*THE USE OF A "TOKEN HELPER" IN THE MANAGEMENT OF
CLASSROOM BEHAVIOR PROBLEMS AND
IN TEACHER TRAINING¹*

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A grade-four class teacher was trained in the use of token and verbal reinforcement by an experienced "token helper", who demonstrated the procedures in the classroom. The introduction of a simple token system resulted in significant decreases in the disruptive behavior of 10 pupils in two morning periods. When the token helper withdrew from the classroom, the teacher managed the token system and maintained disruptive behavior at lower than baseline levels.

Little attention in the research literature has been given to the training of teachers in behavior modification techniques. Most such training consists of formal instruction in the classroom application of learning principles (O'Leary and Becker, 1968; Packard, 1970). However, an alternative training method such as modelling may be more appropriate for the teacher who needs "proof" that the technique is both feasible in her classroom and successful. This type of training avoids the need for detailed verbal explanations, and can convey simply and vividly the use of attention for appropriate behavior, ignoring of inappropriate behavior, and the use of natural and varied verbal remarks (Becker, Madsen, Arnold, and Thomas, 1967). Modelling procedures were previously used in a study by Engeln, Knutsen, Laughy, and Garlington (1968), where a mother observed a therapist interacting with her child, and was subsequently reinforced by the therapist for praising the child's appropriate behaviors.

In the present investigation, the experimenter, described as the "token helper", trained a classroom teacher in the use of token and verbal reinforcement by modelling the techniques in the teacher's classroom. It was hypothesized that this method of training would result in the successful use by the teacher of both token and verbal reinforcement systems.

Preliminary observations in this classroom suggested that much of the disruptive pupil behavior involved interaction with a peer. It was hypothesized that the application of an individual token system to the whole class would reduce the disruptive behavior of the target children, and also control the behavior of the other pupils who may have been reinforcing much of the disruptive behavior of their peers. A secondary aim of the experiment was thus to gather reliable data on the amount of inappropriate pupil behavior that occurred in interaction with other pupils.

METHOD

Subjects and Setting

The experiment was conducted in a grade-four class of 37 pupils in an Auckland elementary school. It was scheduled in two morning periods, with the same teacher, the same pupils, and the same observers present during each period. The teacher was a woman with 3 yr of teaching experience. During the first period

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(Period I), the pupils wrote an essay in their own workbooks; during the second period (Period II), the class was divided into four attainment groups, each of which was assigned a different spelling or language exercise.

Observation Procedures

Observations were made in both periods for 40 school days. The 10 target children, five girls and five boys, had been chosen by the teacher for their "bad" or "average" behavior in class.

The two observers, seated several feet apart at the back of the room, independently observed one target child for 10 sec, and in the next 5 sec, recorded his or her behavior on an observation sheet as either appropriate or inappropriate. Then the next target child was observed for 10 sec, his behavior recorded in the next 5 sec, and so on. After all 10 children had been observed once, the sequence was started again. This was continued until each child had been observed 10 times, requiring approximately 25 min. Both observers were experienced in the use of these time-sampling procedures.

Measures

Three types of data were recorded.

Pupil behaviors. The classification of each 10-sec observation of pupil behavior as either appropriate or inappropriate was based on a series of examples of such behaviors provided by the teacher. Specific examples of inappropriate behavior were: getting out of seat when work at desk had been specified by the teacher, talking to other pupils when the teacher had given instructions for individual work, answering teacher back, fighting with other pupils or the teacher. Some appropriate behaviors were: beginning work immediately after the teacher's instructions, putting hand up before speaking to the class or the teacher, participation in a class discussion according to rules that the teacher reviewed before each such discussion. If a student engaged in both appropriate and inappropriate behavior within a 10-sec interval, the predominant behavior was scored. The two

observers were trained to modify their definition of appropriate behavior in accordance with the current set of teacher instructions, *i.e.*, if the teacher instructed the class to put their pencils down and listen to her, only children who conformed with these instructions were recorded as behaving appropriately. This definition of appropriate behavior continued until the teacher gave another set of instructions to the class.

Peer consequences of inappropriate behavior. For each sample of pupil behavior recorded as inappropriate, observers noted whether or not the behavior had received the attention of another pupil (*i.e.*, had a peer consequence). Some examples of inappropriate behaviors with peer consequences were: fighting with another pupil, laughing with or at another pupil. The behavior of a pupil who was drawing quietly when the teacher had set a math exercise was recorded as inappropriate with no peer consequence.

Teacher remarks. Teacher comments, other than instructional ones, were recorded and classified as either contingent upon appropriate pupil behavior (*e.g.*, "Johnny will be going out to play first because he was the first to put his pencil down when I asked"), or contingent upon inappropriate pupil behavior (*e.g.*, "Would you stop wandering around, Tracey?"). These comments were recorded by the experimenter every other day.

Reliability of Observations

Reliability checks on the coding of both pupil behaviors and peer consequences of inappropriate behavior were made approximately every second day. The number of intervals in which both observers agreed was divided by the total number of agreements plus disagreements and multiplied by 100 (Hanley, 1970). In Period I, 19 reliability checks were taken. Interobserver agreement for the coding of pupil behavior was never lower than 90%, and not lower than 92% for the recording of peer consequences following inappropriate behavior. In Period II, 12 reliability checks were taken. The lowest percentage of interobserver agreement for

the recording of pupil behavior was 93%. The lowest percentage for peer consequences of inappropriate behavior was 90%. No reliability checks were taken on the recording of teacher comments.

Experimental Conditions

A combined multiple baseline and reversal design was used in this study.

Period I

Baseline. Two preliminary observation sessions were held, after which problems of definitions of behavior were clarified. When baseline observations proper began, interobserver agreement was 90% for recording of pupil behaviors. During this phase, no instruction was given to the teacher in behavior modification, nor was she told that a record of her management remarks was being taken.

Tokens by helper. The teacher and experimenter together designed a reinforcement program, minimally disruptive to the class routine, transferable to the control of the teacher, and applicable to the whole class. The teacher issued each pupil with a card divided into 20 squares, with his or her name, school, and room number on it. During the 10 reinforcement sessions, the experimenter, who was described as the "token helper", moved in a random fashion around the class and initialled one of the squares of any pupil who was behaving appropriately (*i.e.*, in accordance with the current set of teacher instructions). The "token helper" praised the pupils as they received the initials or "token" in a square. From three to six sessions were needed to earn an initial in all 20 squares. At the end of each session, the cards were collected and those pupils who had earned initials in all 20 squares were allowed to visit the school principal in his office. The principal praised each child individually, and placed a rubber stamp with the school emblem on the completed card. These children were then issued with a new numbered card before returning to the classroom.

The teacher was encouraged to praise appropriate pupil behavior during this phase, and the experimenter immediately initialled the card of any child who had been commended by the teacher. The teacher and experimenter discussed the reinforcement techniques being used and the class level of appropriate behavior every second day.

No tokens. For a further 10 days, observations were continued with both the token system and the "token helper" absent from the classroom. During this phase, no instructions were given to the teacher to revert to her baseline pattern of verbal remarks.

Tokens by helper and teacher. For the first five days, both the experimenter and the teacher initialled the pupils' cards, but each day the teacher awarded an increasing proportion of the "tokens". By the sixth day, the experimenter withdrew from the classroom and the teacher controlled the token program. In meetings outside the classroom, the experimenter continued to encourage the teacher to use the techniques modelled to her, including the pairing of a "token" with praise and attention.

Period II

Baseline. The same two observers recorded the same behaviors as in Period I. The baseline condition was continued for 20 consecutive sessions, whereas in Period I it continued for 10 days.

Tokens by helper. The token system operated in this group lesson exactly as in Period I. The teacher was encouraged to specify more clearly the instructions for each of the four groups, and thereby define the behaviors that would earn an initial or "token". Thus, all pupils had explicit instructions for the completion of their language or spelling exercise, and were told what to do when they had finished. Observations were suspended for two consecutive days due to the teacher's absence.

No tokens. Tokens were removed for the final 10 days to see if the teacher could maintain, by praise and attention alone, the level of

behavior of the token phase. The experimenter was not present during the 10 sessions of this phase, but met the teacher out of class time to discuss the observers' daily records of teacher remarks and pupil behavior. The experimenter emphasized the importance of attending to

Fig. 1. Percentage of intervals scored for inappropriate pupil behavior and peer consequences of inappropriate behavior during Periods I and II.

appropriate pupil behavior and ignoring inappropriate behavior.

RESULTS

Pupil behaviors. Figure 1 shows the daily percentage of inappropriate behavior for all the target children across the experimental phases. The level of inappropriate behavior was very high and variable during the baseline sessions. The introduction of the token system in Period I resulted in a sharp and immediate decrease in both the level and variability of inappropriate pupil behavior. The frequency of this behavior also dropped on Days 10, 11, and 12 of Period II, but returned to a high level for the subsequent baseline sessions. The introduction of tokens in Period II also led to a much lower level of inappropriate behavior after the first token session, Day 21. When tokens were withdrawn in Period I, inappropriate behavior increased but remained below baseline levels. Withdrawal of tokens in Period II (Day 31) had a similar effect. Control over inappropriate behavior was reestablished with the reinstatement of the token system on Day 31 (Period I). There was only a small difference between the level of inappropriate pupil behavior in the "tokens by helper and teacher" and "tokens by teacher only" conditions. During the last few days of this phase, however, the level of inappropriate behavior rose.

Peer consequences of inappropriate behavior. The relationship between the daily percentages of inappropriate behavior and of inappropriate behavior with a peer consequence is apparent in the parallel configuration of Figure 1. In both periods, a high percentage of the inappropriate behavior, not eliminated by the introduction of the token system, involved interaction with other pupils (*i.e.*, inappropriate behavior with a peer consequence).

Teacher management remarks. During both periods, the level of appropriate pupil behavior fluctuated independently of the number of teacher remarks contingent upon this behavior.

These remarks, however, did not exceed 25 in any one observation session. During the baseline of Period I, 173 teacher remarks contingent upon inappropriate pupil behavior were recorded. The number dropped to 22 during the token phase, increased again to 59 during the withdrawal of tokens, and was reduced to five in the final phase. In Period II, there was a slight reduction from baseline levels of 80 and 42 during the first and second 10 days, respectively, to 34 in the token phase. During the no-token phase of Period II, 129 teacher remarks following inappropriate pupil behavior were recorded.

DISCUSSION

The introduction of a token reinforcement program in a class of 37 pupils achieved significant improvements in the behavior of 10 target pupils in both a formal (Period I) and a less formal (Period II) group lesson. The sharp drop in inappropriate behavior on Days 11 (Period I) and 22 (Period II) was not due to the presence of the experimenter acting as a discriminative stimulus for good behavior, since the experimenter had been present every second day during baseline.

Although the teacher was able to use the token system to maintain disruptive behavior at lower than baseline levels, the results suggest that the transfer of control of the reinforcement program from the experimenter to the teacher may not have been completely successful. During the five days in which the teacher managed the token program on her own, there was some indication that control over pupil behavior was being lost. An extension of this phase may have given a more conclusive evaluation of the teacher's training in the use of token reinforcement. Further, the training did not increase the teacher's social attention to appropriate pupil behavior (Figure 2).

There are two possible roles for a token helper in a classroom management program. First, the token helper can assist a teacher in the operation of a token system, *e.g.*, the dispensing

Fig. 2. Percentage of intervals scored for appropriate pupil behavior and number of teacher remarks contingent upon appropriate behavior during Periods I and II.

and counting of tokens earned. In this experiment, the teacher had initially indicated that she could not operate an individual contingency system for 37 pupils without such help. The token helper who dispenses tokens in accordance with the cues of the teacher or experimenter could be a pupil of the same or higher grade as the experimental subjects. Second, an experienced token helper can design the reinforcement program for a class and, by modeling and instruction, train the teacher in its use. If the goal of such training is the transfer of control of the reinforcement system to the teacher, then the token helper must ensure that the teacher actively participates in the reinforcement program from the outset. The teacher must not be allowed to rely on the helper for the management of her class, while she herself concentrates solely on instructional aspects. Only a person experienced in both the principles and the practical details of classroom management could act as the second type of token helper.

The modification of the level of inappropriate behavior in both periods saw parallel changes in the amount of peer attention to inappropriate behavior. However, since peer attention to inappropriate behavior was not independently manipulated, it is impossible to deter-

mine the nature of the relationship between peer attention and inappropriate behavior. If further experimentation showed that independent manipulation of peer attention led to systematic changes in level of inappropriate pupil behavior, one could justifiably call peer attention a reinforcer of that behavior.

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