

AN INVESTIGATION OF THE INFLUENCE OF STUDENT  
BEHAVIOR ON TEACHER BEHAVIOR

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The relationship between student behavior change and teacher reactions to the change was investigated. One fifth-grade teacher served as the subject and two students in her class were employed as teacher change agents. In a multiple baseline design, the students' disruptive behavior (the independent variable) was modified without the teacher's knowledge. The teacher's reactions toward the students (the dependent variable) was monitored on several dimensions including: teacher behavior, teacher attitude toward students, and the quality of teacher verbal statements. Results indicated that student behavior change influenced the teacher's behavior. Implications are that students possess potent reinforcing properties for teachers and that students should be trained to be effective students.

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Functional analysts have demonstrated that when appropriate student behavior is followed by teacher attention, the rate of appropriate behavior emitted by the students increases (Becker, Madsen, Arnold, and Thomas, 1967; Cormier, *unpublished*; Hall, Lund, and Jackson, 1968; Madsen, Becker, and Thomas, 1968). These investigators manipulated the teacher's behavior as their independent variable and studied the resulting change that occurred in student behavior as their dependent variable. The effects that student behavior may have on the teacher's manner of responding to his or her students have largely been ignored.

Although no studies were found investigating the effects of student behavior change on teacher behavior in a regular elementary school classroom, it is reasonable to believe that students do possess some form of reinforcement for teachers. Tharp and Wetzel (1969) pointed out that in any social system, every individual's behavior is subject to reinforcement. If one assumes that all behavior is under the control of

some form of reinforcement, it is plausible that within the student-teacher social relationship, the student possesses some reinforcers for the teacher. Indirect evidence of student influence on teacher behavior was provided by Berberich (1971), who assessed the effects of a simulated child's correctness on the teaching behavior of adults. The reinforcement effect of the "child's" contingent correctness was demonstrated to influence systematically the adult's use of tangible reinforcers, verbal rewards and punishments, and motor behavior. More direct evidence of student influence on teacher behavior was provided by Klein (1971), who manipulated normal, positive, and negative classroom behaviors of undergraduate and graduate college students. The study demonstrated that changes in student classroom behavior had an effect on the classroom verbal and nonverbal behavior of the instructors. Graubard, Rosenberg, and Miller (1971) found that retarded students trained to deliver reinforcers contingent upon teacher positive or negative contacts resulted in dramatic increases in teacher positive contacts (praise) and a decrease in negative contacts. Graubard *et al.* employed events such as eye contact, asking for extra help, and complimentary comments as reinforcers.

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At present, the effect student behavior may have on teacher behavior in an elementary school classroom is largely unexplored. The present study was a limited attempt to explore the relationship between changes in student classroom behavior and teacher behavior. More specifically, teacher responses to students were evaluated as a function of systematic changes in the student's classroom behavior.

## METHOD

### *Subjects and Setting*

The study was conducted in a primary school that serves an upperclass residential suburb primarily composed of professional families. A fifth-grade teacher was selected on the basis of the school principal's recommendations to serve as the subject for the study. The teacher was a 25-yr-old female holding a BS degree in elementary education with nine months' teaching experience and was recommended because of the problem behavior of several students in her class. One of the problem students, Robin, was an 11-yr-old male student who was reported to be one of the worst behavior problems in the school; he was sent to the principal's office about every other day. Another problem student was Karen, an 11-yr-old female in the same fifth-grade class. She, too, had a reputation for ignoring classroom rules. Both students were chosen on the basis of the high scores assigned to them by the teacher on measures of disruptive behavior, as well as through anecdotal reports given by the principal. In addition to these students, three other students were randomly chosen from the class to serve as experimental blinds to conceal the identity of the target students from the classroom teacher. The teacher's cooperation was secured by explaining that the study needed to be conducted without her knowledge of the experimental procedures. She was told that the principal was fully aware of the purposes of the research and approved of the project; the principal encouraged her participation. It was explained that collection of data

required the presence of observers to monitor classroom behavior, but the teacher was not told who or what behaviors were being observed until after the study was completed. At the conclusion of the study, the procedures and results were explained fully to the teacher.

### *Dependent Variables*

*Teacher behavior.* Teacher attention (responses) to appropriate and inappropriate stimulus classes of the children's behavior was considered as one response category. That is, observers recorded the frequency of teacher attention respectively to inappropriate and appropriate categories of behavior of both Robin and Karen. Teacher attention was operationally defined as any verbal comment made to the target students.

*Teacher verbal responses.* The observers' records of the teacher's verbal responses to student behavior were rated by two independent judges to assess the quality of these statements. Statements were rated as positive (those containing praise statements), negative (those containing reprimands), or neutral (those containing neither praise nor reprimands). Interjudge agreement was 87.4%.

*Teacher ranking scores.* The teacher was given a stack of 3 by 5 in. plain white cards; on each card was written the name of one student in her class. The teacher was asked to arrange the cards in three separate but equal piles representing those students that were high, medium, and low on each of the behaviors she had identified as important for her class. After the three piles were completed, the teacher was asked to rank the low pile in order from best to worst. This procedure was carried out for each behavior included in the appropriate and inappropriate categories. A teacher ranking score was obtained by adding the student's ranks on all behaviors. A high score indicated a student who was disruptive, while a low score was indicative of a model student. This procedure assisted the authors in identifying the most disruptive children in the class.

*Subjective unit of irritation (SUI).* This instrument was adapted from a technique developed by Joseph Wolpe (Sherman and Cormier, 1972) and used to assess the amount of irritation the teacher subjectively assigned to each student. The teacher was presented with a stack of 3 by 5 in. plain white cards, each containing the name of one student in her class. She was asked to imagine a scale from zero to 100 where zero represented a student who caused her no irritation and 100 represented the worst or most irritating student she could imagine. The teacher was then asked to assign each student a place on the scale by writing a number from zero to 100 on each card. A high score indicated an irritating student and a low score a model student.

#### *Independent Variables*

*Student behavior.* Initially, observers entered the classroom to accustom the teacher and her students to the presence of outsiders in the room. During these sessions, a record was kept of the student behaviors most frequently responded to by the teacher. Then, before the experiment began, the teacher, with the authors' help, identified and behaviorally defined those behaviors that she felt fell into two broad categories, appropriate and inappropriate classroom behavior. These two categories of behavior were considered the stimulus classes for the teacher. The teacher was not told that the behaviors she defined were to be considered stimulus categories for her reactions to the students. Both categories of behavior described the inappropriate and appropriate behaviors for both Karen and Robin. The inappropriate stimulus category included behaviors such as asking questions about teacher-provided instructions. For example, in response to teacher's instructions to "sit down" or "open your book", the student asked, "why should I do that?". Also included in this category were talking to other students without permission, leaving seat without permission, and not paying attention. Generally, any behavior unrelated or disruptive to class activity was

included by the teacher in the inappropriate behavior category. The appropriate behavior category included behaviors such as following instructions; for example, the student must sit down or open his book when instructed to do so. Also, paying attention to ongoing class activities and having the necessary materials at his desk needed for the ongoing activities were defined as appropriate behaviors (For a complete list of behaviors identified by the teacher and the definition of each see Appendix A).

#### *Recording Techniques and Observers*

Two observers were assigned to the class for each day of the study. One observer monitored the target student's behavior while the other recorded independently the teacher's responses to that student. Student observers recorded the frequency of all behaviors occurring in each category during the observational periods. The teacher observer recorded the frequency of teacher responses in two ways. First, the frequency of the teacher's social attention to the students' inappropriate and appropriate behavior was recorded. Second, the teacher observer recorded the verbal reactions of the teacher in response to the target student's behavior. All observations were made between 10:00 a.m. and 2:30 p.m. during randomly assigned periods of 50 to 60 min; all observational periods were divided into four equal parts. To ensure that the data were representative of the students' behavior throughout every observational period, each target student was observed for two of the time periods each day, with the order of observation randomized. Subject matter varied according to the school's schedule and included subjects such as science, geography, and art. The behavior of the students and the teacher's reactions to the students were monitored throughout the study. The teacher observers also recorded, *verbatim*, all verbal comments made by the teacher to the target students. Observers were not told the purpose of the experiment, nor were they informed of experimental changes during the study. The observers were requested to avoid all interaction

with both the teacher and students in the class at all times.

*Observer training and reliability.* Six undergraduate students in an Educational Psychology class served as observers; all received class credit for participating. Observers were trained through role playing and a video-tape simulation of the classroom behaviors identified by the teacher. Observer reliability was calculated by the total number of agreements divided by the total number of agreements plus total number of disagreements. An agreement between observers constituted the same number of frequency tallies for each category of behavior. Average reliability for teacher observers was 93.9%, with a range of 90.3% to 100%. Average reliability for student observers was 83.6%, with a range of 82% to 85.4%. Observer reliabilities were also assessed after respective baselines were completed for each student. Teacher observers averaged 88.9%, with a range of 83.3% to 100%; student observer reliability averaged 82.2%, with a range of 77.4% to 89.7%.

### *Design of the Study*

A multiple baseline across behaviors design was used. This design allows for an inference of causal relationship if behavior changes coincide at the point when the experimental procedure is introduced. After the baselines of the teacher's reactions to each student were obtained, the experimental phases were applied successively to her reactions to Robin and later to Karen. The teacher's reactions to both students were measured concurrently.

In an attempt to avoid possible differential treatment toward the target students by the teacher and to obscure the identity of the target students, three experimental "blind" subjects were employed; the behavior of these students was not monitored by the observers, nor were the teacher's reactions to these students recorded. Each time the authors interviewed a target student, at least one experimental "blind" student was also interviewed before or after the

target student. Target students and experimental "blind" students were always seen individually; these conferences lasted from 5 to 10 min. The classroom teacher was not told the identity of the target students. The study was carried out in four phases.

*Baseline.* Before beginning baseline observations, the authors met with all the target students and the experimental "blind" students to solicit their cooperation. All students were told that they each would be doing something different and that it was very important that they tell no one, not even each other, about their individual project. The importance of secrecy was repeatedly stressed throughout all phases of each experiment. All students involved repeatedly professed that they "kept" their secret and no indications to the contrary were noted. During baseline, all students were given an individual guidance activity taken from *A Teaching Program in Human Behavior and Mental Health Handbook V for Fifth Graders* by Ojemann, Dykstra, and Pritchett (1969). Students were not informed that they were being observed. Because of the multiple baseline design, the baseline period lasted eight days for Robin and 16 for Karen.

*Instruction and informal feedback.* Instruction was initiated with the target students during this condition. To assess whether the student's behavior could be controlled without the use of tangible reinforcement, the target students were asked to think of some ways they could improve their relationship with their teacher. The target students agreed individually upon the behaviors previously identified as appropriate (See Appendix A) as a way they could improve their relations with their teacher. In addition, the students agreed upon the identified inappropriate behaviors as behaviors to be avoided. The students were not told how the behaviors were identified. Daily conferences were held with the target students to discuss the students' efforts and success in changing their behavior during this phase. Although the students were not told that the observers were monitoring their behav-

ior, the observations were used to communicate informally their daily progress to the students. For example, typically the student would initially be asked how he or she was doing in eliminating inappropriate behavior. They would be asked to estimate about how often they engaged in each defined behavior. If this estimate was highly inaccurate, they would be reminded of their agreement to cease inappropriate behaviors and encouraged to do better that day. Frequently, the benefits of behaving appropriately were briefly discussed (*e.g.*, if you do what the teacher wants, she will be nicer to you) and the students were asked to notice changes in the way the teacher "acted" toward them. The experimental "blind" students continued to receive individual guidance activities as in the baseline phase. This phase started on Day 9 for Robin and Day 17 for Karen.

*Tangible reward, monitoring, and formal feedback.* Because the procedure used in the instruction and informal feedback condition did not result in sufficient change in student behavior, the target students were offered a tangible reward (model car kits for Robin and popular phonograph recordings for Karen) for each two-day period they emitted one or less inappropriate behaviors per day. The students were told they were being observed and that the observers would give daily reports on their behavior to the authors. At this time, the students were also encouraged to attempt to increase their appropriate behavior as they eliminated inappropriate behavior; however, no contingency was placed on this. Both students were given a daily report on their performance. During this conference, Karen and Robin were given a factual report of their inappropriate behavioral frequencies. That day's behavior was compared with the previous day's and the students were encouraged to maintain a low rate of inappropriate behavior. The students were always reminded of the exact criteria they must meet to receive their reward. The guidance-related activities were continued with the experimental "blind" students.

*Reversal.* Only Robin was included in this experimental condition. He was told that the study was completed for him, that the observers would no longer be attending to his behavior, and that he had done an excellent job. The authors encouraged Robin to maintain his modified behavior (a high percentage of appropriate behavior). The authors continued to interact with other students in the class but no longer with Robin. The observers continued to monitor Robin's behavior and the teacher's reaction to the student as in the previous phases of the study.

## RESULTS

As described in the procedure section, the teacher's responses to appropriate and inappropriate behavior were monitored for both Robin and Karen. Appropriate behavior was considered desirable for the classroom and inappropriate behavior was considered undesirable. To simplify data presentation, the percentage of appropriate behavior engaged in by each student is presented. The teacher's reactions to the students' behavior are presented in terms of the percentage of her reactions to the appropriate behavior of Robin and Karen. Figure 1 shows that Robin engaged in a low percentage of appropriate behavior throughout the baseline and instruction and informal feedback phases. During these two phases, a low percentage of the teacher's responses were to Robin's appropriate behavior; her verbal responses to Robin were mostly negative (See Table 1).

When the tangible reward, monitoring, and formal feedback condition was introduced, the percentage of appropriate behavior emitted by Robin increased. Concurrently, during this phase, the percentage of the teacher's responses to Robin's appropriate behavior increased; also, the percentage of her negative verbal responses decreased and the percentage of positive verbal response rose. The change in the percentage of responses made by the teacher to appropriate behavior was accompanied by a change in the

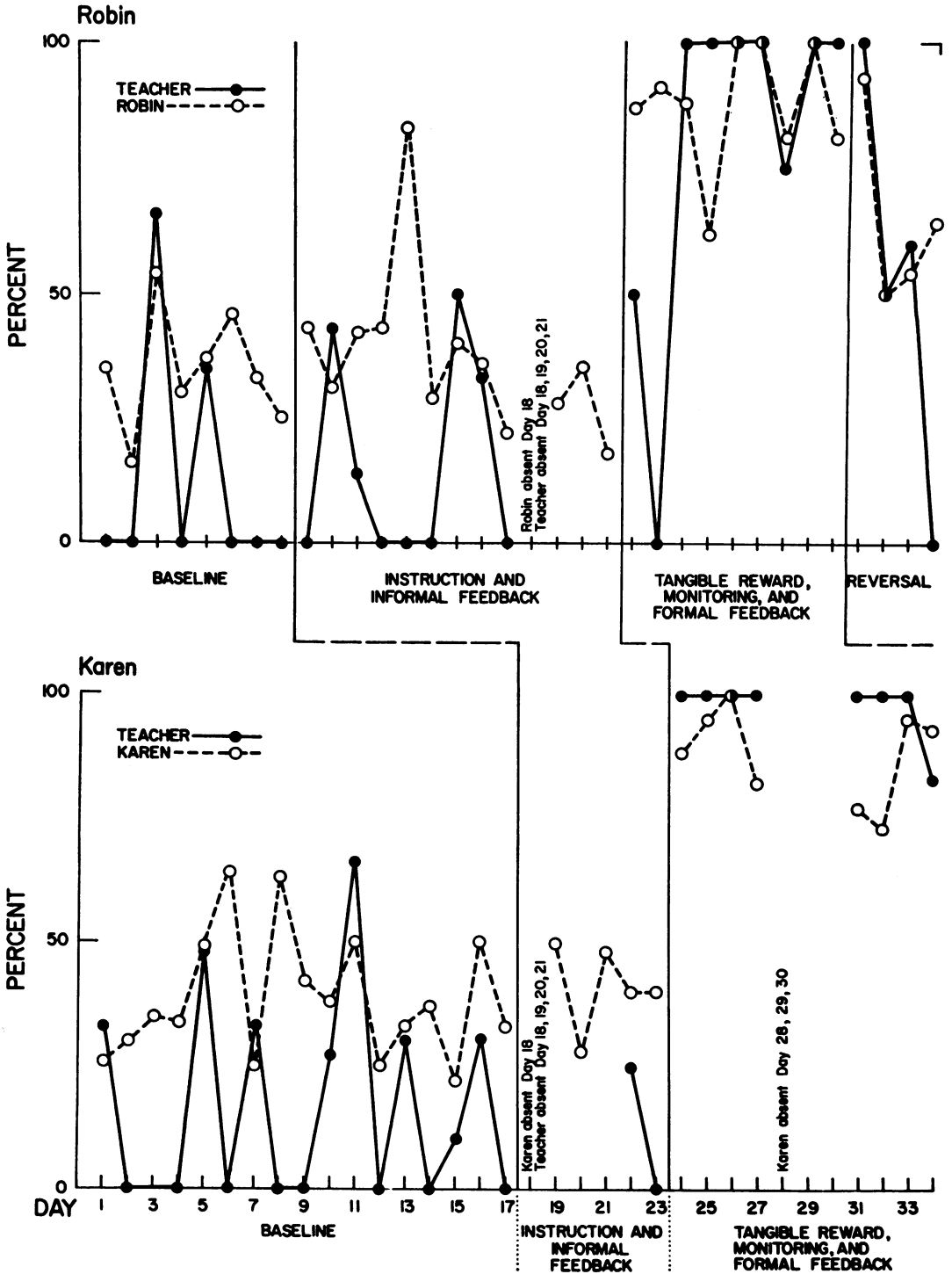


Fig. 1. Frequency of the two students' appropriate behavior (the independent variable) is shown as a percentage of appropriate plus inappropriate classroom behavior (see Appendix A). One of the dependent variables, verbal responses of the teacher to the students' behavior, is shown as a percentage representing the frequency of responses to appropriate behavior divided by the total frequency of responses to appropriate plus inappropriate behaviors. High percentages indicate that the students' behaviors were predominantly appropriate and that the teacher's interactions with the students were predominantly in response to appropriate behaviors.

Table 1

The percentage of positive, negative, and neutral verbal responses made to Robin and Karen by the teacher for each phase of the study.

<i>Phase</i>	<i>Robin</i>	<i>Karen</i>
I. <i>Baseline</i>		
Positive	5.8	6.9
Negative	61.8	51.1
Neutral	32.4	32.0
II. <i>Instructions and Informal Feedback</i>		
Positive	11.8	—
Negative	61.8	50.0
Neutral	26.4	50.0
III. <i>Tangible Reward, Monitoring, and Formal Feedback</i>		
Positive	26.3	13.8
Negative	10.5	20.7
Neutral	63.2	65.6
IV. <i>Reversal</i>		
Positive	26.7	—
Negative	26.7	—
Neutral	46.6	—

NOTE: The above numbers express percentages.

quality of these responses (See Table 1). Robin received a tangible reward once, on Day 27, during the tangible reward, monitoring, and formal feedback phase. The percentage of Robin's appropriate behavior decreased during the reversal phase, as did the percentage of the teacher's responses to Robin's appropriate behavior. The percentage of the teacher's negative verbal responses increased slightly. Table 2 indicates a

decline in Teacher Ranking Scale scores over all phases except the reversal phase. The SUI score remained essentially unchanged through three phases of the study but decreased during the reversal phase.

Figure 1 indicates a pattern of behavior for Karen similar to that of Robin. Karen engaged in a low percentage of appropriate behavior throughout the first two phases. Also, the teacher had a low percentage of responses to Karen's appropriate behavior. A relatively high percentage of the teacher's verbal comments was negative in nature and a low percentage was positive during the first two phases. During the tangible reward, monitoring, and formal feedback phase, the percentage of appropriate behavior emitted by Karen increased markedly, and concurrently, the percentage of the teacher's attention to Karen's appropriate behavior increased. In addition, the percentage of negative verbal responses decreased and the percentage of positive verbal responses rose. The change in percentage of appropriate behavior by Karen not only was accompanied by a greater proportion of attention to the behavior, but also by a change in the quality of teacher verbal responses. Karen's SUI scores in Table 2 progressively decreased during all phases of the study. The Teacher Rankings decreased through all phases of the study but increased at the last

Table 2

Teacher ranking scores (TRS) and subjective unit of irritation scores (SUI) assigned by the teacher to Robin and Karen for each phase of the study.

		<i>Baseline</i>	<i>Instruction and Informal Feedback</i>	<i>Tangible Reward, Monitoring, and Formal Feedback</i>	<i>Reversal</i>
Robin	TRS	275	239	194	219
	SUI	—	50 and 40 <sup>1</sup>	50	20
Karen	TRS	272	245	168 and 215 <sup>2</sup>	
	SUI	70	50	40 and 15 <sup>1</sup>	

<sup>1</sup>SUI scores were obtained twice for Robin (Instruction and Informal Feedback) and Karen (Tangible Reward, Monitoring, and Formal Feedback). The first scores for both students were obtained midway through the respective condition and the second scores were assigned at the end of the condition.

<sup>2</sup>The teacher ranked Karen twice during the Tangible Reward, Monitoring, and Formal Feedback phase. The first ranking was obtained on the twenty-eighth day of the study and the second ranking on the thirty-fourth day.

administration. Karen met the criterion for receipt of tangible reward on Days 26 and 34.

### DISCUSSION

The data presented provide evidence that changes in the classroom behavior of the students had consistent effects on the teacher's behavior. This evidence is made more compelling through the use of the multiple baseline design. With such a design, if the effect occurs successively only when the treatment is applied, then it is possible to make causal inferences. In this study, the treatment was applied successively across the teacher's behavior toward students. The modifications in both students' appropriate behavior (the independent variable) coincided with increases in the teacher's behavior toward each respective student. The type of teacher social attention, whether predominantly to appropriate or inappropriate student behavior, delivered by the teacher varied for both students as a result of their change of behavior. This is consistent with findings by Klein (1971) that the behavior of college students has a profound effect on teachers, and by Graubard *et al.* (1971), who found that retarded students were able to learn to reinforce specific teacher behaviors. In addition, the quality of the teacher's verbal responses (whether positive or negative), the amount of subjective irritation caused by each student, and the teacher's ranking score for each student appeared to vary as a result of the experimental changes made in the student's behavior.

Two features of the present study merit further discussion. First, the study was modelled on other studies that have attempted to modify a teacher's classroom behavior directly and student behavior indirectly (Cormier, *unpublished*; McAllister, Stackowiak, Baer, and Conderman, 1969). In this type of study, the students' behavior was changed through the intervention of the experimenters, who got the teacher to change his or her behavior through the use of instructions. These investigators held frequent conferences

with the teachers after experimental sessions to provide feedback in the form of praise or criticism to the participating teachers. In some cases, tangible rewards (*e.g.*, college credit) have been provided to secure the teacher's cooperation (*e.g.*, Hall, Fox, Willard, Goldsmith, Emerson, Owen, Davis, and Porcia, 1971). In the present study, an attempt was made to change the children's behavior through instruction in much the same manner that has been generally employed with teachers. That is, the children were told they could improve the classroom behavior of their teacher toward themselves by changing their behavior. Also, the results of this study, as have analogously been reported with teachers (*e.g.*, Hall *et al.*, 1968; Cossairt, Hall, and Hopkins, 1973), indicated that instruction and feedback alone did not sufficiently alter the independent variable (the child's behavior) to produce an effect. It may be hypothesized that these students found the teacher aversive enough (both students stated that they did not like the teacher) that they felt there was no possibility of being rewarded for appropriate behavior. In any case, through the use of tangible reward, both students radically changed their behaviors, with the resulting change in the teacher's behavior toward them.

Secondly, a unidirectional approach was taken. That is, the controlling source of behavior was studied from one source (the student). This is the traditional approach taken by researchers investigating influences on classroom behavior. However, permanent change is more likely to occur when both parties find the interaction reinforcing. Generally, only the teacher's influence on student behavior is observed. This approach has several limitations, as noted by Bell (1968). Perhaps the most serious limitation is that this approach ignores the two-way nature of any social interaction. This oversight may be one factor in the difficulty that behavior analysts have experienced in achieving generalization (Hanley, 1970; Kazdin and Bootzin, 1972; and O'Leary and Drabman, 1971). With a traditional approach, reinforcement from the



intervention specialists is withdrawn from the teacher once the intervention program is complete, and under these conditions teachers may return to pre-intervention teaching techniques. The same pattern appears to have held with Robin. Once the tangible reward was withdrawn, Robin's behavior began to return to a pre-intervention pattern. Graubard *et al.* (1971) noted that the new teacher behaviors established through reinforcement delivered by retarded students ". . . held to some extent even when reinforcement was withdrawn". However, their overall results were similar to Robin's behavior during reversal. That is, the individual's behavior began to revert to baseline approximations. The question raised here, but unanswered, is what contingencies are present that cause the behavior change? This seems to indicate the need to take a broader approach to classroom behavior modification. This approach should include all parties involved in a particular social setting and view all behavior as interactive. The present study has shown that a student can affect a teacher's behavior; other research has shown teachers can affect student behavior. It is also apparent that the parameters of the two participants' behavior in this social interaction appears to be very similar.

An interesting issue associated with this study concerns the relative expense of training education personnel. Teacher training often commands the expenditure of fairly large resources, with sometimes questionable results (Popham, 1971). It has been reported (Walker and Buckley, 1972) that time to train students was relatively low compared to the time necessary to train teachers. This implies that teacher training may not be the most efficient method of establishing appropriate classroom behaviors. If students can be trained with less cost and equal or more efficiency, perhaps we should switch our teacher training institutions to student training institutions. Students certainly appear to have the necessary reinforcing potential to manage teacher behavior. This reinforcing potential of students could be applied in situations where

students are trained to be responsive to specific behaviors emitted by teacher trainees under micro-teaching conditions. Another possibility for the use of students as reinforcers could be in in-service training. Students who are trained to use certain curriculum materials could, by differential responding, shape appropriate teacher behavior in a novice or inexperienced teacher. The major implication, however, is that we begin to consider programs that work simultaneously with students and teachers. There is no more reason to leave student behavior to chance than there is teacher behavior. Perhaps, if each member of the classroom structure, student and teacher, can learn effectively to reinforce appropriate behaviors in the other, enduring ideal learning conditions can be achieved and maintained.

#### REFERENCES

- Becker, W. C., Madsen, C. H., Jr., Arnold, C. R., and Thomas, D. R. The contingent use of teacher attention and praise in reducing classroom behavior problems. *Journal of Special Education*, 1967, 1, 287-307.
- Bell, R. Q. A reinterpretation of the direction of effects in studies of socialization. *Psychological Review*, 1968, 75, 81-95.
- Berberich, J. P. Do the child's responses shape the teaching behavior of adults? *Journal of Experimental Research in Personality*, 1971, 5, 92-97.
- Cormier, W. H. *Effects of approving teaching behaviors on classroom behaviors of disadvantaged adolescents*. Unpublished Final Report, OEG-4-9-520017-0029-057, USOE Bureau of Research, March, 1970.
- Cossairt, A., Hall, R. W., 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, 89-100.
- Graubard, P. S., Rosenburg, H., and Miller, M. B. Student applications of behavior modification to teachers and environments or ecological approaches to social deviancy. In E. A. Ramp and B. L. Hopkins (Eds.), *A new direction for education: behavior analysis 1971*. Lawrence, Kansas: Support and Development Center for Follow Through, 1971.
- Hall, R. V., Fox, R., Willard, D., Goldsmith, L., Emerson, M., Owen, M., Davis, F., and Porcia, E. The teacher as observer and experimenter in the

- modification of disputing and talking-out behaviors. *Journal of Applied Behavior Analysis*, 1971, 4, 141-149.
- Hall, R. V., Lund, D., and Jackson, D. Effects of teacher attention on study behavior. *Journal of Applied Behavior Analysis*, 1968, 1, 1-12.
- Hanley, E. M. Review of research involving applied behavior analysis in the classroom. *Review of Educational Research*, 1970, 40, 597-625.
- Kazdin, E. and Bootzin, R. The token economy: an evaluative review. *Journal of Applied Behavior Analysis*, 1972, 5, 343-372.
- Klein, S. S. Student influence on teacher behavior. *American Educational Research Journal*, 1971, 8, 403-421.
- McAllister, L. W., Stackowiak, J. G., Baer, D. M., and Conderman, L. The application of operant conditioning techniques to a secondary school classroom. *Journal of Applied Behavior Analysis*, 1969, 2, 277-285.
- Madsen, C. H., Jr., Becker, W. C., and Thomas, D. R. Rules, praise, and ignoring: elements of elementary classroom control. *Journal of Applied Behavior Analysis*, 1968, 1, 343-353.
- Ojemann, R. H., Dykstra, F. H., and Pritchett, K. R. *A teaching program in human behavior and mental health handbook V for fifth grade teachers*. Cleveland: The Educational Research Council of America, 1969.
- O'Leary, K. D. and Drabman, R. Token reinforcement programs in the classroom: a review. *Psychological Bulletin*, 1971, 75, 379-398.
- Popham, W. J. Performance tests of teaching proficiency: rationale, development, and validation. *American Educational Research Journal*, 1971, 8, 105-117.
- Sherman, T. M. and Cormier, W. H. The use of subjective scales for measuring interpersonal reactions. *Journal of Behavioral Therapy and Experimental Psychiatry*, 1972, 3, 279-280.
- Tharp, R. G. and Wetzel, R. J. *Behavior modification in the natural environment*. New York: Academic Press, 1969.
- Walker, H. M. and Buckley, N. K. Programming generalization and maintenance of treatment effects across time and settings. *Journal of Applied Behavior Analysis*, 1972, 5, 209-224.

Received 30 April 1973.

(Revision requested 13 August 1973.)

(Final acceptance 27 December 1973.)

## APPENDIX A

### STIMULUS CLASSES AND BEHAVIORAL DEFINITIONS

#### *Appropriate Classroom Behavior*

Follows Instructions:

The student must do as he is told by the teacher in regard to behavior to be performed. This includes any instruction to perform an observable behavior. Example: "Sit down." "Open your book."

Pay Attention to Class Discussion:

Attending to the ongoing class activity without engaging in other unrelated activities. A student may engage in a conversation with another student if it is appropriate to the class discussion. Any such conversation that cannot be heard should be considered inappropriate.

Having Necessary Materials at Desk:

All books, pencils, pens, paper, *etc.* needed for the proposed activity should be ready when the activity begins.

Raising Hand:

The student should raise his hand any time he wishes to speak during a discussion. This does not include acceptable comments made during a discussion that is relevant and acceptable under *Pay Attention* above.

No Talking During Class Direction Time: Anytime the teacher is addressing the whole class, the student should be silent.

Lights Out: The student should go to his seat and sit quietly anytime the lights are turned off; he should sit quietly until given other instructions.

### *Inappropriate Classroom Behavior*

Talks Back: Asking questions regarding any behavioral direction; *e.g.*, in response to "Sit down," the student replies "Why?"; anytime a student asks "Why?" in response to a direction or about the purpose of an activity.

Teacher's Desk: Opening drawers or touching articles in or on the teacher's desk without permission from the teacher.

Out of Seat: Leaving seat during discussion, wandering around the room without permission. A student must have permission to leave his seat unless otherwise directed.

Talking Out During Discussion: Addressing the whole class without permission to speak (without raising hand) or talking to another student on an unrelated topic. This also includes listening to an unrelated conversation. Any conversation that cannot be heard will be considered unrelated.

Not Paying Attention: Playing with materials not appropriate to the class activity, prolonged staring out of the window, head down on the desk, *etc.* Generally any behavior unrelated to the class activity of the time that is not covered by the above inappropriate behaviors.