

THE GENERALIZATION OF THE EFFECTS OF
EXPERIMENTAL TEACHER TRAINING

by

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Chapter 1

INTRODUCTION

Along with the increasing importance being placed on early childhood education has come a greater emphasis on the preparation and training of preschool teachers. As in teacher education for all grade levels, more effective methods and techniques are being sought in order to prepare future preschool educators. Because of the apparently simple and direct relationship between the behavior of the teacher and the behavior of the students, the behavior analysis approach and its educational applications are being incorporated into many teacher-education programs.

A wide range of children's behavior has been used to demonstrate the effectiveness of contingent teacher attention (adult social reinforcement) in the modification, maintenance, and strengthening of children's behavior. In a number of recent studies, the systematic application of contingent teacher attention has been found to be an effective technique in general classroom behavior management (Hall, et al., 1968b; Thomas, et al., 1968) as well as increasing desirable behaviors while decreasing the undesirable behaviors of an individual child (Zimmerman, 1962; Allen, et al., 1964; Allen, et al., 1967; Becker, et al., 1967; Briskin and Gardner, 1968). Although this research supports the relationship

between the teachers' behavior and the behavior of their students, the reports have dealt separately with the systematic modification of the behavior of an entire class and the behavior of individual children.

Relatively little study has been made of the generalization to the rest of the class of the effect of training the teacher to systematically apply contingent attention to a specific child. If this generalization can be demonstrated, it could logically lead to more precise classroom management training programs in which the teacher is trained to use reinforcement principles with one child so as to increase her effectiveness with the entire class.

It was the purpose of this study to determine if a preschool student-teacher who was given instructions and feedback on her systematic application of teacher attention with a specific child would generalize and maintain the use of this technique with the other children in her preschool class.

The hypothesis of this study was: A teacher who is given training to increase the frequency of her positive attending behavior to a specific child will generalize the effects of this training to the other children in her class.

Chapter 2

RELATED LITERATURE

In the development of specific and precise teacher-training procedures, basic and applied educational research efforts have been directed to the investigation and evaluation of the principles and components operative in effective classroom interaction (Hall, et al., 1968b; Wilde and Randolph, 1973). A major focal point in this research has been guidance practices, or more precisely, classroom behavior management techniques. The rationale has been: To provide students with an optimum learning environment, the teacher must eliminate, or at least minimize, disruptive behavior patterns which are incompatible with effective classroom functioning and, at the same time, enhance or develop those appropriate behavior repetoires which are conducive to efficient learning (Hanley, 1970).

Although teachers traditionally have been viewed as one of the primary modifiers of children's social and academic behavior (Allman and Linton, 1971), only recently has behavior analysis research attempted to operationalize the function of the teacher's behavior and its relationship to children's classroom behavior. The application of the operant theory principles and systematic analysis of classroom behavior have identified teacher attention as the basic social reinforcement component in classroom behavior management (Harris, et al., 1964; Madsen,

et al., 1968; Fagot, 1973).

There are basic theoretical grounds for assuming that attention will be the most pervasive and primitive form of social reinforcer operative in the social interactions of children (Baer and Wolf, 1968, p. 117).

The relevance of this principle is of particular importance for the preschool teacher. The competing influence of peer reinforcement has not yet fully developed for the young child, leaving the teacher as the strongest, if not the sole, impetus for behavior change. From these behavioral studies two principles governing the effective application of teacher attention in classroom behavior management have been identified:

1. Teacher attention is applicable reinforcement for a variety of children's behaviors.
2. The contingent relationship between the teacher attention and the immediate child behavior upon which it is consequent will determine the behavior change.

Early research efforts centered around the reduction or elimination of an individual child's singularly disruptive behavior. Dramatic decreases in regressive crawling (Harris, et al., 1964), hyperactivity (Allen, et al., 1967), tantrum behavior (Zimmerman and Zimmerman, 1962), and isolate play (Allen, et al., 1964), were achieved by withholding teacher's attention consequent to the emission of the problem behavior. The common hypothesis throughout these studies was that teacher attention had been previously reinforcing the child's undesirable behavior. The teachers were forced to spend a disproportionate amount of time attending to the child's disruptive behavior which in itself may have strengthened

the inappropriate behavior. The removal of the source of reinforcement, teacher attention, for these disruptive behaviors resulted in their extinction.

As the techniques of systematically applying the teacher's attending behavior developed greater sophistication, wider classes of individual children's behavior became the targets for modification. The broader categories of inappropriate behavior (Briskin and Gardner, 1968), non-study behavior (Hall, et al., 1968b), and disruptive classroom behavior (Becker, et al., 1967), were all demonstrated to be subject to the control of teacher attention. Becker, et al. (1967) defined disruptive behavior as those behaviors apparently incompatible with good classroom learning conditions. These included hopping, skipping, kicking, throwing books and other objects, crying, screaming, calling out children's names to get attention, hitting, pushing, pinching, grabbing objects from other children, and destroying another's property. The identification of desirable behaviors which were incompatible with the emission of these disruptive behavior patterns and the systematic application of teacher's attending behavior were combined to not only eliminate the inappropriate behaviors but also simultaneously increase these appropriate classroom behaviors.

Previous studies in classroom behavior management centered around the modification of the behaviors of a single class member. While reinforcement principles had proved to be effective, the technique was believed to be inefficient in terms of regular classroom operation. It was assumed that calling upon the teacher to continually monitor and reinforce the behavior of one child would severely restrict her interactions with the other members of her class. In an

attempt to circumvent this limitation, more research efforts have begun to develop procedures to investigate the effects of teacher attention in controlling the classroom (Hall, et al., 1968b; Thomas, 1968).

Utilizing this expanded classroom focus, Thomas, et al. (1968) researched the differential effects of teacher positive and negative attending behaviors in an elementary classroom of 28 children. Teacher positive attending behavior was defined as the general class of approving behaviors including the subclasses of: (1) physical (embracing, kissing, patting, and holding the child); (2) verbal (stating approval, affection or praise); and (3) nonverbal (smiling, winking or nodding at the child). Teacher negative attending behavior was defined as the general class of disapproving behavior including the three subclasses of (1) physical (pushing, spanking, shaking, slapping, and forcibly holding the child); (2) verbal (yelling, scolding, raising voice, and threatening the child with loss of privilege); and (3) nonverbal (frowning, grimacing, and side-to-side head shaking).

While the attending behaviors of the teacher were systematically varied, the frequency of the children's disruptive classroom behavior was recorded. Following the total withholding of teacher's positive attending behavior, the frequency of children's disruptive behavior increased from 8.7 percent to 25.5 percent for the number of intervals observed. When the condition of frequent teacher positive attending behavior was reintroduced the frequency of children's disruptive behaviors dropped to an average of 12.9 percent. During the condition when teacher positive attending behavior was withheld, but teacher negative attending behavior was increased, children's disruptive behavior increased to an average of 31.2

percent.

These results imply that teacher's positive attending behaviors had served a positive reinforcing function by maintaining low levels of disruptive classroom behaviors. In addition, some behavioral consequences that were regarded by the teacher as punishing (i.e., negative attending behaviors) may, in fact, have been positive reinforcers for the behaviors they were intending to eliminate.

The purpose of this study was to investigate the effects of training a teacher to increase the frequency of her contingent positive attending behaviors. It was necessary to modify and expand the behavioral definitions of teacher attending behaviors as devised by Thomas, et al. (1968) for application in a preschool classroom.

A cautionary note must be added to the systematic application of teacher attending behavior as a technique in classroom behavior management. In a comparison of the effects of positive teacher attending behavior in "natural" and experimentally manipulated contingencies, Scott, et al. (1967) demonstrated the necessity for positive attending behavior to be immediately and consistently contingent upon the behavior that had been selected to be increased or strengthened.

Regardless of the teacher's intent, the behavior-changing function of her responsiveness lies in its stimulus function for the children, not for her (Baer and Wolf, 1968, p. 120).

Hart, et al. (1968) confirmed the importance of this contingent relationship by comparing the separate roles of frequent attention and contingent attention in the modification of the social behavior of a preschool child. The data verified that behavioral changes were less a function of the quantity of teacher's positive

attending behaviors than they were a function of the teacher attention made contingent upon the desirable behavior.

These studies indicate that it is the temporal relationship and not the frequency of teacher positive attending behaviors which is the critical factor in behavior change. Regardless of the teacher's intent, behavior which is immediately followed by the positive consequence of teacher's attention will be strengthened. Training programs in classroom behavior management must assist teachers in the identification of children's appropriate classroom behavior and the application of positive attending behavior contingent upon only those behaviors.

The incorporation of contingent teacher attention into effective classroom application depends heavily on the teacher's ability to utilize these principles. Teacher-training procedures must transform theoretical assumptions and empirical findings into specific techniques that can be directly applied to classroom behavior management. Such training programs have been shown to be effective for preschool (Cooper, et al., 1970), elementary (Hall, et al., 1968), and secondary (Wilde and Randolph, 1973) teachers.

Teachers without previous experience with operant theory of the application of contingencies were able to achieve improved classroom control by increasing the frequency of their positive attending behavior after short-term training programs. The generality of the success of teacher-training was not limited by the amount of previous teaching experience. Hall, et al. (1968b) and Wilde, et al. (1973) demonstrated success of the training programs with both first-year and student-teachers, respectively.

Three basic elements were common to the training programs used by Hall, et al. (1968b) and Wilde, et al. (1973): (1) presenting the teacher with basic principles of reinforcement, (2) instructing the teacher to increase her positive attending behaviors, and (3) giving daily feedback reports of the teacher's attending behavior frequency.

It has been argued that the reporting of daily frequency feedback and not the understanding of reinforcement principles is the critical factor of teacher training. Cooper, et al. (1970) achieved increased *contingent* teacher positive attending behavior without providing specific training in reinforcement principles. Since a component analysis of teacher training was beyond the scope of the study, the answer to this argument must be subject to future research. The present method of training under investigation incorporated the three training components listed above.

Two methodologies in teacher-training programs can be identified in behavior analysis research:

1. Procedures focusing the teacher attention on the behaviors of a single target child (Becker, et al., 1967; Hall, et al., 1968a; Briskin and Gardner, 1968);
2. Procedures focusing the teacher attention of the behaviors of all the class members (Hall, et al., 1968b; Cooper, et al., 1970; Wilde and Randolph, 1973).

It was the assumption of the author that the two teacher-training methodologies were in actuality overlapping and parallel means to the same goal--the improvement

of teacher's classroom management techniques. Presently, there exist only indirect and highly tentative evidence to support this assumption.

While it was suggested that training a teacher in attending to a single target child would limit her effectiveness with the non-target children in her classroom (Harris, et al., 1964), Ward and Baker (1968) found no support for this argument. The behavior of the other children in the class did not deteriorate when the teacher's attention was diverted from them in attending to the behavior of a specific target child. Training teachers in behavioral principles did not increase the amount of attending to the target child, but, the proportion of teacher's attending behaviors that was contingent upon the target child's appropriate behavior did significantly increase. Training did not significantly decrease the frequency of her attending behaviors to the other children in her class.

Hall, et al. (1968a) and Madsen, et al. (1963) reported that teachers, trained on a target child, were able to utilize systematic attention to increase the appropriate behavior of other pupils in their class. Since these accounts were based on the subjective reports of the teachers, no corroborative data were available to verify any conclusion.

The purpose of this project was to investigate the degree to which teacher training focused on a specific child would generalize to other children in the teacher's class. It was hypothesized that the teacher would be able to transfer the effects of this training to her interactions with all the class members.

Chapter 3

METHOD

SUBJECTS

Target Teacher

An undergraduate female student teacher in the morning session of the Child Development Laboratory at Kansas State University during the fall semester 1974 agreed to participate in the study as the target teacher (Appendix A). She was in her senior semester of undergraduate education in the Early Childhood Education curriculum. The target teacher was in the eighth week of her student teaching experience and had had no previous experience in applied behavior analysis techniques at the onset of the study.

Children

Parental permission was obtained for all of the 16 children enrolled in the Child Development Laboratory morning class to serve as observational subjects (Appendix B). These children (8 boys and 8 girls) ranged in age from 3 to 5 years, with the mean age of 4 years 1 month. The children represented multi-racial and multi-ethnic backgrounds.

The names of the 16 children were placed in a hopper from which the

name of one child was randomly selected to serve as the target child. The target subject was a 3 year and 8 month old male with no extreme behavior problems or observable limiting handicaps.

All of the remaining 15 children were assigned to the generalization group (EG).

OBSERVATIONAL PROCEDURES

Prior to the data collection, two independent observers were trained in the observational procedures within the Child Development Laboratory (CDL) pre-school classroom. Due to the observational function of the CDL preschool, the children were already accustomed to observers being present. Reliability checks on the behavior-recording categories of the teacher and child behaviors were made during the training period.

The observers were trained to time sample teacher and child behaviors. Observations were recorded in 120 15-second intervals for the 30 minute observation period. To insure synchronization, each observer was given an earphone to a cassette tape recorder which emitted an auditory signal every 15 seconds. The baseline data collection was begun after 85 percent observer agreement was achieved.

Observer 1 monitored and recorded the behaviors of the target teacher and the child behavior that had immediately preceded it, noting whether the child was the target child or a member of the generalization group. Observer 2 recorded the behavior of the target child and any contingent teacher attending

behavior, noting whether the teacher was the target teacher or another teacher. Observational assignments of the observers were randomly assigned before the first day of the baseline condition. The observers were not informed of the changes in the experimental condition.

Daily observations were recorded on a behavior check sheet. The columns of the check sheet were coded for the behaviors of the child being observed and the classes of contingent teacher attending behavior. The rows of the check sheet designated the 120 observation intervals (Appendix C).

The observers made entries for each observation interval by checking the appropriate code-cell for teacher attending behavior, child behavior, and whether it was the target child and/or the target teacher. Thus, all behavior measures were records of the number of intervals coded rather than a count of the number of discrete responses.

DEFINITION OF TEACHER BEHAVIOR

All behaviors of the teacher were defined as belonging to three general classes: (1) Positive Attending Behaviors, (2) Negative Attending Behaviors, and (3) Other Behaviors. The behavioral definitions were modifications for application in a preschool classroom of the classes of teacher behaviors as described by Thomas, et al.(1968).

The general class of teacher Positive Attending Behavior included the subclasses of Physical, Verbal, and Nonverbal. The Positive Physical Attending Behavior subclass included hugging, patting, holding, touching, or kissing the

child. The Verbal subclass included stating approval, stating affection, praising the child, offering assistance to the child, and responding to a child's question. The Nonverbal subclass included smiling, moving closer to the child, nodding head in approval, and expressing facial approval.

The general class of teacher's Negative Attending Behavior included the subclasses of Physical, Verbal, and Nonverbal Attending Behaviors. The Negative Physical subclass included forcibly restraining the child, shaking the child, pushing the child into position, and removing the child from the room. The Verbal subclass included raising voice to give a command, scolding the child, threatening the child with loss of privileges or punishment, and removing a choice of behaviors. The Nonverbal subclass included turning away from the child, frowning, shaking head from side-to-side in disapproval, and ignoring the child.

The general class of Other Behaviors included only those behaviors which excluded the teacher from child contact, such as leaving the room.

DEFINITION OF CHILDREN BEHAVIORS

All behaviors emitted by the children were defined as belonging to two classes: Inappropriate and Appropriate Behaviors. Inappropriate Behavior was coded if the child was observed hitting, biting, spitting, kicking, crying, fighting, grabbing a toy away from another child, knocking over toys of the other children, throwing toys, yelling, running while indoors, disrupting classroom activities, calling the children names, stomping feet, pushing children, throwing self on floor, and refusing to follow a direction of the teacher. Appropriate Behavior was coded

if no Inappropriate Behavior was observed during the 15-second observation interval.

INTER-OBSERVER RELIABILITY

Intermittently, and at least once in each condition, the researcher made simultaneous observations with each of the observers. Inter-observer reliability was computed as the percentage of interval by interval observer correspondence. The percentage of agreement was computed as $[\text{number of agreements} \times 100 \div (\text{number of agreements} + \text{number of disagreements})]$. The mean percentage of agreement was 93.3 percent and 91 percent for Observer 1 and Observer 2, respectively.

Daily reliability rates were made by comparing the correspondence of the overlapping observations made by the two primary observers when the target teacher was attending to the target child. The mean daily agreement was 89 percent.

EXPERIMENTAL CONDITIONS

Baseline Condition

Due to the class schedule of the target teacher, observations were confined to the four days of each school week that she was present in the preschool class. During the 10-day Baseline Condition the behaviors of the target child, target teacher, and the generalization group were recorded. No attempt was made to manipulate teacher behavior. To insure maximum teacher-child interaction, the 30-minute observation periods were scheduled during the less structured period

of self-selected activities.

Training Condition

During the two-week experimental condition, the independent variable, teacher training, was introduced. The teacher training contained three parts:

1. Presenting the teacher with basic principles of reinforcement
2. Instructing the teacher to increase her Positive Attending Behavior to the target child's Appropriate Behaviors
3. Giving daily feedback reports of the teacher's Positive Attending Behaviors contingent upon the Appropriate Behaviors of the target child.

The instructional seminar was held with the target teacher before the first observation of the Training Condition. Utilizing the procedure described by Hall, et al. (1968b), the experimenter and the teacher discussed: (1) basic behavioral definitions of teacher and child behaviors, (2) reinforcement principles of positive reinforcement and extinction, and (3) procedural guidelines for applying the systematic application of contingent teacher attending behaviors. The teacher was shown the baseline graphs of the target child's behavior and her Positive Attending Behaviors to the target child's Appropriate Behaviors. She was requested to increase the rate of her Positive Attending Behaviors contingent upon the target child's Appropriate Behavior.

Following each daily observation the teacher was shown only the graphs of the Appropriate and Inappropriate Behaviors of the target child and her contingent Positive Attending Behaviors to the target child's Appropriate Behaviors.

Although not reported to the teacher, the observers continued to record the behaviors of the generalization group members to which the teacher was attending and the contingent teacher Attending Behaviors to these children. These observations were used to measure the dependent variable, the generalization of the effects of the experimental teacher-training program. The generalization of teacher-training was defined as an increase in the number of observation intervals coded as teacher Positive Attending Behavior that were contingent upon the Appropriate Behavior of the members of the generalization group.

Extinction Condition

At the end of the Training Condition, the reporting of daily feedback to the teacher was eliminated for the 10-day extinction period.

Chapter 4

RESULTS

ATTENDING TO APPROPRIATE BEHAVIORS

The direct effects of the experimental teacher-training procedure were measured in the rate of teacher's Attending Behaviors to the target child. Figure 1 shows the rate of teacher's Total Positive Attending Behaviors which were contingent upon the target child's Appropriate Behavior during the Baseline, Training and Extinction Conditions. The teacher's Total Positive Attending Behavior rate was the combined daily totals of intervals scored as teacher's Positive Physical, Positive Verbal and Positive Nonverbal Attending Behaviors.

The teacher's Total Positive Attending rate during the nine days of the Baseline Condition averaged only 9.2 intervals. During the period of training aimed at increasing the frequency of the teacher's contingent Positive Attending Behavior, the mean number of Total Positive Attending rose to 14.9. Following the withdrawal of daily training feedback, the mean rate of contingent Positive Attending Behavior decreased to 12.7. These means are summarized by conditions in Table 1.

The results of the analysis of the subclasses of teacher's Attending Behaviors are presented in Table 2. Due to their low incidence, Positive Physical and Negative Physical subclasses were excluded from this analysis. During the

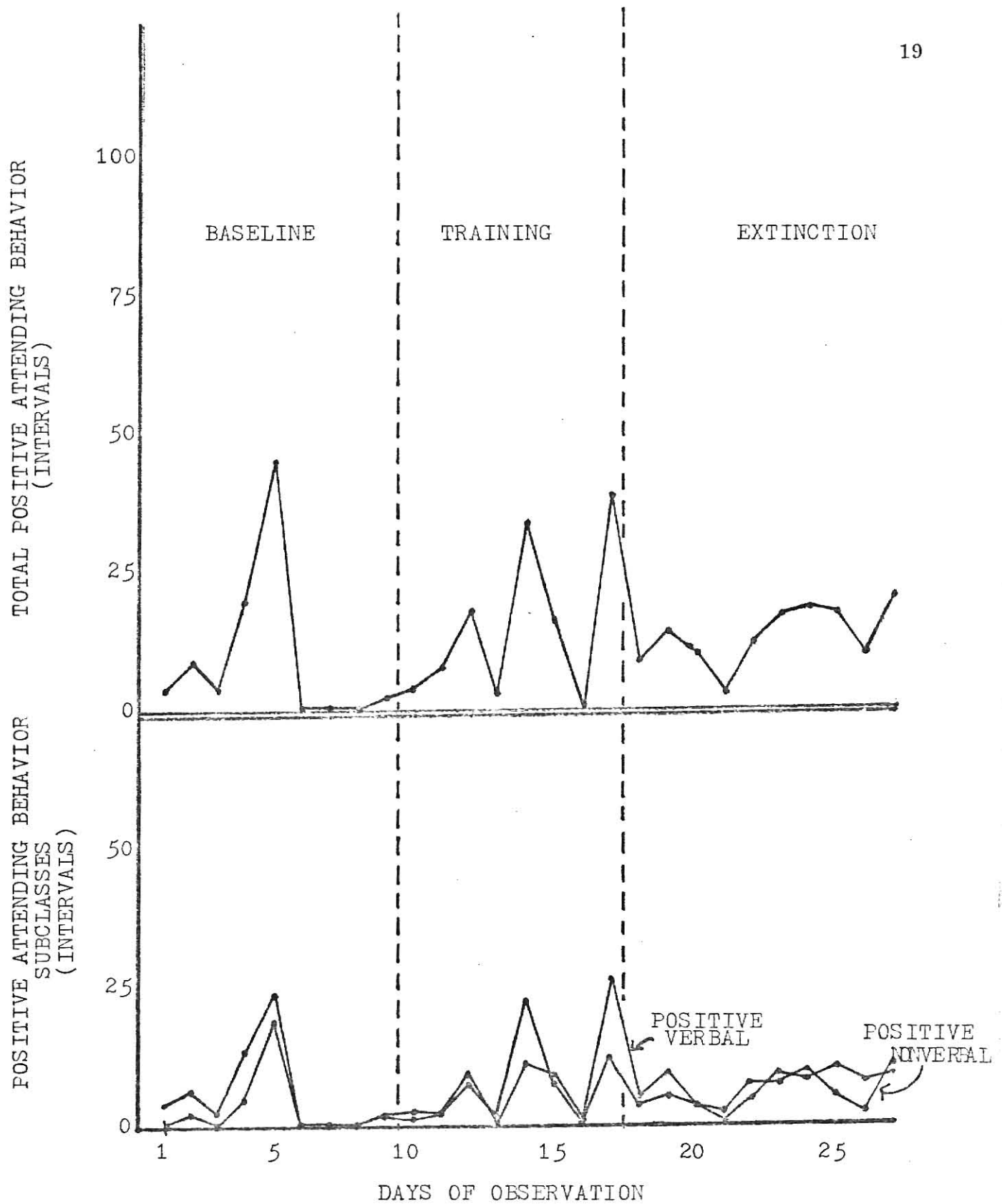


FIGURE 1

TEACHER POSITIVE ATTENDING BEHAVIOR TO
TARGET CHILD'S APPROPRIATE BEHAVIOR

Training Condition, the mean number of intervals of Positive Verbal and Positive Nonverbal Attending Behaviors rose from the baseline levels of 5.7 to 6.9 and 3.0 to 7.4, respectively. Although these rates declined somewhat during extinction (to 6.1 and to 5.9), they were maintained at a level higher than the pre-training Baseline Condition.

Table 1

Mean Daily Teacher's Total Positive Attending Behaviors
Contingent upon Children's Appropriate Behavior

	Baseline	Training	Extinction
To target child	9.22	14.87	12.70
To EG children	76.80	78.30	68.20

Table 2

Mean Daily Teacher Attending Behaviors Contingent
upon Target Child's Appropriate Behaviors

	Baseline	Training	Extinction
Positive Verbal	5.70	6.90	6.1
Positive Nonverbal	3.00	7.40	5.9
Negative Verbal	.11	.87	1.1
Negative Nonverbal	0.00	3.70	6.5

The subclasses of Negative Verbal and Negative Nonverbal Attending Behaviors contingent upon the target child's Appropriate Behavior were analyzed to measure the amount of teacher's reinforcement error, negatively attending to an Appropriate Behavior. The increasing means of teacher's Negative Verbal and

Negative Nonverbal Attending Behaviors following children's Appropriate Behavior suggest that increasing the teacher's attention to a specific child may increase the opportunity for reinforcement error. Both the mean number of intervals of teacher's Negative Verbal and Negative Nonverbal Attending Behaviors increased across the three experimental conditions.

The generalization of the experimental teacher-training procedure was measured in the rate of the teacher's Positive Attending Behaviors contingent upon the Appropriate Behavior of the children other than the target child (EG). The results of the subclass analysis of teacher's Attending Behaviors contingent upon the EG children's Appropriate Behaviors are represented in Table 3. The subclass of Negative Physical Attending Behavior was not observed during the study; therefore, it was excluded from analysis.

Table 3
Teacher Attending Behaviors to Other Children's
Appropriate Behaviors

	Baseline	Training	Extinction
Positive Physical	5.6	4.3	1.8
Positive Verbal	40.3	40.7	37.6
Positive Nonverbal	30.8	33.1	28.8
Negative Verbal	4.1	3.8	3.8
Negative Nonverbal	18.3	17.6	16.6
Other Behaviors	5.1	.75	4.7

With the exception of the Positive Physical category, the results of the subclass analysis were indicative of the hypothesized generalization of training.

Teacher's Positive Verbal and Nonverbal Attending Behavior showed a slight increase during training but declined during extinction. Secondly, teacher's Negative Verbal and Negative Nonverbal Attending Behaviors showed a slight decrease during the Training Condition.

Figure 2 shows the rates of teacher's Total Positive Attending Behaviors during the Baseline, Training, and Extinction Conditions. These means are also summarized by conditions in Table 1.

During the Training Condition the mean rate of teacher's Total Positive Attending Behaviors rose from the baseline level of 76.8 to 78.3 intervals. Following the elimination of daily feedback, the mean number of intervals of teacher's Positive Attending Behaviors decreased to 68.2, a point lower than the original baseline level. This 6.6 unit decrease from the pre-training base level indicates rapid extinction of the generalization of the effects of teacher training.

ATTENDING TO INAPPROPRIATE BEHAVIORS

Although the experimental training program was focused upon increasing the teacher's Positive Attending Behaviors contingent upon children's Appropriate Behavior, teacher's Attending Behavior following the children's Inappropriate Behavior were also recorded and analyzed. Table 4 summarizes the mean number of intervals of teacher Attending Behavior contingent upon the Inappropriate Behaviors of the target child and EG children. These extremely low means show that the teacher, although given no instructions, was able to maintain steady low rates of attending to the target child's and generalization children's Inappropriate

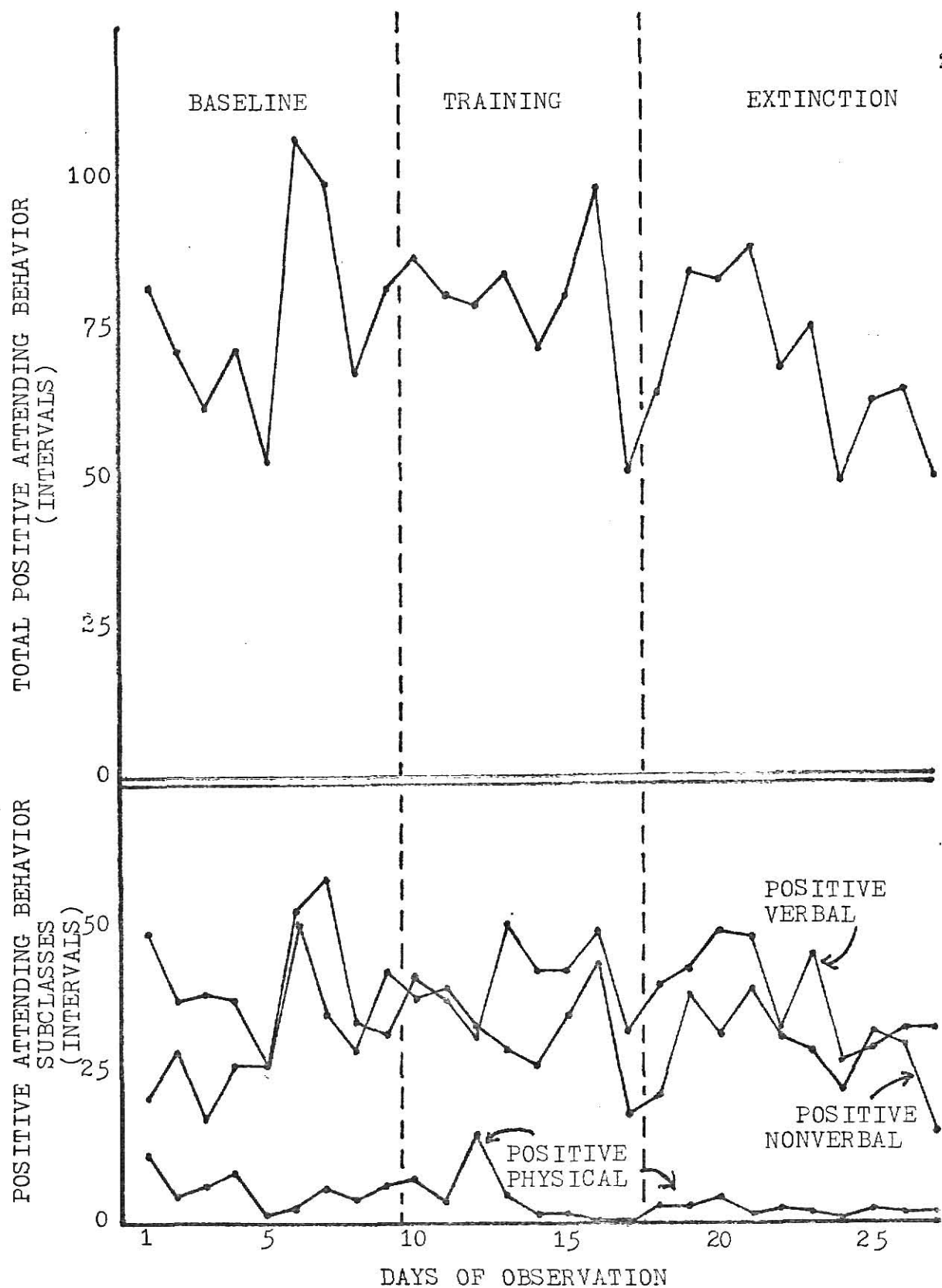


FIGURE 2

TEACHER POSITIVE ATTENDING BEHAVIOR TO OTHER
CHILDREN'S APPROPRIATE BEHAVIOR

Behaviors.

Table 4

Mean Daily Teacher Attending Behaviors Following
Children's Inappropriate Behaviors

	Baseline	Training	Extinction
Target child	.77	.40	1.5
EG group	3.90	.33	1.9

Chapter 5

DISCUSSION AND IMPLICATIONS

DISCUSSION

The results of this study measuring the direct effect of training a teacher to increase her contingent Positive Attending Behaviors to a specific target child's Appropriate Behavior were consistent with the findings of Hall, et al. (1968b) and Cossairt, et al. (1973). During the Training Condition, the teacher increased the mean frequency of contingent Positive Attending Behaviors by 5.6 intervals. Upon the withdrawal of the daily feedback reports during the Extinction Condition, this mean frequency decreased by 2.1 intervals. This decrease supports the hypothesis of Cossairt, et al. (1973) that experimenter's feedback served as a positive reinforcer to maintain the change in the teacher's behavior patterns. Although a component analysis of training was not made in the present study, social reinforcement, in the form of daily feedback reports to the teacher, appears to be an essential element for effective teacher-training procedures.

The operant principles of behavior analysis have established that newly emerging behavior patterns are more quickly and permanently strengthened as the result of immediate and strong positive reinforcement (Skinner, 1963). In applying this principle to teacher training, the need for more immediate forms of

positive reinforcement for desired changes in behavior would be particularly important for student teachers and beginning teachers who may not have yet developed the capacity to be reinforced by delayed changes in their students' behavior.

The results of this study also indicate that the immediate effects of training a teacher to increase her Positive Attending Behavior to an individual child will generalize to her interactions with other class members. Consistent with the findings of Ward and Baker (1968), the present study found that training a teacher to increase her attending to a specific child did not result in a concurrent decrease in the frequency of her attending to the other children in her classroom. During the Training Condition, the teacher actually increased the mean frequency of her Positive Attending Behaviors 2.5 intervals.

The long-term effects of this training generalization were less conclusive. During the Extinction Condition the mean frequency of the teacher's Positive Attending Behavior contingent upon the EG children's Appropriate Behavior decreased 10.1 intervals, a point lower than the pre-training baseline. This decline was interpreted as the inadequacy of the two-week feedback procedure to establish and deliver effective reinforcement for generalization of the effects of teacher training. In providing a continuous schedule of reinforcement for only the direct effects of teacher-training, the daily feedback reports were not adequate to maintain the generalization of the teacher's behavior changes during extinction. Due to the graduation of the target student-teacher, reinstatement of the feedback condition could not be instituted for this study.

Thus, the results of this analysis indicated the necessity of future

teacher-training programs to effectively schedule the delivery of reinforcement for desired changes in the teacher behavior. To optimize both the establishment and permanence of new teacher behavior patterns, a combination of continuous reinforcement (daily feedback) followed by intermittent reinforcement (periodic feedback reports) should be utilized (Skinner, 1963). Periodic reporting of a teacher's behavioral progress may sustain resistance to extinction of both the direct and generalization effects of teacher-training in behavior classroom management.

In light of the high pre-training baseline levels of the teacher Positive Attending Behavior to the EG group, the small to moderate increases found suggest that a "ceiling effect" is in operation as the frequencies approach their upper limits. The concurrent increases in the teacher's Positive Attending Behaviors to both the target child and other children were achieved by reducing the frequencies of teacher's Negative Attending Behavior and Other Behavior (i.e., leaving the room). Since the subject teacher's frequencies for these behavior categories were at baseline reasonably low (22.4 and 5.1, respectively) only limited subsequent increases in Positive Attending Behavior categories could be attained without causing drastic disruptions to the teacher's classroom routine. Declines in both the mean frequencies of the teacher's Negative Attending Behavior and Other Behavior during the Training Condition indicate the teacher was able to utilize the reinforcement capacity of her behavior more efficiently as a result of training.

The results of the analysis of the frequencies of teacher reinforcement errors show that the present training procedure did not sufficiently increase the

teacher's ability to correctly identify children's Appropriate Behaviors. The mean frequency of reinforcement error to the target child's Appropriate Behaviors suggests that increasing the teacher's attention to a specific child may also increase the opportunity for teacher's attending to Inappropriate Behaviors. Therefore, it is the recommendation of this study that future studies of teacher-training in behavioral classroom management be designed to include more focused emphasis on the teacher's identification of children's Appropriate and Inappropriate classroom behaviors.

Although not revealed through observational data, two additional aspects of the effects of the teacher-training procedure appear worthy of mention. At the close of the two-week Training Condition, the target student-teacher reported to the experimenter that she had begun to use her Positive Attending Behavior in her interactions with the children other than the target child to reinforce their Appropriate Behaviors. It was not revealed to the teacher at this time, but the observational data verified her subjective report.

Another interesting point is the observer's comments on the teacher's use of more generalized positive statements when she verbally interacted with the children. Rather than directing her praise to only an individual child (i.e., "You're doing a good job."), the teacher began to use more group-directed statements of approval (i.e., "I really like how you children play so well together.").

IMPLICATIONS

This study indicates the feasibility of training student teachers and beginning teachers in the skills of teacher-applied contingencies with one child and the same time increasing his or her total classroom management effectiveness. This type of training program could supplement the currently existing teacher-training programs. To eliminate the trial-and-error learning in the development of good teaching skills, the behavior analysis approach to classroom management has outlined two essential factors in training teachers to more effectively utilize their "natural" reinforcing function in the classroom:

1. Specifying precise procedural guidelines for the systematic application of teacher attention;
2. Reporting of feedback to assist teachers in establishing and maintaining behavioral changes.

The beginning teacher at any grade level faces a formidable challenge in entering the classroom. Too often, student teachers are unprepared to cope with the management and behavior problems that may face them; they may resort to excessive, and often misguided, use of punishment in an attempt to bring a semblance of order to the class. Focusing the training of these teachers to increase the systematic application of their positive attending behavior contingent upon appropriate classroom behavior serves a dual purpose. When disruptive classroom behaviors are minimized both the teacher and class concentrate their efforts and energies on the development of their instructional and learning skills within an

optimal learning environment. Although this "positive approach to guidance" is far from new, more precise methods of transmitting these principles to beginning teachers should become the goal of teacher education.

Secondly, classroom management training programs have emphasized the importance of monitoring and reporting behavioral progress in aiding the beginning teacher to modify her own behavior repertoire. As indicated previously, these reinforcing teacher-feedback reports should, at first, be scheduled continuously to establish the desired change in behavior; but, in order to maintain this new pattern of behavior, the beginning teacher must continue intermittently to receive support and accurate reports of behavioral progress.

The format incorporating these two factors used in this experimental teacher-training procedure may offer valuable educational and observational methods for the development of in-service training for beginning teachers. It would make it possible for a supervising or team teacher to observe and modify the beginning teacher's patterns of interaction with one child and, at the same time, affect a subsequent change in her overall classroom management effectiveness. The total teacher-training program could be a self-contained and integral unit of the regular classroom routine.

Certainly, many teachers develop good teaching skills without this specialized training; however, the behavior analysis approach offers precise and economical means of transmitting the principles of successful classroom management to the beginning teacher who might otherwise be doomed to failure.

Chapter 6

SUMMARY

The present study was an investigation of the effects of an experimental teacher-training program. A preschool student-teacher with no previous experience with behavior analysis techniques took part in a two-week teacher-training program focusing on the systematic application of her attention to a randomly selected child in her class. The hypothesis of the present study was that a teacher who is given training to increase the frequency of her Positive Attending Behaviors to a specific child will generalize the effects of this training to the other children in her class.

The behavioral definitions for Teacher Attending Behavior and Children's Classroom Behavior were adapted from the definitions of Thomas, Becker, and Armstrong (1968) to make them suitable of a preschool situation. Observational data on the two dependent variables were collected at the Child Development Laboratory at Kansas State University by two independent observers. The dependent variables of this study were:

1. The direct effect of training--the frequency of Teacher Positive Attending Behavior contingent upon the target child's Appropriate Behavior;
2. The generalization effect--the frequency of Teacher Positive Attending

Behavior contingent upon the Appropriate Behavior of the other children.

Using a 15-second time-sampling procedure, the observers recorded the behaviors of the teacher and the children daily for 30 minutes during the Baseline, Training and Extinction Conditions.

Following the nine-day Baseline Condition, the experimental teacher-training period was instituted. This training procedure included:

1. Presenting the teacher with basic reinforcement principles;
2. Instructing the teacher to increase her Positive Attending Behaviors to the target child;
3. Giving daily feedback reports to the teacher of her frequency of Positive Attending Behavior to the target child.

Instructions and daily feedback reports were eliminated during the Extinction Condition which was in effect for the remainder of the school term.

The major findings may be summarized as follows:

1. The results of the analysis of the direct effect of training a teacher to systematically attend to an individual child were consistent with previous studies. The teacher was able to increase and maintain this increase in the frequency of her Positive Attending Behavior contingent upon the target child's Appropriate Behavior as a result of training.

2. The hypothesis of generalization of the effects of the training program received only partial support. During the Training Condition the mean frequency of the teacher's Positive Attending Behavior contingent upon the Appropriate Behavior of the generalization children increased; however, this increase was not

maintained during the Extinction Condition when the mean frequency of teacher Positive Attending Behavior to the other children declined to a point lower than the original baseline.

3. The reinforcement error rate, the frequency of Negative Attending Behaviors contingent upon the target child's Appropriate Behavior, was found to consistently raise across the three experimental conditions. Recommendations for focusing future training efforts to aid teachers in their identification of children's Appropriate Behavior were made.

BIBLIOGRAPHY

- Allen, K. Eileen; Hart, Betty M.; Buell, Joan S.; Harris, Florence R. and Wolf, M. M. Effects of social reinforcement on isolated behavior of a nursery school child. Child Development, 1964, 35, 511-518.
- Allen, K. Eileen; Henke, Lydia B.; Harris, Florence R.; Baer, D. M.; and Reynolds, Nancy J. Control of hyperactivity by social reinforcement of attending behavior. Journal of Educational Psychology, 1967, 58 (4), 231-237.
- Altman, K. I. and Linton, T. E. Operant conditioning in the classroom setting: a review of the research. The Journal of Educational Research, 1971, 64 (6), 277-286.
- Baer, Donald M. and Wolf M. M. The reinforcement contingency in preschool and remedial education. In R. A. Hess and R. B. Bear (Eds.), Early Education: Current Theory, Research, and Practice. Chicago: Aldine, 1968.
- Baer, Donald M.; Wolf, M. M.; and Risley, Todd R. Some current dimensions of applied behavior analysis. Journal of Applied Behavior Analysis, 1968, 1 (1), 91-97.
- Becker, Wesley C.; Madsen, Charles H. Jr.; Arnold, Carole; and Thomas, Don R. The contingent use of teacher attention and praise in reducing classroom behavior problems. Journal of Special Education, 1967, 1 (3), 287-307.
- Bijou, Sidney W. and Baer, Donald M. The laboratory-experimental study of child behavior. In Paul H. Mussen (Ed.), Handbook of Research Methods in Child Development. New York: John Wiley and Sons, Inc., 1960.
- _____. Child Development: A Systematic and Empirical Theory. New York: Appleton-Century-Crofts, Inc., 1961.
- _____. Operant methods in child behavior and development. In Werner K. Honig (Ed.), Operant Behavior: Areas of Research and Application. New York: Appleton-Century-Crofts, Inc., 1966.

- Bijou, Sidney W.; Peterson, Robert F.; and Ault, Marion H. A method to integrate descriptive and experimental field studies at the level of data and empirical concepts. Journal of Applied Behavior Analysis, 1968, 1 (2), 175-191.
- Briskin, Alan S., and Gardner, William L. Social reinforcement in reducing inappropriate behavior. Young Children, 1968, (December), 23, 84-89.
- Brodén, Marcia; Bruce, Carl; Mitchell, Mary Ann; Carter, Virginia; and Hall, R. Vance. Effects of teacher attention on attending behavior of two boys at adjacent desks. Journal of Applied Behavior Analysis, 1970, 3 (3), 205-211.
- Cooper, Margret L.; Thompson, Carolyn L.; and Baer, Donald M. The experimental modification of teacher attending behavior. Journal of Applied Behavior Analysis, 1970, 3 (2), 153-157.
- Cossairt, Ace; Hall, R. Vance; and Hopkins, B. L. The effects of experimenter's instructions, feedback and praise on teacher praise and student attending behavior. Journal of Applied Behavior Analysis, 1973, 6 (1), 89-100.
- Fagot, Beverly I. Influence of teacher behavior in the preschool. Developmental Psychology, 1973, 9 (2), 198-206.
- Hall, R. Vance. Behavior Modification: The Measurement of Behavior. Lawrence, Ks.: H & H Enterprise, Inc., 1971.
- Hall, R. Vance; Fox, R.; Goldsmith, Willard L.; Emerson, M.; Owen, M.; and Porcia, E. The teacher as observer and experimenter in the modification of disruptive and talking out behaviors. Journal of Applied Behavior Analysis, 1971, 4, 141-149.
- Hall, R. Vance; Payon, Marion; Rabon, Deloris; and Broden, Marcia. Instructing beginning teachers in reinforcement procedures which improve classroom control. Journal of Applied Behavior Analysis, 1968, 1 (4), 315-322.
- Hanley, Edward M. Review of research involving applied behavior analysis in the classroom. Review of Educational Research, 1970, (December), 40, 597-625.
- Harris, Florence R.; Wolf, Montrose M.; and Baer, Donald M. Effects of adult social reinforcement on child behavior. Young Children, 1964 (October), 20, 8-17.

- Hart, Betty M.; Reynolds, Nancy J.; Baer, Donald M.; Brawley, Eleanor R.; and Harris, Florence R. Effects on contingent and non-contingent social reinforcement on the cooperative play of a preschool child. Journal of Applied Behavior Analysis, 1968, 1 (1), 73-76.
- Horwitz, Frances D. Social reinforcement effects on child behavior. Journal of Nursery Education, 1963, 18, 276-284.
- Madsen, Charles H. Jr.; Becker, Wesley C.; and Thomas, Don R. Rules, praise and ignoring: elements of elementary classroom control. Journal of Applied Behavior Analysis, 1968, 1 (2), 139-150.
- Scott, Phyllis M.; Burton, Roger V.; and Yarrow, Marian Radke. Social reinforcement under natural conditions. Child Development, 1967, 38 (1), 53-63.
- Skinner, B. F. Operant Behavior. American Psychologist, 1963, 18, 503-515.
- Thomas, Don R.; Becker, Wesley C.; and Armstrong, Marianne. Production and elimination of disruptive classroom behaviors by systematically varying teacher's behavior. Journal of Applied Behavior Analysis, 1968, 1 (1), 35-45.
- Ward, Michael H. and Baker, Bruce L. Reinforcement therapy in the classroom. Journal of Applied Behavior Analysis, 1968, 1 (4), 323-328.
- Wilde, Evelyn S. and Randolph, Daniel. Effects of instructing student teachers in the use of reinforcement techniques for classroom behavior management. Southern Journal of Educational Research, 1973, 7 (3), 100-113.
- Zimmerman, Elain H. and Zimmerman, J. The alteration of behavior in a special classroom. Journal of the Experimental Analysis of Behavior, 1962, 5, 59-60.

APPENDIX A

TEACHER'S CONSENT FORM

October 3, 1974

TEACHER'S CONSENT FORM

CAROL WEGLEY BROWN

MASTER'S DEGREE THESIS RESEARCH

As partial fulfillment of master's degree requirements, I will be conducting research under the supervision of the Department of Family and Child Development and in cooperation with the staff of the Child Development Laboratory. This will be a study of teacher-child interaction patterns during the weeks of October 15 - December 13.

The research will involve observations of interaction and guidance patterns. The purpose of the study is to analyze these patterns to devise methods in new preschool teacher training programs.

These observations will be made for 30 minutes a day. There will be a half-hour seminar for a two week period in which the records of these observations and guidance principles will be discussed with you.

These records will in no way be part of your student-teaching evaluation. All records will be confidential.

General results will be reported to you in late February.

As indicated by my signature below, I do hereby voluntarily consent to serve as an observational subject in the proposed study.

NAME

AGE

SIGNATURE

DATE

APPENDIX B

PARENT'S CONSENT FORM

October 3, 1974

PARENT'S CONSENT FORM

CAROL WEGLEY BROWN

MASTER'S DEGREE THESIS RESEARCH

As partial fulfillment of master's degree requirements, I will be conducting research under the supervision of the Department of Family and Child Development and in cooperation with the staff of the Child Development Laboratory. This will be a study of teacher-child interaction patterns during the weeks of Oct. 15 - Dec. 13.

The teachers will be trained to use specific interactional techniques with children. They will then be observed to determine whether and how often they use these trained techniques in the normal course of their daily interactions with the children.

The focus of this study will be on the teacher; the children will be observed only in relation to the patterns of teacher-child interactions. All information gathered in relation to specific children will remain confidential.

General results of this study will be reported to you in late February.

As indicated by my signature below, I, being the parent or legal guardian of the individual listed below, do hereby voluntarily consent to his/her participation in the proposed study.

CHILD'S NAME

AGE

SIGNATURE

DATE

APPENDIX C

OBSERVATIONAL CODE SHEET

OBSERVER _____ TARGET CHILD _____

STARTING TIME _____ OBSERVATION DATE _____

	CHILD		TEACHER ATTENDING TO CHILD							target teacher	other t.
	I	A	+P	+V	+N	-P	-V	-N	O		
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THE GENERALIZATION OF THE EFFECTS OF
EXPERIMENTAL TEACHER TRAINING

by

CAROL WEGLEY BROWN

B. A., Kent State University, 1973

AN ABSTRACT OF A MASTER'S THESIS

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

Department of Family and Child Development

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1975

The effects of an experimental classroom behavior management teacher-training procedure was investigated in a preschool classroom. It was the purpose of this study to determine if a preschool student-teacher who was given instructions and feedback on her systematic application of teacher attention with a specific child would generalize and maintain the use of this technique with the other children in her preschool class.

A student teacher with no previous training in behavioral analysis techniques was observed for a baseline of nine days. The frequencies of her contingent approval (Positive Attending Behavior) to a specific target child and to the 15 other children in her class were recorded in 15-second time-sampling observations daily for 30 minutes.

The experimental teacher-training procedure included: (1) presenting the teacher with basic reinforcement principles, (2) instructing the teacher to increase her Positive Attending Behavior to the target child, and (3) daily feedback reports to the teacher of her Positive Attending Behavior to the target child. Following the two-week Training Condition, an Extinction Condition in which the daily feedback reports and instructions were eliminated was introduced.

The hypothesis of generalization of training received only partial support. Increases in both the mean frequencies of teacher's Positive Attending Behavior contingent upon the Appropriate Behaviors of the target child and non-target children during the Training Condition indicate the direct effects of training and immediate generalization; however, long-term generalization effects were not maintained during extinction. The increased frequency of teacher's errors in

negatively attending to children's Appropriate Behavior suggests that training procedures must focus more attention on the teacher's correct identification of the children's behaviors to be reinforced.

This study demonstrates the feasibility of training a teacher to use behavioral classroom management techniques with one child as a way of increasing her total classroom effectiveness. Implications for the application of this procedure in inservice training situations for student and beginning teachers were made.