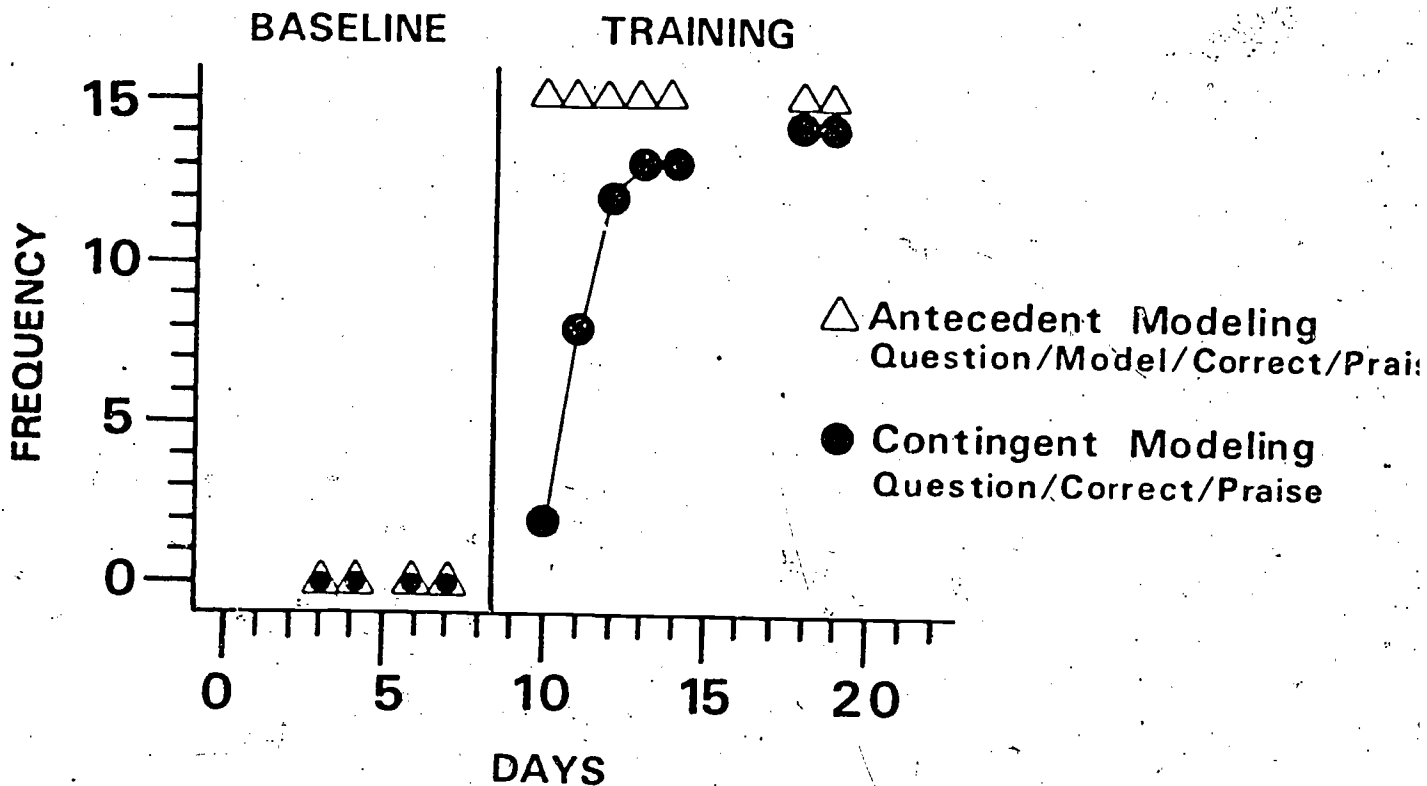
[2]The authors wish to express their gratitude to Janet Christianson, Paula Eller, Ann Reynolds and Carolyn Schmidt, mothers who participated in the study, and Allison Parish for her invaluable assistance in the development of various audio-visual products. Special acknowledgement is due to Dr. Richard Shores for consultation and personal support throughout the study and during the preparation of this manuscript.

Figure Captions

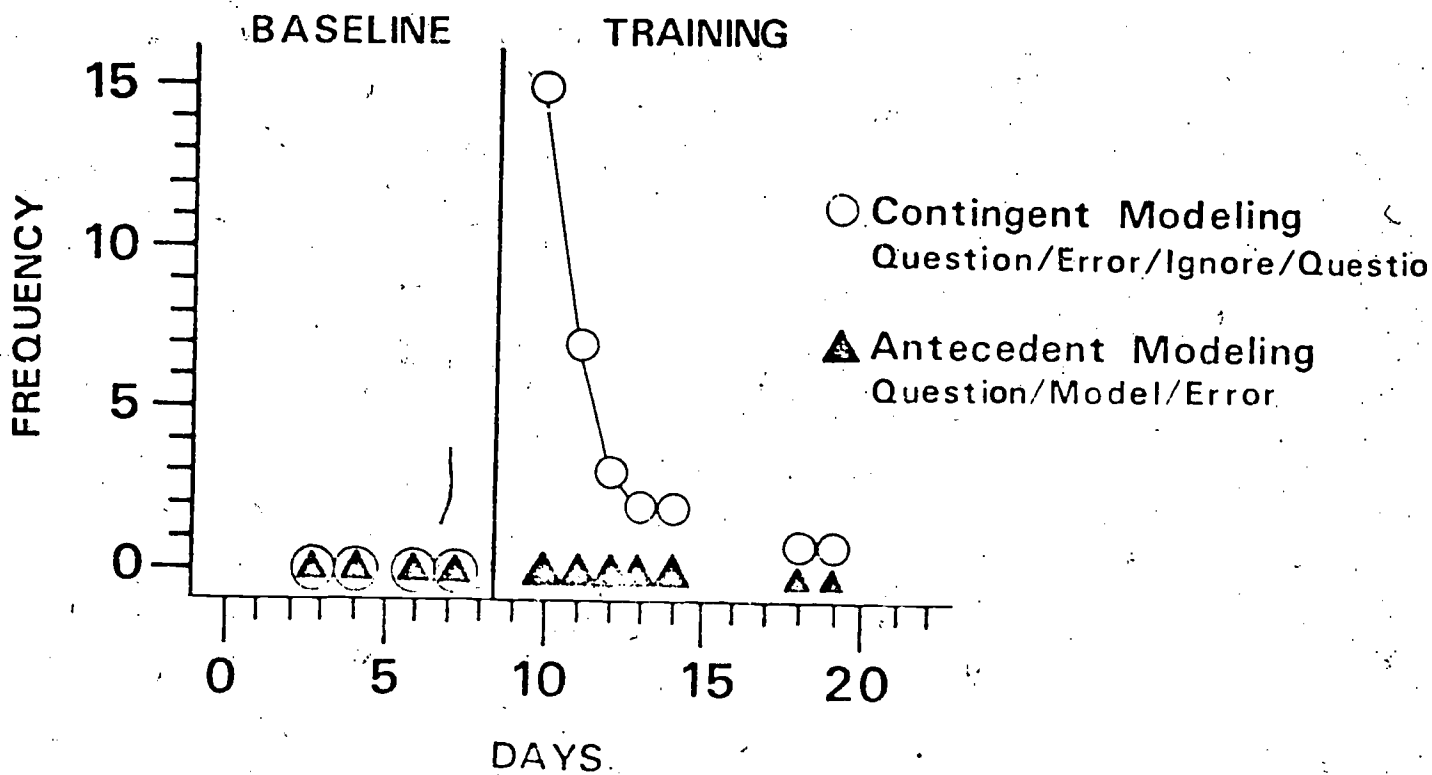Figure 1. Sample interaction data sheet: Typical sequences of events which occur during training sessions utilizing Antecedent Modeling and Contingent Modeling procedures.

Figure 2. The daily frequency of correct event sequences (top graph) and error event sequences (bottom graph) for one representative subject during training utilizing Antecedent Modeling and Contingent Modeling procedures.

17

Correct Event Sequence

BASELINE   TRAINING

FREQUENCY

15
10
5
0

△ Antecedent Modeling
Question/Model/Correct/Prai:

● Contingent Modeling
Question/Correct/Praise

0   5   10   15   20

DAYS

Error Event Sequence

BASELINE   TRAINING

FREQUENCY

15
10
5
0

○ Contingent Modeling
Question/Error/Ignore/Questio

▲ Antecedent Modeling
Question/Model/Error

0   5   10   15   20

DAYS

ANTECEDENT EVENT	MOVEMENT CYCLE	SUBSEQUENT EVENT
Q: question	C:correct	P: praise
M: model	E:error	I : ignore
O: other	O:other	M: model
		O: other

Trial I.

A E   M C   S E

Q ____   C ____   P ____

M ____   E ____   I ____

O ____   O ____   M ____

                       O ____

Antecedent Modeling

Trial II.

Q ____   C ____   P ____

M ____   E ____   I ____

O ____   O ____   M ____

                       O ____

C tingent Modeling