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ABSTRACT

This is a report on the application of operant condition methods to classroom discipline problems. The setting was Clara Tagg Brewer Elementary School in CLEVELAND, Ohio. The school is located in a community consisting mostly of lower-middle class black families. A few children come from a "run down" section of the community, including most of the disruptive children. The 13 regular teachers, four special teachers, and the pupils of the Brewer School were the subjects of the study. The teachers selected 33 pupils to serve as target children for study. Each of the latter was selected because of his habitual disruptive behaviors. Each teacher was asked to randomly divide target children into experimental and control groups. Operant conditioning methods were equally applied to both groups, but mediation training methods were applied only to the experimental target children. Teachers were also asked to employ other less widely known methods of experimental control, including the "multiple baseline" technique, "probes," the "reversal" technique, and the like. [Because of the print quality, parts of this document are not clearly legible.] (Author/JM)

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The Control of Anti-Social Behavior in Inner-City Classrooms  
Through the Use of Verbally Mediated Self-Control  
(Teaching Verbally Mediated Self-Control in the Classroom)

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The University of Akron

August 3, 1971

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## INTRODUCTION

Most educators know that disruptive classroom behaviors reduce our schools' effectiveness but few are aware that we now have powerful new methods that can eliminate most classroom misbehaviors. The new tools have been developed at a time of increasing classroom problems, particularly among inner-city schools and disadvantaged children. This is a report on the success of operant conditioning methods in eliminating classroom discipline problems. The importance of these new methods become clear when we consider the high cost of discipline problems.

### COSTS OF DISCIPLINE PROBLEMS

We can categorize classroom discipline problems as follows: lost teaching-learning time, dismissal of potentially productive teachers, resignation of productive but unhappy teachers, low teacher morale, administrative time, and increased school-community conflict. To highlight the importance of the powerful new tools of behavior control, each of these costs will be discussed in some detail.

#### Teaching-learning Time

Misbehavior distracts children from learning. Not only does the misbehaving child fail to engage in learning activities, he also frequently prevents other children from concentrating on the work; but perhaps the most widespread costly effects of misbehavior upon teaching and learning occurs when a child's disruptive behavior interferes with the teacher's tasks. When this happens, all children in the classroom may suffer from poor teaching. Unfortunately, in many classrooms, one to three misbehaving children drastically reduce teaching effectiveness by their continual misbehaviors. A recent survey of teachers enrolled at The University of Akron indicated that, on the average, 20 minutes of each teacher's school day is spent on discipline problems, and some teachers spend 60 to 120 minutes of class time each day dealing with misbehavior.

Many potentially good teachers are dismissed because of inability to handle discipline problems. Although the number of dismissals due to inability to maintain classroom order is buried in the statistics of voluntary resignations, study after study has shown that a high percentage of teacher dismissals can be traced to failure in classroom control. For example, Griffith (1958) interviewed 214 Iowa superintendents in a five

year study and found that inability to control students was the major factor in teacher dismissals. There is a critical level of survival skills which must be reached before a teacher can demonstrate excellence in teaching. No matter how excellent his instructional skills; no matter how deeply he loves children; if he cannot handle discipline problems he is unlikely to have the opportunity to fully develop his dormant talents. Fortunately, many of our teachers do attain the necessary critical level of survival skills; however, it is a too frequent and an unnecessary tragedy when a potentially excellent teacher is dismissed because of failure to learn classroom management skills.

#### Teachers Who Leave the Profession

Not all tragically wasted teachers are dismissed. There is a fourth category of costly results of discipline problems. Here we list the teacher who shows so much promise that the principal wants to renew the contract but the teacher finds his work so repugnant, due to discipline problems that he deserts the teaching profession. Such teachers, if they had effective classroom management skills, would enjoy teaching and would not be lost. The University of Akron survey indicated that 14% of the experienced teachers had resigned a position or considered resigning because of discipline problems.

#### The Kind Teacher With a Frown

Many teachers stay in the classroom but fall short of excellence merely because they lack critical skills of classroom management. Such teachers may be potentially outstanding but with great effort, they attain only mediocrity. With their contracts regularly renewed, they continue teaching but live in quiet desperation as they struggle frantically day after day to keep a semblance of order in the classroom. Some go home nervously exhausted almost every evening and some have nightmares about losing control of classes (although they seldom confess such weaknesses). There are others who deeply love children; who like to laugh, joke, and play but who find themselves being sober, frowning, and punitive. These are the nice, kind-hearted ones who are devoted to children but whom the children perceive as mean, humorless and hateful. These potentially joyful teachers are saddened by their own ways but they dare not relax, take off the masks they wear, and be themselves. They know; they have tried and every time they relax the children go wild. So they remain stern teachers, "successful" teachers, but unhappy teachers of unhappy children.

Since ability to handle children is a sign of competence and few brag about incompetence, much teacher unhappiness concerning behavior problems goes unexpressed. However, repeated research shows that teachers are deeply perturbed by classroom discipline problems. Ball (1961) found that, in bi-weekly discussion meetings, beginning teachers most often talked about class disturbances; Elliott (1956) found that maintaining good discipline was highly important to new teachers in St. Louis; Scheller (1958) found maintaining pupil control to be most important to beginning teachers; and Kaplan (1952) found that 84% of the problems cited by experienced teachers dealt with the behavior of children. So, teachers who seldom talk about discipline problems may be simply teachers who are careful.

#### Administrative Time

If the teacher does not have effective classroom control, he must look to the administrator for help. This help is costly to the school system in time which the administrator should be using in the administrative processes on behalf of the goal implementation of the school. Any experienced administrator can readily testify to the hours of his time required to mediate in a parent-student-teacher squabble, time that is lost to him in effective planning for the school.

#### Increased School-Community Conflict

If a teacher fails to control his classes, and the administrator has to intervene, it becomes a "cause celebre" in the community. If this conflict is not settled to the satisfaction of the parent, his attitude toward the school may be such that he withdraws his moral and financial support from the school and urges his friends and acquaintances to do the same. There are documented cases in which discipline conflicts between parent and school have caused dismissal of administrators and produced a disruptive schism within the community.

Unfortunately, the costs of discipline problems are not only high but they also are unevenly distributed; most of the cost falls on inner city children and educationally deprived children. However, newly developed methods of reducing misbehaviors may alleviate the problem.

#### EFFECTIVENESS OF OPERANT CONTROL OF MISBEHAVIORS

During the last decade, many different researchers have tested operant conditioning methods for effectiveness in

controlling anti-social behaviors. Ayllon and Michaels (1959) were probably the first to report an application of operant control to a group situation. They successfully applied the methods to disruptive behaviors of psychiatric patients. In working with social behaviors of retarded patients, Blackwood (1962) and Rosen (1968) found operant methods effective in producing socially appropriate behaviors. Striking changes in prison behaviors using operant methods were reported by Cohen (1968) and Schwitzgebel (1970) found operant methods successful with adolescent delinquents.

When methods work with such difficult subjects as the mentally retarded, psychiatric patients, prisoners and adolescent delinquents, it seems reasonable to expect them to work in classrooms. This expectation has been confirmed by recent research. Disruptive classroom behaviors have been eliminated in emotionally disturbed boys (Zimmerman & Zimmerman, 1962). Misconduct has been controlled in a small special class by operant techniques (Quay, Werry, McQueen, & Sprague, 1966) and in elementary school classrooms (Thomas, Becker, & Armstrong, 1968; McIntire, Jensen & Davis, 1968; O'Leary & Becker, 1968; & Hall, Lund & Jackson, 1968). Becker and Thomas (1968) found operant conditioning procedures very effective in reducing the frequency of problem behaviors in a second-grade class and a kindergarten class. Hall, Lund & Jackson (1968) used the methods to successfully reduce dawdling and disruption while increasing frequency of study behaviors in elementary school children. It has been successfully demonstrated that public school teachers can be trained to manage disorderly children by using operant procedures (Becker, Madsen, Arnold & Thomas, 1967).

Fears that operant conditioning procedures would have adverse effects upon the children's psychological adjustment were not supported in a careful study by Ward and Baker (1968). Our informal observations had indicated that teachers who employ operant procedures in classroom management become less critical, less negative, more patient, and more positive and pleasant. This is not surprising since operant conditioning skills enable a teacher to make more effective use of positive reinforcers.

The empirical evidence seems clear; operant conditioning can be highly effective in eliminating disruptive classroom behaviors. However, reduction of misbehavior is not necessarily synonymous with elimination of misbehavior. The data often shows that, while the unwanted behavior is reduced enough to be highly reinforcing to teachers, attendants, or other group workers, the post-treatment response rate still falls far short of ideal. For example, while Hall, Lund and Jackson (1968) were successful in

increasing study behavior of disruptive children, their graphs indicate that at the conclusion of the study the children still disrupted class or dawdled from 5 to 20 percent of the time. In another study, Ward and Baker (1968) reduced disruptive behaviors from 74% to 37% and in still another study Madsen, Becker and Thomas (1968) reduced disruptive classroom behaviors to 15.1%. Each study cited and most other accounts of classroom operant conditioning clearly demonstrate that operant conditioning strikingly reduces misbehavior but that, in spite of great improvement, the teacher still faces serious disruption. How relieved a teacher must be when disruptions are reduced from 74% to 37% of the time. But, how can a teacher teach effectively when her class is disrupted even 37% of the time?

Also, while the published reports indicate that operant conditioning can be effective in eliminating disruptive classroom behaviors, the methods used sometimes require much teacher attention and yet the misbehavior may disappear only after many days or even weeks have passed. So, methods which place less load on the teacher and produce quicker results might be more readily accepted by classroom teachers.

#### MEDIATION TRAINING FOR GREATER CONTROL

The reported methods of operantly controlling misbehaviors have all employed "simple operant conditioning" of the type used to manipulate the bar pressing behavior of rats. Research and theory in verbal behavior (Skinner, 1957; Holz & Azrin, 1966), and mediating verbal behavior (Kendler & Kendler, 1962) suggest that more effective variations of the simple operant methods might be developed for complex humans.

Such methods had been developed in exploratory work by the author of this report (Blackwood, 1958). In using the method it is assumed that self-control consists, to a great extent, of cueing one's own behavior with covert verbal self-produced stimuli. That is, covert verbal behavior (thinking) mediates between the tempting stimulus situation and overt responses when a child shows self-control. Lack of self-control is often impulsive behavior in which no covert verbal responses or thinking occurs between the cues for misbehavior and the acting out responses. If a child who is tempted to misbehave can be trained to briefly inhibit his impulsive act and to describe to himself the consequences of the action, the verbal description may replace the external tempting cues as stimuli controlling the child's behavior.

Interviews carried out in exploratory work with children had suggested that misbehaving children who do not respond rapidly to simple operant conditioning do not have the necessary verbal mediating skills. That is, they do not think before they act.

Unfortunately, teachers and parents seldom use optimal procedures to teach these children the verbal mediating skills needed for self-control. A teacher may say, "If you cut up in class you will miss important things. Then, because of what you miss, tomorrow or the next day you may not be able to understand and class will become difficult or boring." She may repeat this dozens of times, evidently maintaining faith, after repeated failure, that her words will control the child's behavior. It is not the teacher but the child who should be verbalizing the consequences of his behavior if the words are to act as stimuli controlling the child's actions at the time of temptation to misbehave. The child needs to learn to describe the consequences of his behavior but the teacher repeatedly tells him the consequences. Does a child learn a skill when his teacher practices it? At least, we can say that observation is not a very effective way of learning complex skills. Yet, when we questioned 73 teachers enrolled in a graduate course in education, almost all described what the teacher should say to a misbehaving child. Not one of the teachers suggested any kind of plan which would give the child practice in thinking about his behavior and its consequences.

An example might clarify the point. A toddler was allowed to play in the fenced back yard with older neighbor children while the father tried to do his work and baby-sit. The older children treated the toddler like a doll, picking her up and playing with her. However, the toddler preferred freedom, and each time she was picked up, she cried loudly. The father repeatedly dropped his work, went outside and explained, "Put her down, she doesn't like to be held. You can play with her on the ground, but every time you pick her up I have to come out to see if she is really hurt, etc." Days of repeated lecturing did not reduce the frequency of picking up the toddler.

Finally the father changed his tactics. The next time he had to get his toddler out of an older girl's arms, he said to the older girl, "Come here. Stand right here. Now, I am going to ask you some questions. If you answer them, you can go on playing. If you don't, I'll send you home and you cannot come back here today to play. Now, the first question: what were you doing wrong?" If the girl did not refer in her answer to picking up the toddler, the father explained the answer, then demanded that the girl verbalize it.

The second question was, "Why should you not pick her up?" The answer, "Because she will cry," was sometimes given but the father insisted that the girl also describe the new unpleasant consequences, the father coming out and making her answer questions.

The third question, "What should you do when you want to play with her?" produced only silence in the older girls at first. The father trained them to describe some alternative ways of having fun with the "doll-like" toddler.

Although several neighbor children had been involved and consequently the toddler had been crying every few minutes, within two days of the introduction of the new procedures, the problem had completely disappeared.

In this example, nothing was accomplished as long as the father practiced verbal behaviors which the older children should have emitted to themselves when tempted to pick up the toddler. But when the older children were made to practice this thinking aloud, success was almost immediate.

The pilot study which was carried out before initiating the present project (Blackwood & Thompson, 1960) also illustrates how the method works. In this study, Thompson selected as his subjects the most troublesome child from each of his six classes in sixth grade science. Before initiating the experimental treatment, the frequency of misbehaviors was observed for 12 school days to establish a baseline or operant level.

A sequence of four treatment stages was planned--(1) simple operant conditioning, (2) copying a mediation essay, (3) paraphrasing the essay and (4) writing the essay from memory--but, contrary to the experimenters' predictions, the disorderly behaviors were almost completely eliminated shortly after the introduction of the second treatment stage.

The first treatment stage consisted of simple operant conditioning. In earlier exploratory work it had been found that most teachers inadvertently extinguish desired behaviors and condition misbehaviors in the classroom. This is consistent with the findings that the more often a first grade teacher told children to "sit down," the more often they stood up and only praising for remaining seated increased time spent in the seat (Madsen, Becker, Thomas, Koser & Plager, 1967). A careful operant analysis of the classroom reinforcement contingencies, with special emphasis upon such factors as the reinforcing effects of teacher attention, made it clear to the teacher that misbehavior "paid off" in his class and that desired behavior was often extinguished. During the 12 days

of the first treatment stage new teacher behaviors were introduced which were designed to change the reinforcement pattern. The teacher began to "pay off" desired behaviors with attention and other reinforcers. He also extinguished undesired behaviors. No complex procedures, such as the use of tokens, were employed.

As Figure 1 indicates, there was a slight reduction in frequency of misbehaviors during the first treatment stage. It could be inferred from past studies that if simple operant conditioning procedures had been continued long enough, the misbehaviors eventually would have been eliminated. However, as the graphs indicate, a striking reduction in rate of misbehaviors occurred shortly after the introduction of the second phase of treatment.

Treatment phases 2, 3, and 4 were designed to get the child to think before acting, to describe the consequences of misbehavior to himself when tempted to misbehave, and to describe what he should be doing and why. Interviews with misbehaving children who did not respond quickly to simple operant conditioning had shown that many of these children simply cannot describe accurately the consequences of their behaviors (Blackwood, 1958, mimeographed). Therefore, the experimenters first constructed an essay, in the language of the children, describing the consequences of classroom conduct. The essay consisted of answers to the four questions: (1) What did I do wrong? (2) Why should I not \_\_\_\_\_? (3) What should I have been doing? (4) Why should I have been \_\_\_\_\_?

The answer to the first question was, of course, the description of the child's misbehavior. The answer to question 2 was a list, in paragraph form, of the probable undesirable consequences of the misbehavior, from the child's point of view. For example, "If I cut up, my teacher may give me this essay to write or keep me after school. If I cut up, I miss important things in class. Then, I cannot understand what is going on in class and school becomes boring and rough."

The answer to question 4 consisted of a list of the reinforcing consequences of studying or paying attention to classroom learning activities.

During the second treatment phase, the misbehaving children were merely required to copy the essay. This was simply to familiarize them with the contents. We expected that the other projected treatment stages would be needed to make the essay meaningful to the children and to get these verbal descriptions of consequences under stimulus control of situations which trigger off misbehavior. During the second phase, if a child misbehaved the teacher first gave a quiet signal to desist, such as a shake of the head. If

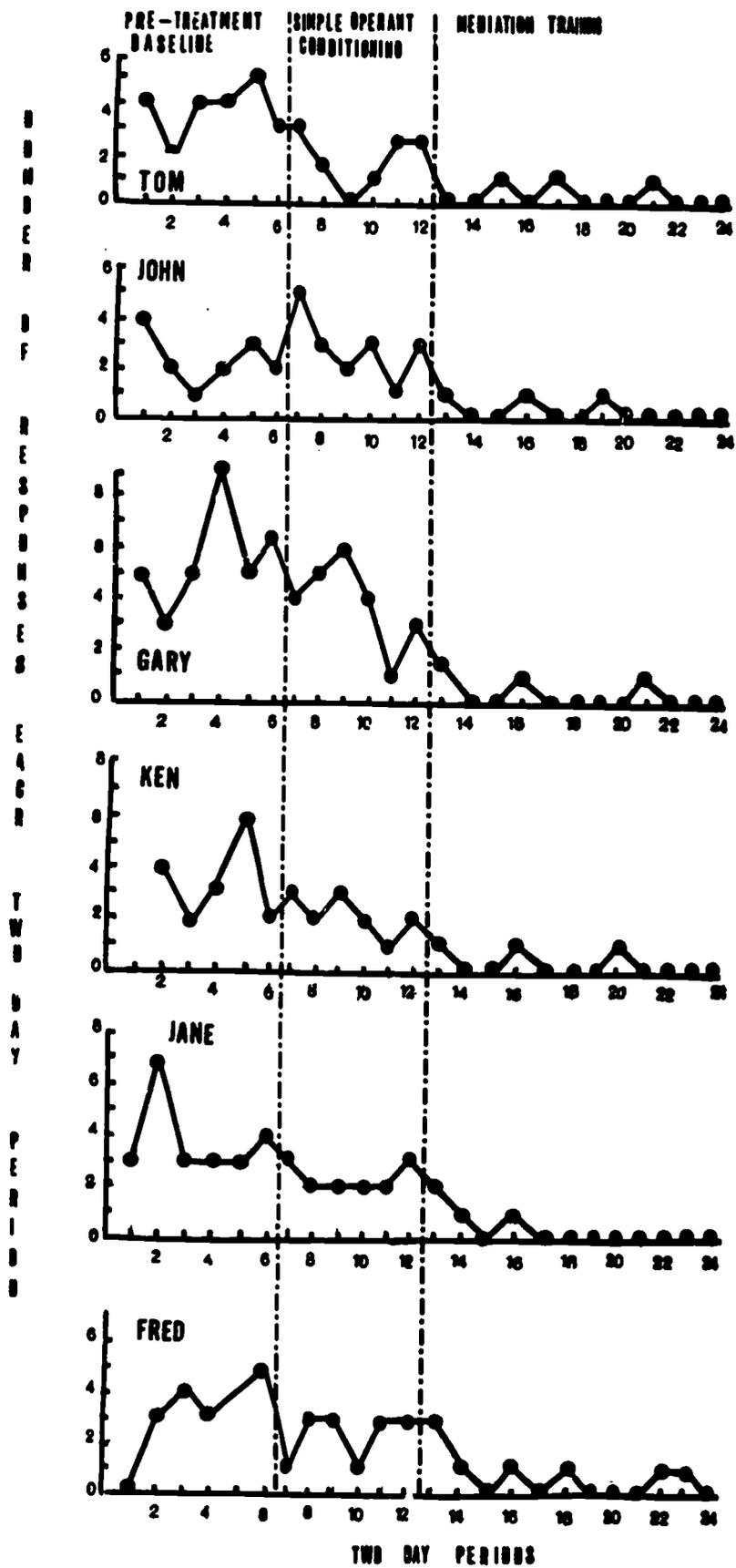


FIG. 7 MISBEHAVIOR FREQUENCIES DURING BASELINE CONDITIONING, SIMPLE OPERANT CONDITIONING, AND MEDIATION TRAINING



the misbehavior continued, the teacher quietly walked back to the student's desk and placed a mimeographed copy of the essay on the student's desk. The student had been instructed to turn in a hand-written copy the next day. As the graph shows, for each of the 6 subjects, just after we started Phase 2, there was a sharp reduction in misbehavior rate.

The copying of essays employed in this experiment is distinctly different from writing tasks which teachers typically assign. Teachers frequently require the student to write "I will not throw spitballs," or "I will stay in my seat," but, from an operant conditioning viewpoint, such methods cannot be expected to have much influence upon the child's behavior. It is not describing what he should or should not do that is crucial, but learning to describe the consequences (the contingent reinforcers) of the behavior. Sometimes, teachers simply assign the question, "Why should you stay in your seat?" without providing the child with any answers. This approach almost never works with a problem child since he has, for years, failed to construct adequate descriptions of the consequences of his actions. The teacher need only look at the finished essay, to see that the child needs to be taught to verbalize the reinforcement contingencies. He needs to practice the skills of thinking up and describing the consequences of his behaviors. It is as foolish to expect him to invent these verbal skills as it would be to expect the child to invent the complex gymnastic stunts taught in physical education or to invent all the complex skills learned in mathematics classes. The typical essay-writing assignments have very little in common with those used in our pilot study.

Another key point: the content of the essays probably have to be truthful to be effective. That is, if misbehavior really pays off, but the essays say otherwise, then the theory predicts that any reduction in rates of misbehavior would be temporary. In technical terms, stimulus control by the verbal mediating stimuli would be extinguished quickly. Therefore, reorganization of the teacher's procedures, based upon an operant analysis of the classroom, is probably a necessary foundation for successful training of self-control through verbal mediation.

The results of the pilot experiment described above and previous experiences suggest that the new method is highly effective. However, since other hypotheses could account for our results, controlled studies are needed.

The mediation training procedures have been shown to exceed typical conditioning methods in eliminating misbehaviors. For example, in one study a number of children in the eighth and ninth

grades still misbehaved frequently even after exposure to typical operant conditioning procedures (Blackwood, 1969). Half of these children were then exposed to mediation training and half were used as a control group. Mediation training completely eliminated the misbehaviors of all but one of the experimental subjects while the frequency of the control group misbehaviors decreased only slightly.

Three different studies have been conducted in which the teacher selected from his classes the children with the most serious behavior problems. In one study (Blackwood & Wycuff, 1969) typical operant conditioning methods were first used and they significantly reduced but did not eliminate the misbehaviors. Then each of the children was given mediation training. The result of the mediation training was almost complete elimination of misbehaviors in all but one subject. In the other experiments the subjects were randomly divided into experimental and control subjects. After misbehaviors had been reduced by typical operant conditioning methods, the experimental subjects were given mediation training while the control subjects were punished for misbehaviors. The two experiments were not exactly alike so the results differed. In one experiment (Blackwood & Pitea, 1960), punishment had little effect while mediation training almost completely eliminated misbehaviors. In the other experiment (Blackwood & Wolfe, 1969) both punishment and mediation training reduced misbehaviors to a low rate but mediation training was more effective than punishment. Specifically, punishment reduced misbehaviors to an average of 1.13 per day while mediation training reduced misbehaviors to only 0.17 per day.

The two studies just mentioned (Blackwood & Pitea, 1960 and Blackwood & Wolfe, 1969), were designed to test the hypothesis that mediation training is more effective than merely assigning the punishing task of writing an essay. Lots of teachers have punished misbehaviors by making the offenders copy a page from the encyclopedia and in many cases this treatment does suppress misbehaviors. However, mediation theory suggests that copying and paraphrasing an essay which spells out the contingencies of reinforcement should have greater and longer lasting effects than a mere punishment writing task.

The results of the Blackwood and Pitea study are shown in Figure 2. Note that before treatment (baseline) the experimental and the control groups have approximately equal frequencies of misbehaviors with the experimental subjects misbehaving at a slightly higher rate than the control subjects. Both groups respond about equally to simple operant conditioning. This phase was probably too short (5 days) so that simple operant methods might have been more effective if more time had been invested in it. During the Essay Treatment, the experimental subjects were assigned a mediation essay contingent upon each misbehavior while

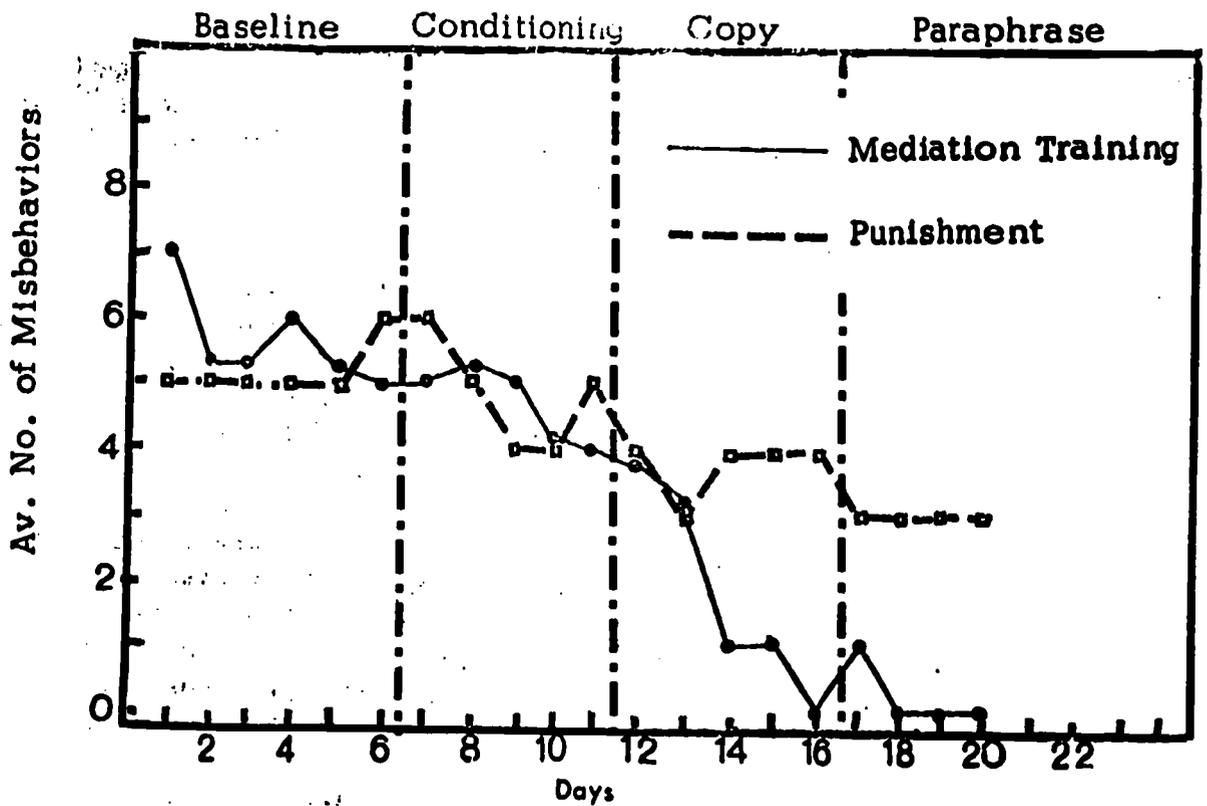


Figure 2. Misbehavior frequencies for (1) mediation trained and (2) punished groups. (Pitea).

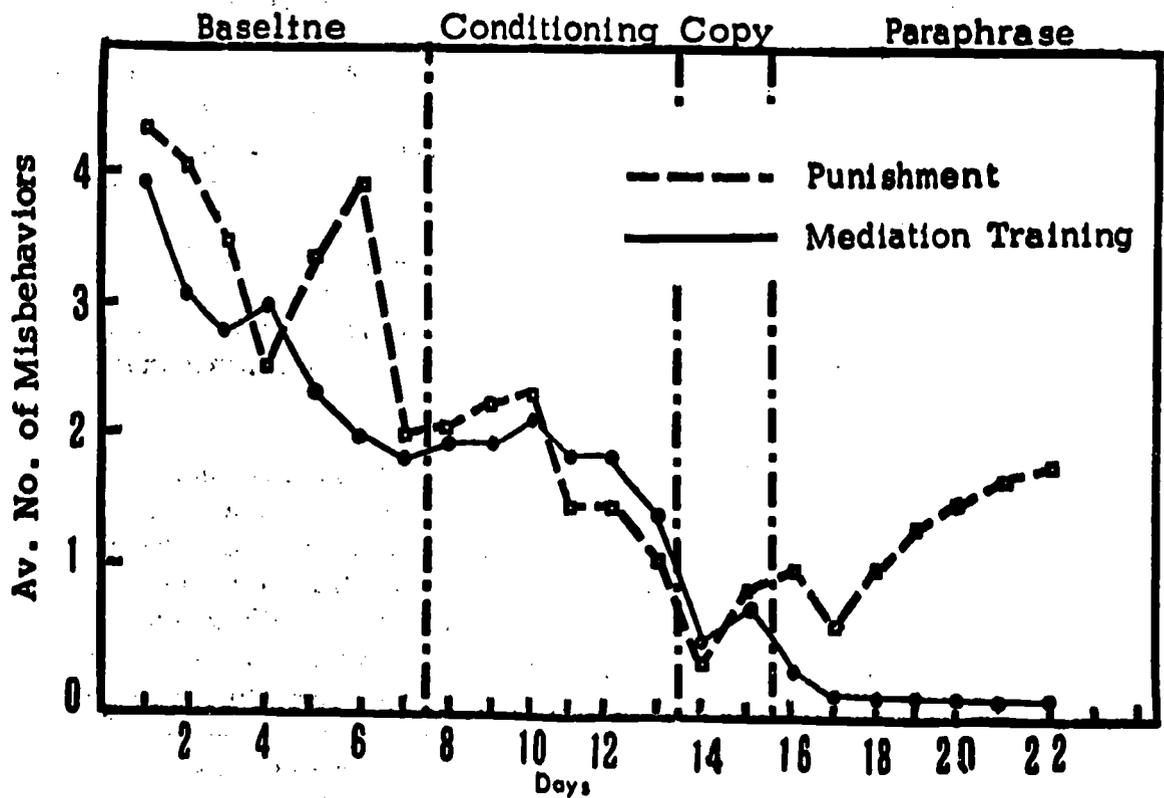


Figure 3. Misbehavior frequencies for (1) mediation trained and (2) punished groups. (Wolfe).

the control subjects were assigned a punishment essay. The punishment essay was similar to the mediation essay in length, format, readability but did not discuss the misbehaviors, appropriate behaviors, or consequences. Instead, the punishment essay dealt with the life of a famous baseball player.

Note that the essay procedure had different effects on the two different groups; the punishment essay seems to have reduced the disruptive behaviors of the control group slightly while the mediation essay's effect upon the experimental group was to practically wipe out all disruptive behaviors.

The results of the Blackwood and Wolfe (1969) study is shown in Figure 3. Note that the baseline slopes to the right, indicating that the teacher could not refrain from using his newly learned operant methods even though he was instructed to continue his previous methods until after the 24-day baseline observation period. Inspection of the Essay Treatment phases in the graph shows that both the experimental group (getting the mediation essay) and the control group (receiving the punishment essay) demonstrated reduced rates of misbehavior. However, the punishment essay seemed to gradually lose its effect, as shown by the gradual rise in the number of misbehaviors in the control group. The control group, on the other hand, showed a decline in misbehaviors to almost zero, indicating the greater power of the mediation essay in controlling misbehaviors.

All the studies cited here were carried out under the supervision of the author of the present report by individual teachers who had become interested in operant conditioning and mediation training. The funded project with which the present report deals was designed to test the effects of the application of simple operant conditioning and mediation training not merely on an individual teacher, but on a whole school. It was hypothesized that (1) in group meetings teachers can be trained to reduce or eliminate misbehaviors using simple operant conditioning and mediation training and (2) mediation training is more effective than punishment when applied after the introduction of operant conditioning procedures.

## METHOD

### Subjects

The setting of the present study was Clara Tagg Brewer Elementary School in Cleveland, Ohio. Brewer School is located in a community consisting mostly of lower-middle class Black families living in

small, well-painted houses surrounded by neat, green lawns. A few Brewer School children come from less attractive homes in a deteriorated section of the community. Teachers report that many of the disruptive children live in the "run down" section of the community.

The 13 regular teachers, four special teachers, and the pupils of the Brewer School were the subjects of the study. Each individual teacher was asked to choose a few target children for study, selecting those whose behaviors most frequently disrupted learning in the classroom.

Altogether, the teachers selected 33 pupils to serve as target children. Each target child was selected because of his habitual disruptive behaviors. Of the target children selected, ten made excessive noises in class, nine regularly failed to complete assigned work, seven repeatedly talked at inappropriate times, two frequently annoyed neighbors, two were frequently out of their seats without permission, one repeatedly caused disturbances by manipulating objects on his desk, one was a tattler, and one kept turning around in his seat.

### Design

The study was designed to replicate the pilot study described in the Introduction but to include a larger sample of students and teachers and more adequate controls. However, even the present study was somewhat exploratory in nature since an ideal experimental design would have required a much larger, more expensive project. For example, it would have been difficult, perhaps impossible, to arrange for randomized experimental and control groups of teachers within one school. For the teacher, misbehaviors are serious problems and remedies are eagerly sought so that even in the pilot study other teachers cross-examined the experimenter-teacher and adopted some of his methods. So, due to the problems of control, administration, cost, and busy teacher schedules, the study was exploratory in nature rather than a truly definitive test of operant and mediation methods.

However, some experimental control was possible. Each teacher was asked to randomly divide target children into experimental and control groups and, while operant conditioning methods were equally applied to both groups, the mediation training methods (employing the essay) were applied only to the experimental target children. In this way, it was expected that the effectiveness of the essay procedure could be tested.

Teachers were also asked to employ other methods of experimental control which are less widely known (Sidman, 1960; Bear, Wolf & Risley, 1968). These experimental designs involve the

"multiple baseline" technique, "probes," the "reversal" technique, etc., and were specifically developed to meet some of the problems encountered when important questions can only be researched in complex, applied settings where traditional methods of experimental control are not possible.

For example, the "multiple baseline" technique may be most appropriate for some of the behavior problems selected by teachers. This design is an elaboration of, and an improvement upon, some of the time-series designs (Campbell & Stanley, 1960) or the baseline design (Sidman, 1960). The data from our pilot study, Figure 1, represents a typical single time series or baseline study in which the subject is his own control. When stable rates at different levels can be demonstrated before and following treatment, and significant change occurs just after application of treatment, the data lends some, although very weak, support to the hypothesis that the rate of behavior is dependent upon the treatment. However, it is obvious that this design does not eliminate all alternative hypotheses. On the other hand, repeated reversals on "multiple baseline" designs make possible a more rigorous test of a hypothesis and yet is easier to arrange in applied classroom settings.

"In the multiple-baseline technique a number of responses are identified and measured over time to provide baselines against which changes can be evaluated. With these baselines established, the experimenter then applies an experimental variable to one of the behaviors, produces a change in it, and perhaps notes little or no change in other baselines. If so, rather than reversing the just-produced change, he, instead, applies the experimental variable to one of the other, as yet unchanged, responses. If it changes at that point, evidence is accruing that the experimental variable is indeed effective and that the prior change was not simply a matter of coincidence. The variable then may be applied to still another response, and so on. The experimenter is attempting to show that he has a reliable experimental variable, in that each behavior changes maximally only when the experimental variable is applied to it." (Baer, et al., 1968, p. 94).

An example of the possible use of the multiple baseline technique in the present project would be as follows: A child is observed disturbing class frequently with his talking, chewing gum almost constantly, and coming to class without paper, pencil, and textbooks. First, pre-treatment data is collected to determine the average frequency of the three target responses. Then treatment is applied to the three behaviors, not simultaneously but sequentially. That is, treatment is applied to the talking behavior first. If the frequency of talking is reduced significantly, then the treatment is applied to gum chewing. Assuming that there is then a striking reduction in gum chewing, the treatment is then applied to the behavior, "bringing equipment and materials."

If each behavior changes in the predicted direction soon after the initiation of treatment of that behavior and if none of the behaviors change significantly at other times, this provides important data supporting the hypothesis that the treatment is effective.

In the "repeated reversal technique," the independent variable is repeatedly varied from one level to another. If each time the value of the independent variable is changed, the response rate changes, a hypothesis of a relationship is confirmed.

While each of the above methods of control was described to the teachers and they were encouraged to employ one or more of them, the teachers were reluctant to employ control procedures because, in spite of their simplicity, the procedures (1) increased the load of an already overloaded teacher and (2) permitted disruptions which the teacher wished to eliminate. Once teachers learned to control misbehaviors, they tended to reject the idea that the behavior should, for scientific purposes, be allowed to recur. As a result, only four teachers volunteered to carry out reversals, providing data for a time series or baseline experiment.

#### Reliability of Teacher Observations

In a school-wide application of operant conditioning and mediation training, to have a trained observer collecting data in each classroom would be costly. Therefore, teachers were trained to record their own data on the forms shown in Appendix A. To determine the reliability of teacher observations of the frequency of misbehaviors, a paid observer made sample observations. The observer sat in the back of classrooms at selected times and recorded the occurrence of the target behaviors being observed by the teacher. Ten teachers were selected for the reliability checks. Data on these teachers were collected for approximately four hours during the baseline period, four during the treatment period, and four hours following the completion of the last stage of treatment. Spearman's rank order correlation coefficient was computed on the daily frequency tallies to determine the agreement between the teachers and the observer.

#### Procedures and Materials

The teachers were first trained in the operant conditioning methods which have appeared in the literature on educational applications of operant methods, referred to here as "simple operant conditioning." Secondly, they were trained in the "mediation training" methods which were described in the introduction. A series of meetings were held and each meeting dealt with one or

more of the following topics, in the sequence indicated:

1. Selecting and defining target behaviors.
2. Recording and graphing data.
3. The reinforcement explanation of behavior.
4. Extinction: How to break habits.
5. Switching payoff: How to build habits.
6. Satiation and Deprivation: How to enrich your classroom.
7. Shaping: Start where they are.
8. Aversive control: The use and misuse of punishment.
9. Schedules of reinforcement: When to reinforce.
10. Conditioned reinforcement and the token economy.
11. Stimulus control: How to make your cues and signals work.
12. Chaining and routines
13. Mediation Training for self control.
14. Modeling

During the two weeks between the second and the third meetings, the trainees collected baseline data on the frequency of the target behaviors. The instructions were to avoid using the operant techniques until after the baseline data had been collected. In this way, changes after introduction of operant techniques could be compared with the average response rate during the baseline period. Of course, it was recognized that in early September the frequency of disruptive behaviors would not be representative of typical conditions during most of the school year, making an unfair comparison. However, in order to get the project under way in time to complete it on time, the decision was to accept this early September baseline.

On the Monday after each training meeting, trainees introduced into their classrooms the new techniques learned on Saturday. Techniques were introduced sequentially as listed in the above list of topics. However, in graphing their data, clear distinctions were only (1) between the pre-treatment baseline and the treatment with simple operant conditioning and (2) between the simple operant phase and the mediation training phase beginning the 15th week

of school. Those teachers who employed the reversal technique also indicated the onset and termination of the reversal on their graphs.

The teachers' records of target behaviors and records of office referrals were kept until the last week of school.

The mediation training stage of the experiment was introduced after it was judged that the teachers had successfully rearranged their classroom practices so that misbehaviors no longer paid off but, instead, desired behaviors were reinforced. The mediation training procedure consisted in giving the misbehaving child practice in verbalizing the consequences of his behavior -- thinking before acting. From the second grade up, the child was initially made familiar with the consequences of his behavior simply by copying an essay describing the consequences, by paraphrasing the essay, by composing it from memory, and by role playing its consequences. At lower grade levels, oral methods of presentation were used. The descriptions of the consequences were developed by the teachers and the principal in cooperation with the project director at a meeting just prior to the initiation of this stage of treatment. Some of the mediation essays that were developed are presented in Appendix B.

In practice, when a child misbehaved the teacher first silently signaled him to desist. If the misbehavior continued, the teacher dropped an essay on the child's desk with instructions for the child to copy it. Procedures were developed for administering the essay without inadvertently reinforcing the child with attention and also for dealing with children who were reluctant to comply with the assignment.

It was at this stage that the teachers were instructed to treat experimental and control children differently: to test the effectiveness of mediation training, control children were not given mediation training essays but simple punishment essays such as those exhibited in Appendix C. These control essays had nothing in them to help children learn to think about the consequences of their behaviors. Therefore, presumably their only effect on the child's behavior would be that of punishment -- having to perform the unpleasant task of copying the essay. This comparison was designed to test the hypothesis that mediation training is more effective than simple punishment by the assignment of an essay to copy.

Reading materials, which had been developed earlier by the principal investigator, were provided to the teachers in advance of each meeting. A sample of these materials is presented in Appendix A. Since completion of the project, these instructional materials have been refined, elaborated, and published (Blackwood, 1971) and are being used in various training programs.

Lectures proved to be a relatively ineffective method of training teachers in operant methods. Instead, the teachers were encouraged to read the written materials, short lecture-discussion reviews were held, and then work sessions or planning sessions were conducted. Since each teacher had chosen up to three target children and was keeping a running frequency count of the target behaviors, it was easy to make these work sessions deeply meaningful by relating them to each teacher's target problem children. Work sheets of planning forms were developed for this purpose. These forms were designed to guide a teacher in making specific plans for target children and, for each topic covered, a form was developed. For example, when extinction was studied, the teachers filled out the appropriate forms as they developed their plans for applying extinction techniques (See Appendix A).

In most meetings, the planning was done in small groups of four or five. These planning sessions followed the review and general discussion. After the plans had been developed, all the teachers met together again in a large group to discuss problems involved in plan development.

To illustrate the structure of the training meetings, the agenda of one of the meetings is given in Appendix A. This agenda shows the balance between large group activities and small group work which was employed. This procedure was designed to reduce monotony and boredom, to increase interest, and to get the participants actively involved.

Each trainee attended seven funded meetings. For attending each of these meetings, participants were paid \$18.75. The two and one-half hour meetings were held on the following dates:

Saturday, June 7, 1969

Saturday, September 6, 1969

Saturday, September 19, 1969

Saturday, October 3, 1969

Saturday, October 17, 1969

Saturday, November 8, 1969 (Only half of the participants attended)

Tuesday, November 11, 1969 (The other half of the participants attended)

Saturday, November 29, 1969

The seven meetings proved inadequate and the trainees asked for further training in the mediation training techniques. Therefore, two additional meetings were held (January 8 and January 15, 1970). The trainees attended these meetings voluntarily, without stipend.

Much planning was required to make the meetings productive. For this purpose, the consulting principal, the administrative assistant, and the principal investigator held 15 planning meetings. In addition, much planning was conducted by telephone.

### Findings and Analysis

Several categories of results are discussed: (1) teacher involvement; (2) decrease in referrals to the principal's office; (3) effects on the frequency of misbehaviors of target children; (4) effects of mediation essays as compared with punishment essays; (5) teacher's informal reports concerning the effects of the training; (6) principal's report of the project's influence; (7) newspaper publicity promoting the methods employed, and (8) training programs growing out of the project.

#### Teacher Involvement

Originally, all the teachers volunteered to participate in the training program. However, one teacher withdrew for personal reasons after the first meeting. This teacher, as judged by office referrals and complaints from students and parents, needed the training as much or more than any of the other teachers. However, efforts to keep him involved in training failed and there is no evidence indicating whether or not this teacher could have been helped by the training program.

A second teacher dropped from the program after a number of meetings. This teacher was not mastering the skills and concepts, perhaps because of involvement in university evening courses and other competing activities. Again, there is no data to indicate whether or not this teacher could have been trained in the operant and mediation procedures.

The other teachers attended throughout the series of meetings with only occasional absences. In fact, they requested two additional meetings after the grant funds had been exhausted. Voluntary, unpaid attendance at these meetings was very good.

In reading the following parts of this report, it should be kept in mind that the data does not include the two "dropout" teachers or the office referrals from their classrooms.

#### Decrease in Referrals to Principal's Office

During the year prior to the initiation of the project in operant control and mediation training the principal's office in Clara Tagg Brewer school was often busy with children referred for "disciplining" and from time to time the office was inundated with referrals. Unfortunately, frequency counts of these referrals had not been kept. In September of 1969, the recording of all office referrals was initiated so that the effects of the training program could better be evaluated. Unfortunately, it was not possible to postpone treatment until the children reached their normal mid-year level of behavior. The baseline data for the study was obtained from the first two weeks of school when, as any principal will recognize, misbehavior seldom reaches the heights which will be seen two or three months later. Yet, as Figure 4 shows, there were frequent office referrals for "discipline" even during the first two weeks, an average of 8.5 referrals per week.

Further examination of Figure 4 will indicate that during the eight weeks of simple operant conditioning there was some decrease in office referrals. However, the office still received an average of 3.5 referrals per week. This reduction occurred in spite of the fact that the children were becoming adapted to the new classes and new teachers and could have been expected, under ordinary conditions, to have misbehaved more freely as the weeks passed.

Immediately after initiation of the mediation training methods, the frequency of office referrals dropped sharply and as soon as the teachers became proficient in training the children to think of the consequences of their behaviors, office referrals dropped to zero. So, during the last 26 weeks of school there were only four office referrals; during the last 21 weeks there was only one office referral; and during the last 15 weeks there were no referrals. It is unfortunate that data from the previous year is not available for comparison, but the principal, the secretary, and teachers, all report that there were frequent office referrals throughout the previous year.

In reference to Figure 4, it should be kept in mind that only office referral data from the classrooms of trained teachers were included. The data does not include referrals from the classrooms of the two dropout teachers, referrals from the play-

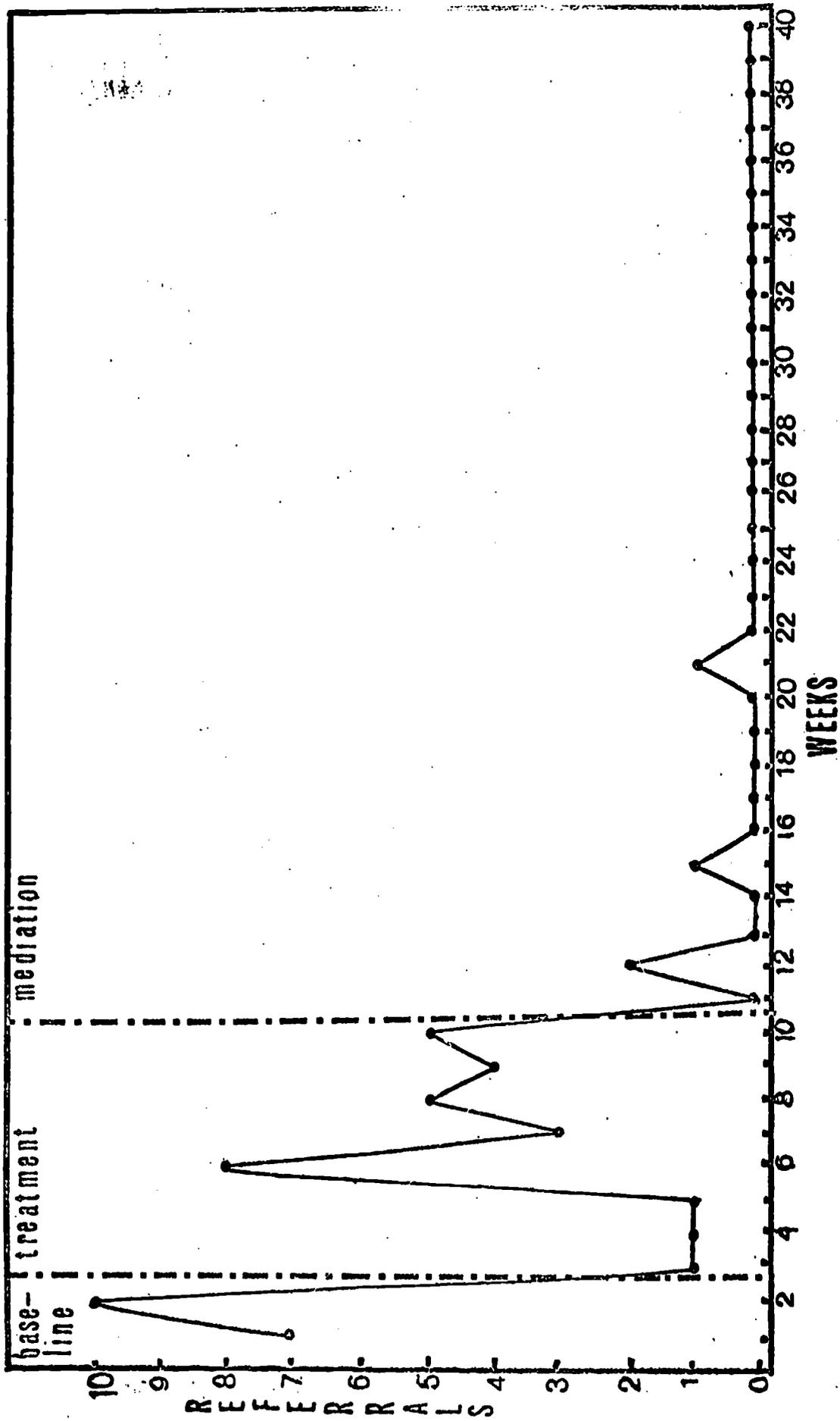


Figure 4. Frequency of office referrals each week at Clara Tagg Brewer School (1) before treatment, (2) during simple operant conditioning.

ground, referrals from the cafeteria, or referrals related to problems arising on the way to and from school. In fact, some serious discipline problems did occur during lunch hour in the cafeteria when the children were under the supervision of non-professionals and while the children were on the way to and from school. Perhaps, if the training program had included the cafeteria supervisor, some of the problems could have been prevented.

### Effects on the Frequency of Target Behaviors

Figures 5 through 20 contain graphs of the data from individual target children. In each case, the graph is divided into three sections: first from the left is the baseline, pre-treatment data showing the frequency of disruptive behaviors before the introduction of operant conditioning treatment; second, is the data collected during the simple operant conditioning treatment; and third, is the data from the mediation training phase. Examination of these graphs shows that in each case there were decreases in disruptive behaviors in spite of the fact that the baseline data was collected during the very first weeks of school before the children had fully adapted to their new classes. In most cases the mediation training proved to be highly effective, often completely eliminating the target misbehavior. Keeping in mind that the teachers chose as target children the most disruptive children in their classes, examination of the graphs of individual children and the previously discussed graph of office referrals strongly suggests that the training program was highly effective. Also, reversals (Figures 5, 19, & 20) show that when teachers returned to old ways, misbehaviors increased. However, several questions could be posed: Was the data reliable? Could some other variable than the training procedures have produced the changes? Would simpler methods have produced the same change?

Reliability of the data, obtained by correlating teacher observations for each observation period with the observations of the paid observer, was not high. The Spearman rank order correlation coefficient ranged from .41 to .82 with most coefficients clustered near .59. Perhaps low correlations could be blamed, in part, upon the small sample involved in the reliability check. However, it is more likely that the teachers were unable to keep highly reliable records while involved in teaching 30 to 35 children without aids. On the other hand, in spite of the lack of demonstrated reliability of teacher observations, there is other information to support the graphical picture of striking improvements in behaviors. First of all, the office referral data indicates that something had changed drastically in the classrooms. Secondly, teachers' anecdotal records and their

enthusiasm for the program suggests that something important had happened. Third, the principal investigator, the consulting principal, and the school secretary all confirmed, from their pre- and post-treatment observations, that there were striking reductions in misbehavior of both target and nontarget children.

#### Effects of Mediation versus Punishment Essays

There was little difference between the final frequencies of target behaviors shown by the experimental and by the control children. This result was contrary to the findings in several studies cited earlier, which indicated that mediation training was significantly more effective. To discover the cause of this discrepancy, the teachers were interviewed concerning their procedures. It was found that the teachers did not actually carry out the experimental and control treatments with care. In fact, there was a strong tendency to use the mediation essay on all the children in the class. This suggests that the teachers found the mediation essays more effective than the punishment essays but, of course, it is not the kind of clear evidence needed.

#### The Principal's View of Project Effects

The following section highlights a few of the project's more outstanding contributions to Brewer school life as viewed by the school principal, Evalyn Matherson, who produced this section of the report.

Administrators are sensitively concerned with the climate of the school environment and the rapport among the student body, parents, teaching and non-teaching staffs, and community. Although changes in these areas are not always clearly observable nor easily measured and graphed, the local school principal's position permits a rough evaluation of the fulfillment of the stated goals for an operant conditioning workshop.

A large portion of this document details the constructive changes and dramatic improvement of social behaviors of the target pupils. It is of equal significance to report the gradual, subtle modification of other important but less tangible variables; i.e., attitudes towards teacher perceptions of work tasks and implementation of job descriptions, and inter-personal relationships among staff, pupils, parents, and community.

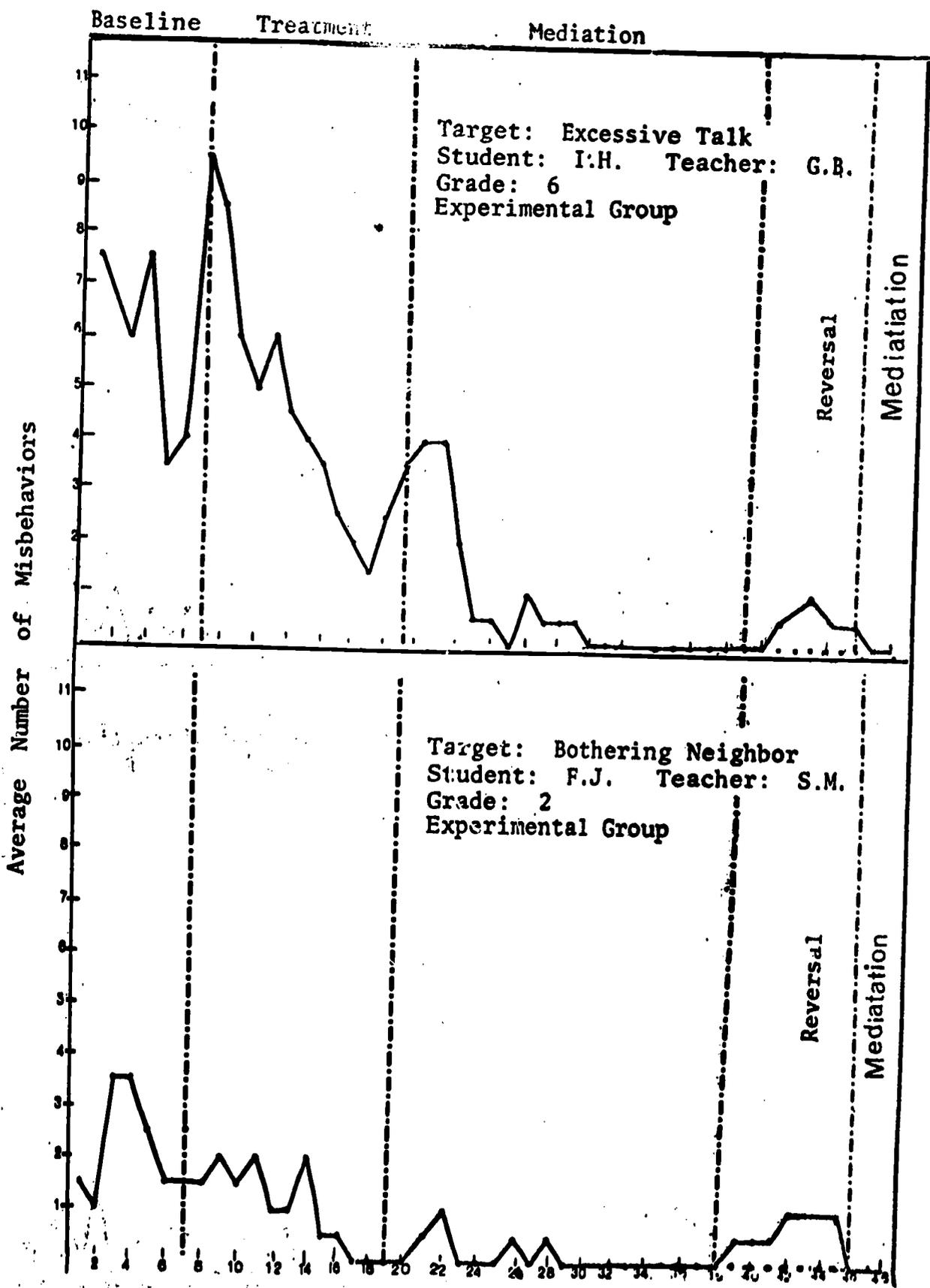


Figure 5. Average Number of Responses For Each Two-Day Period For Two Subjects.

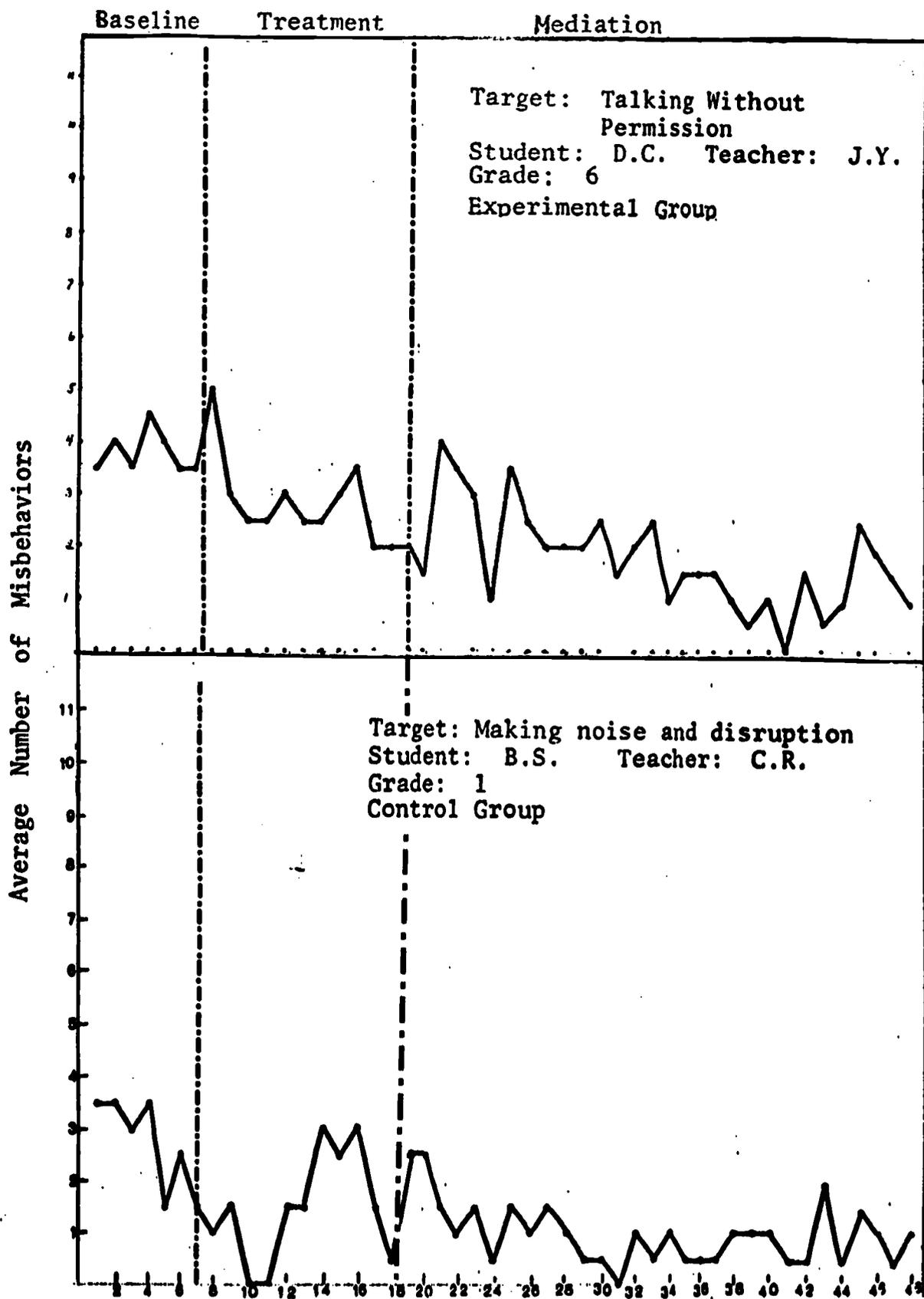


Figure 6. Average Number of Responses For Each Two-Day Period For Two Subjects.

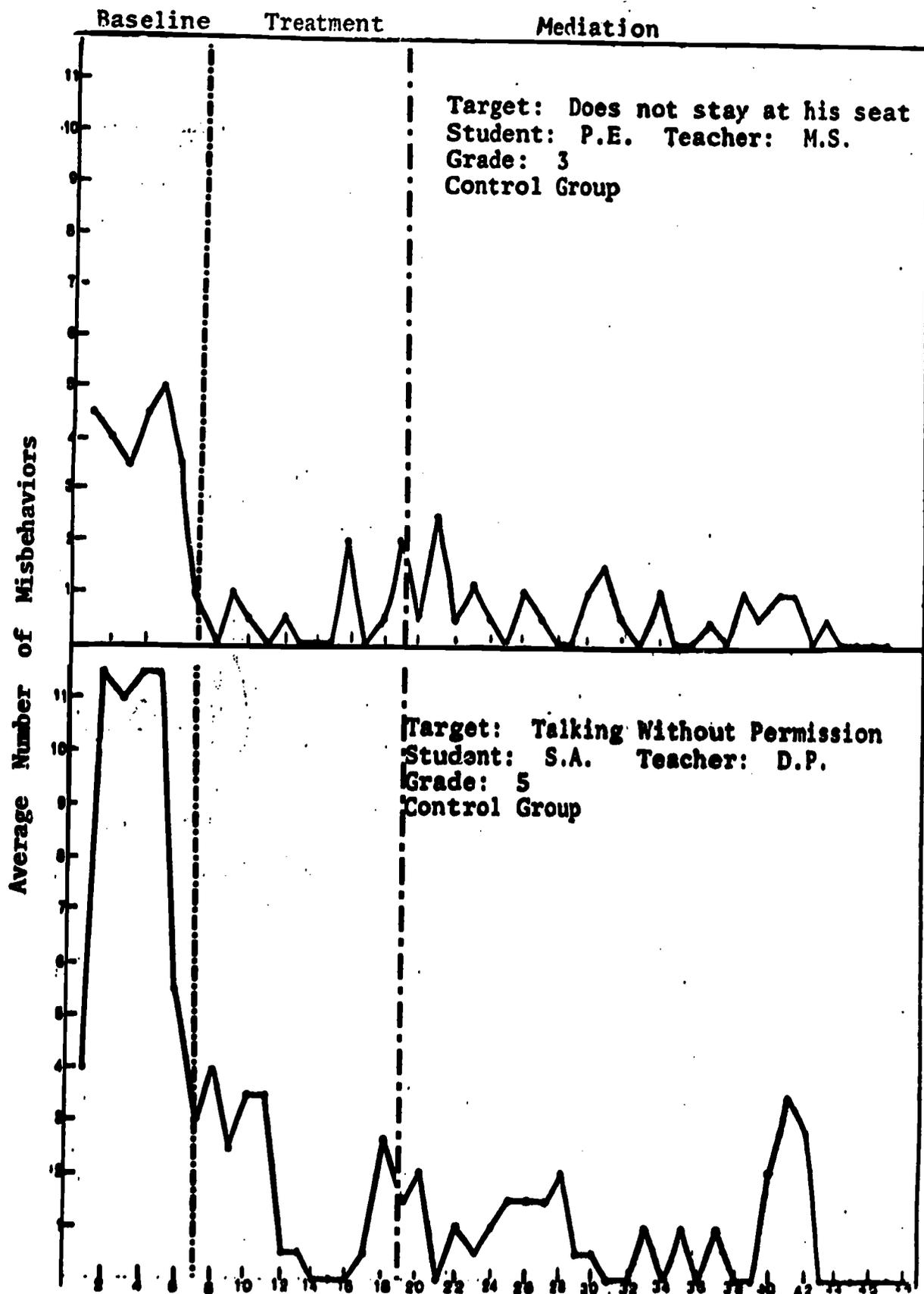


Figure 7. Average Number of Responses For Each Two-Day Period For Two Subjects.

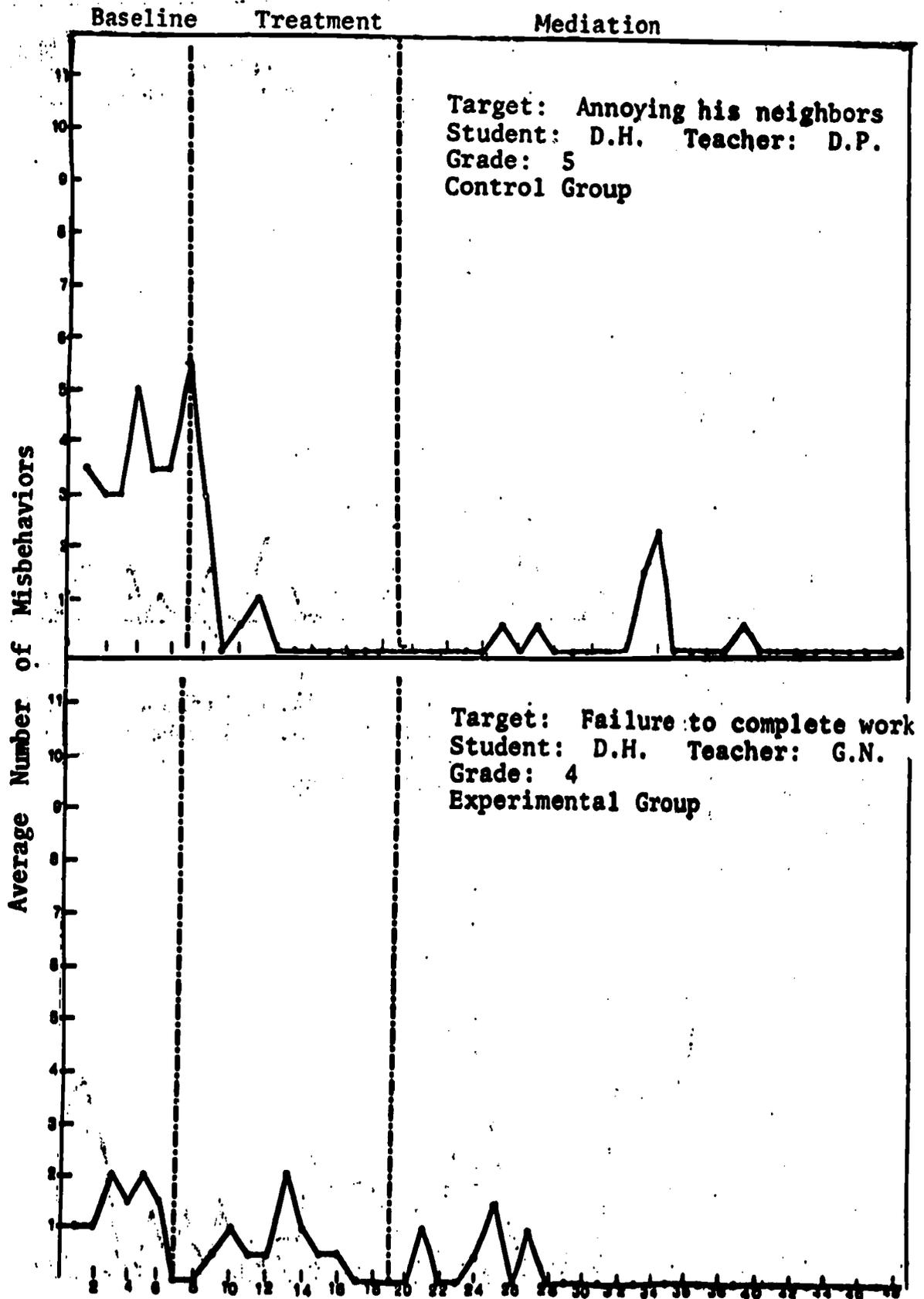


Figure 8. Average Number of Responses For Each Two-Day Period For Two Subjects.

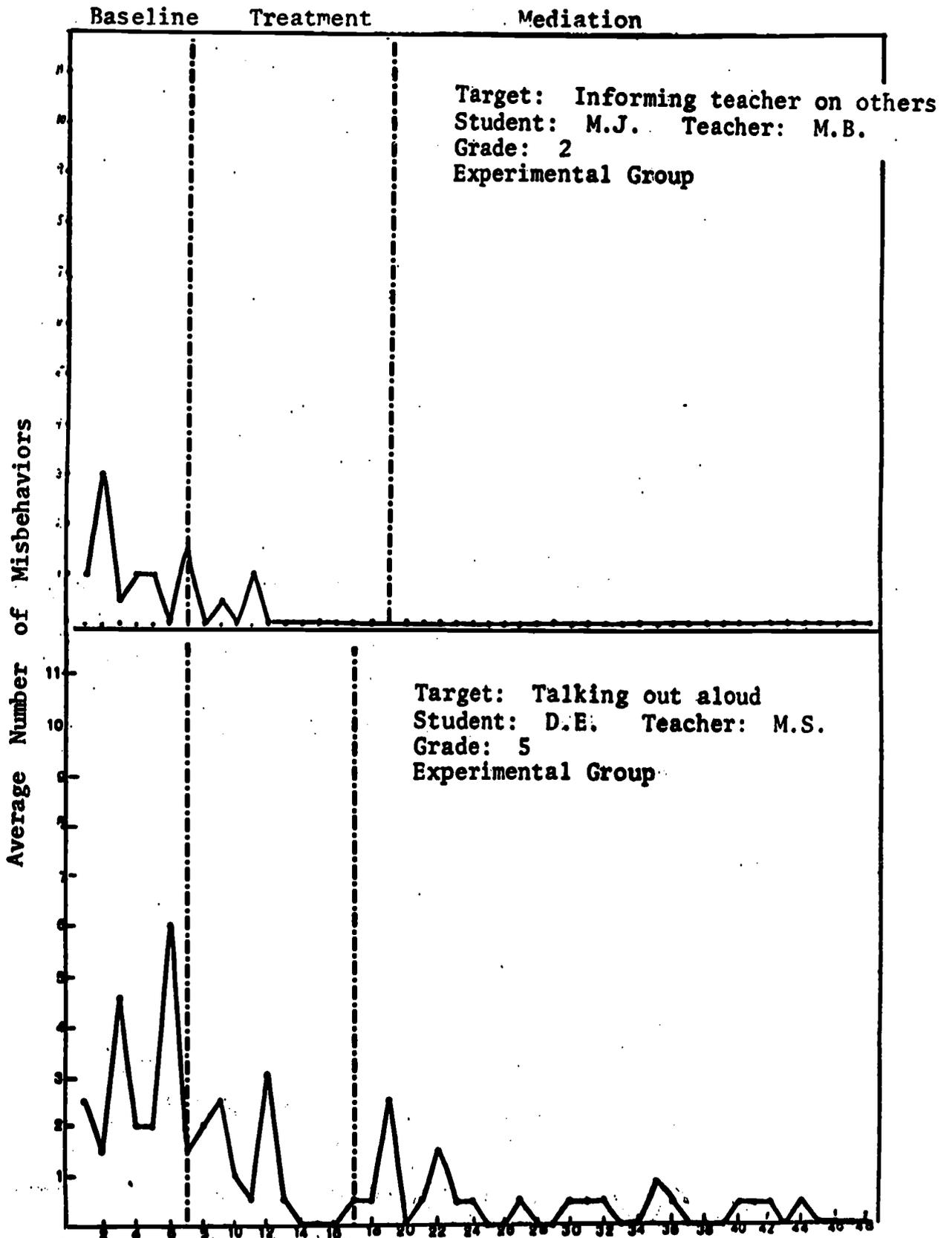


Figure 9. Average Number of Responses For Each Two-Day Period For Two Subjects.

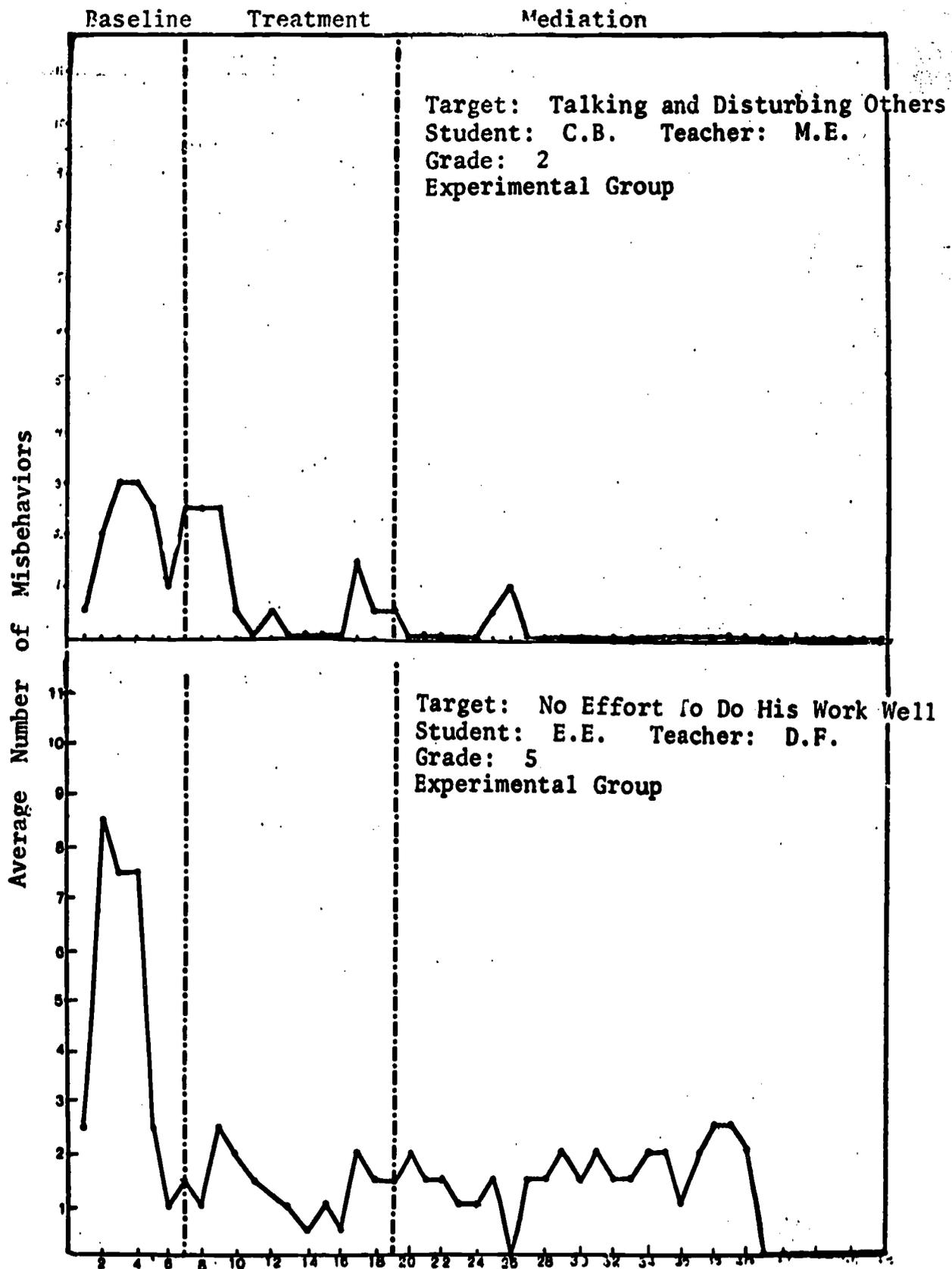


Figure 10. Average Number of Responses For Each Two-Day Period For Two Subjects.

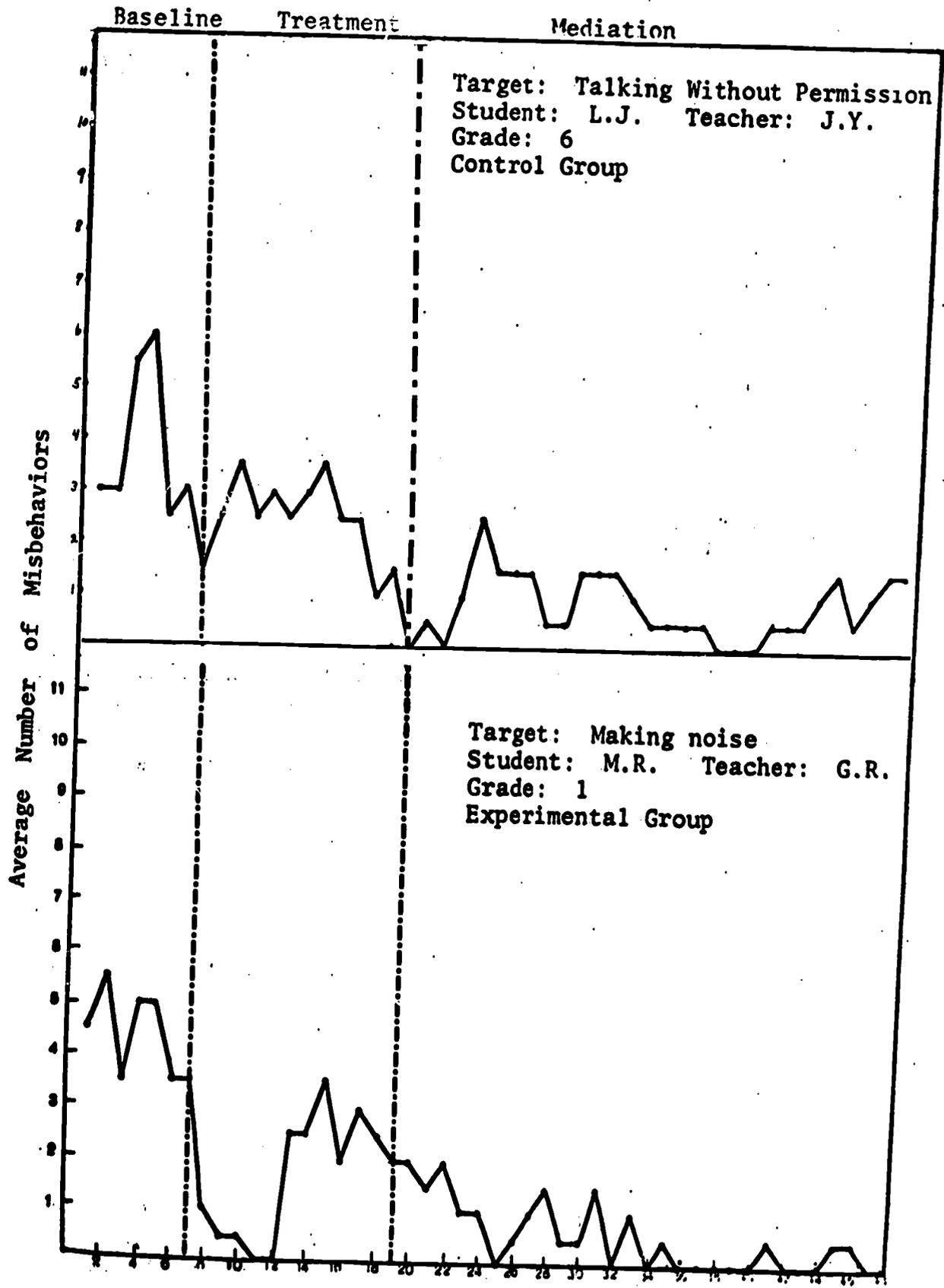


Figure 11. Average Number of Responses For Each Two-Day Period For Two Subjects.

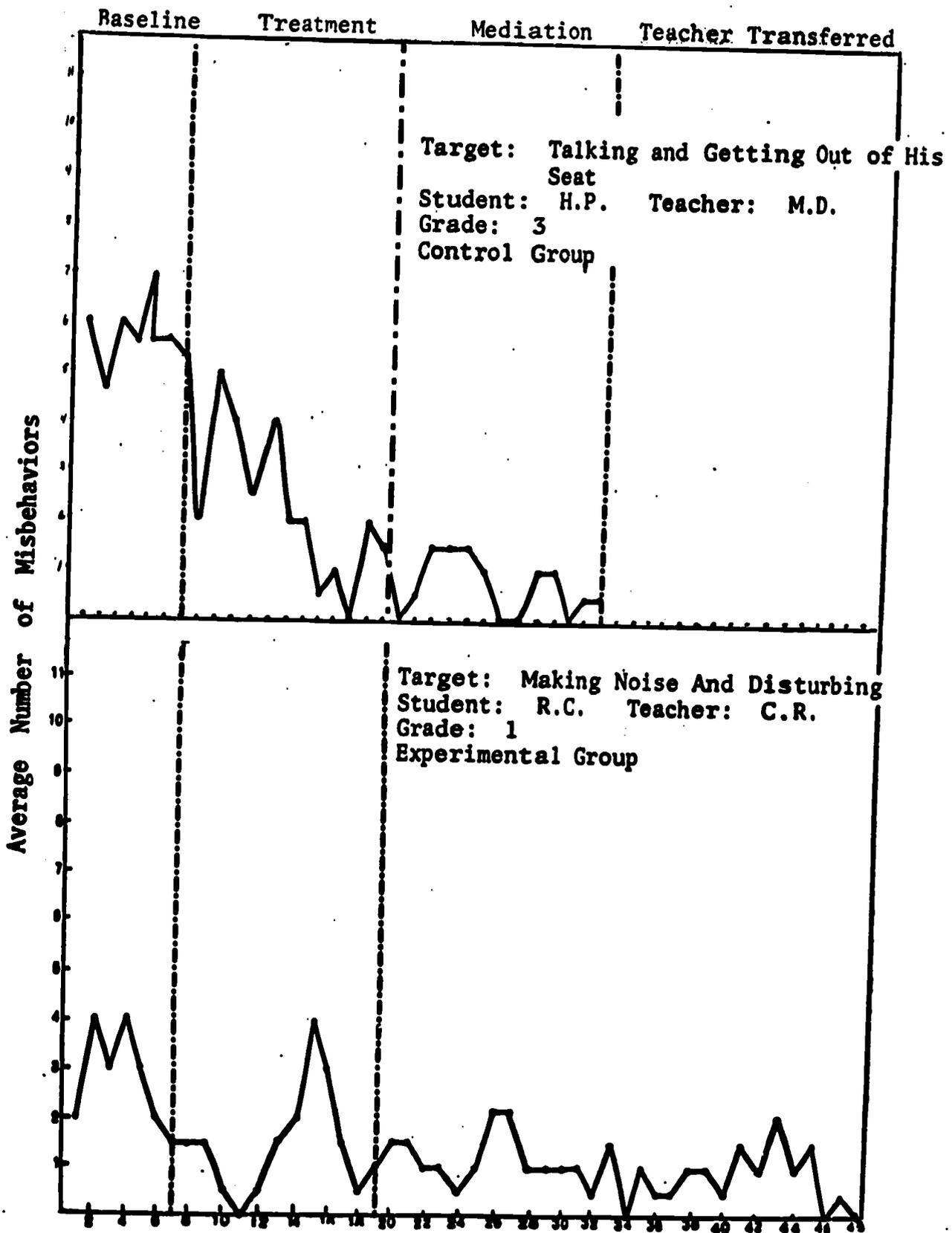


Figure 12. Average Number of Responses For Each Two-Day Period For Two Subjects.

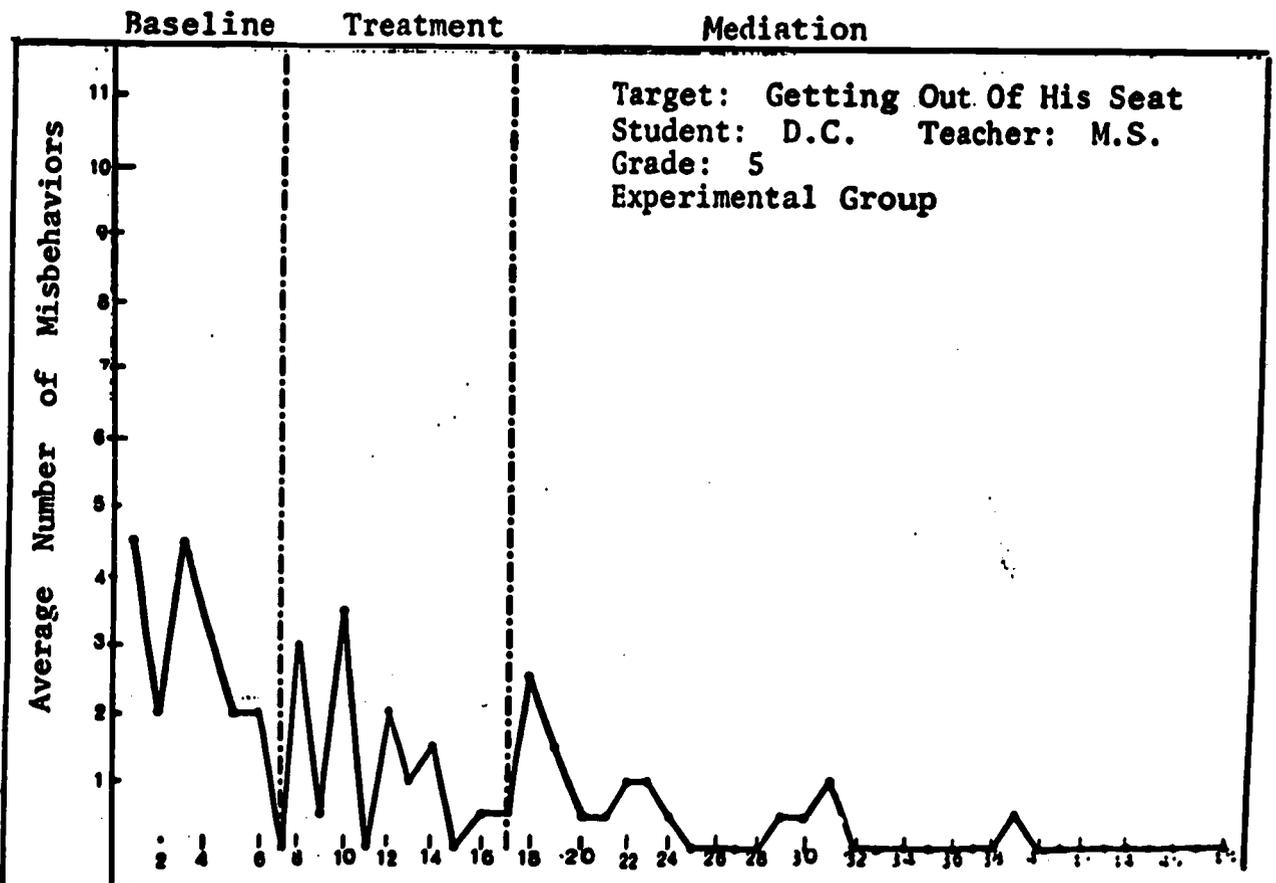


Figure 13. Average Number of Responses For Each Two-Day Period For Two Subjects.

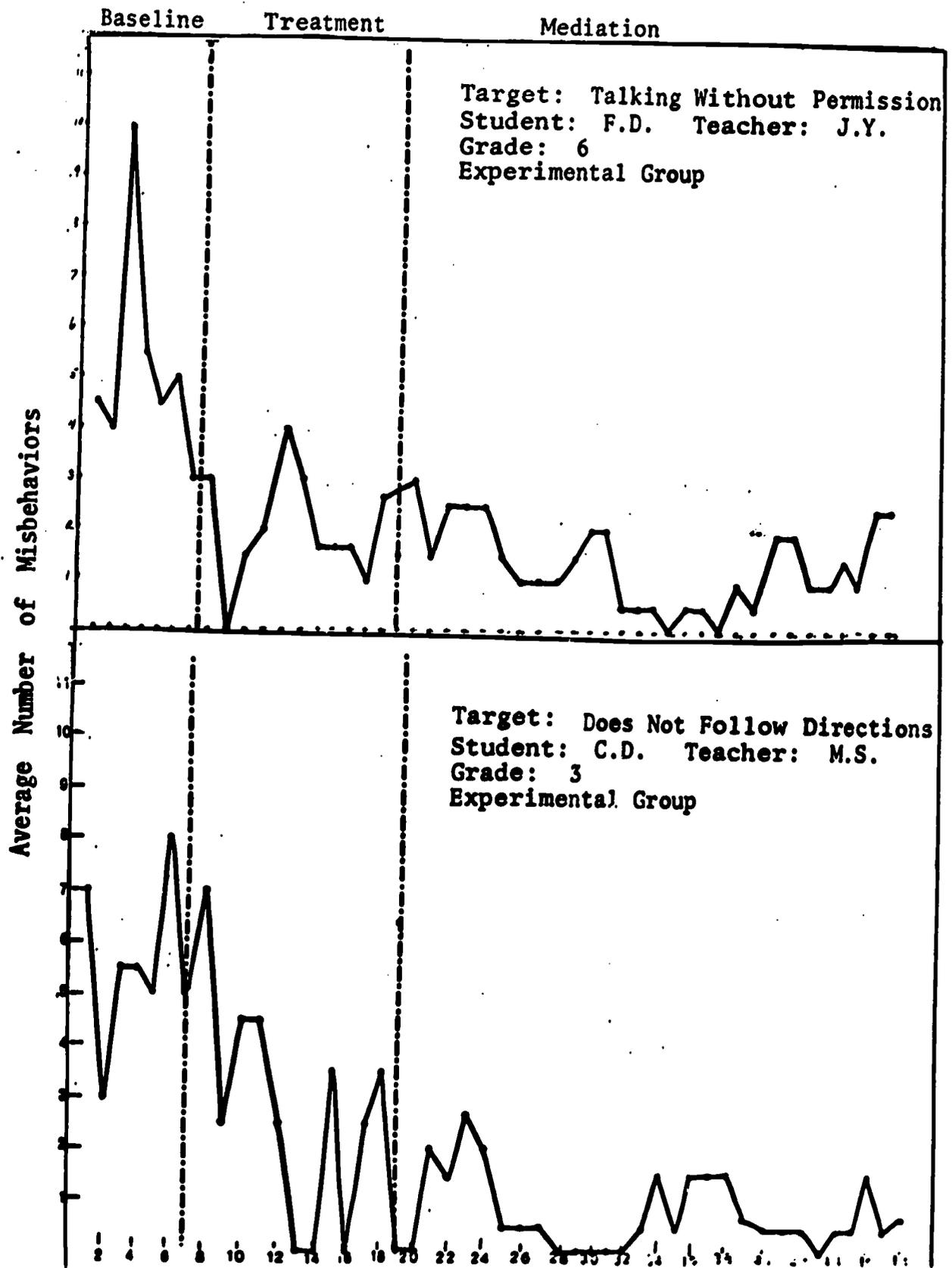


Figure 14. Average Number of Responses For Each Two-Day Period For Two Subjects.



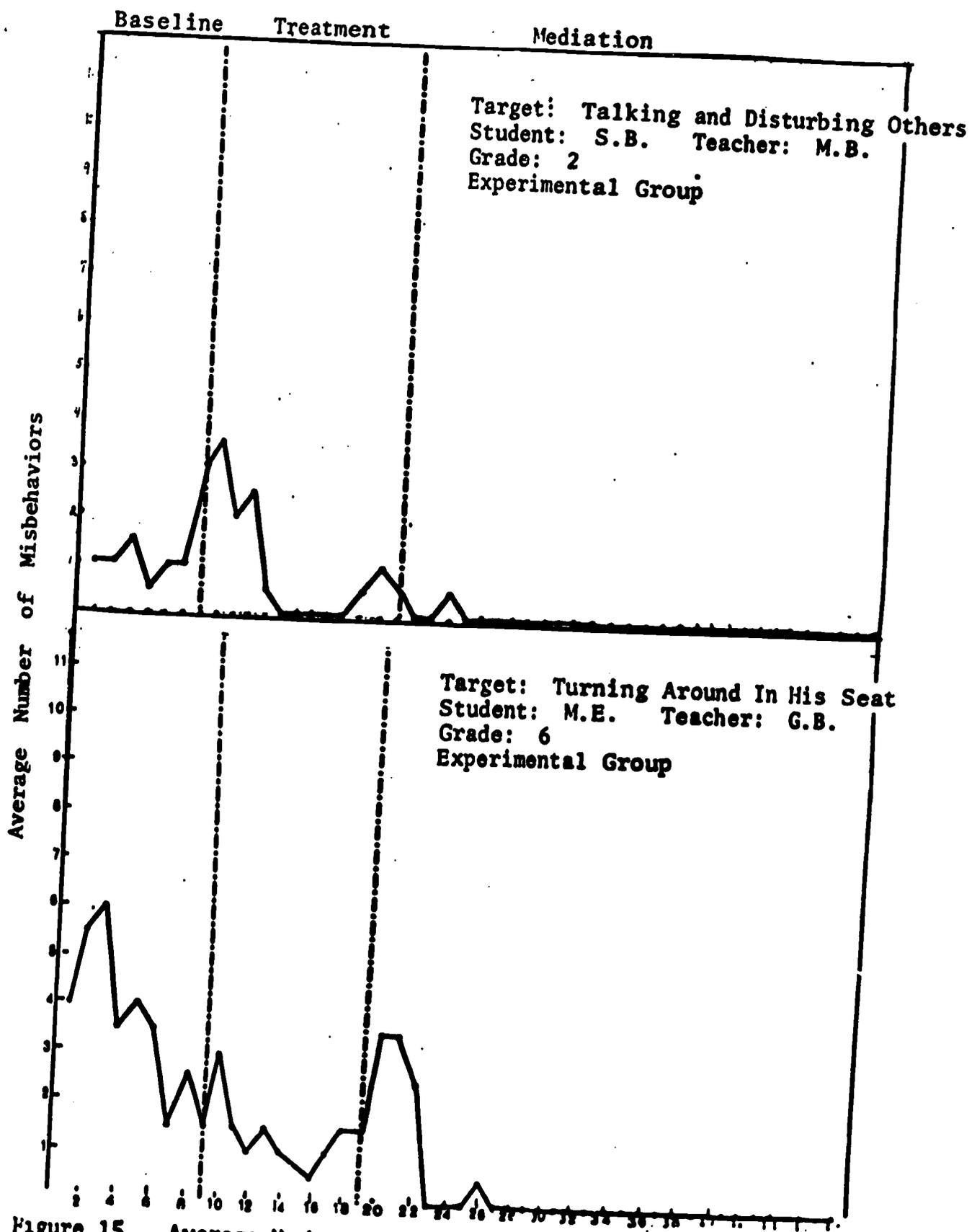


Figure 15. Average Number of Responses For Each Two-Day Period For Two Subjects.

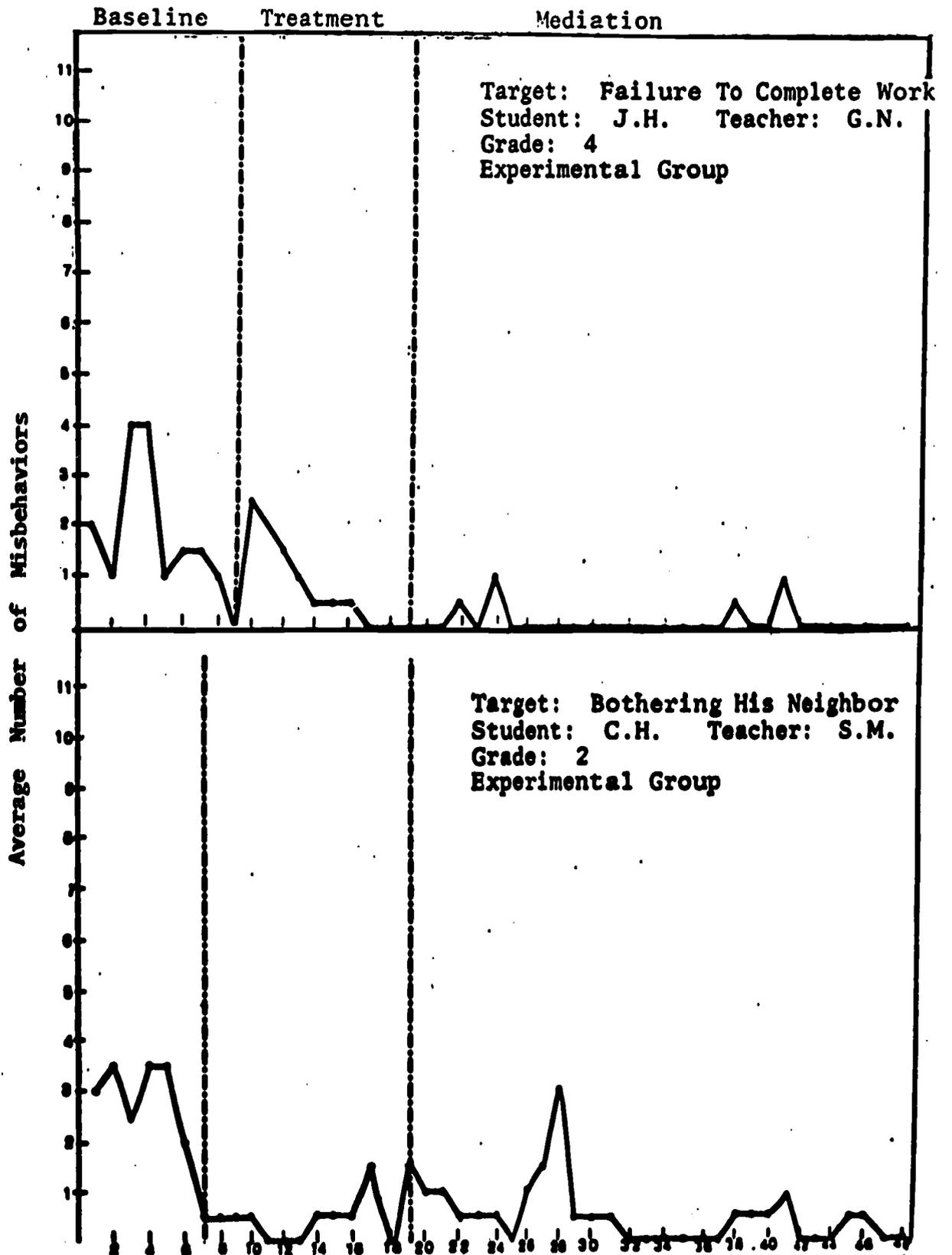


Figure 16. Average Number of Responses For Each Two-Day Period For Two Subjects.

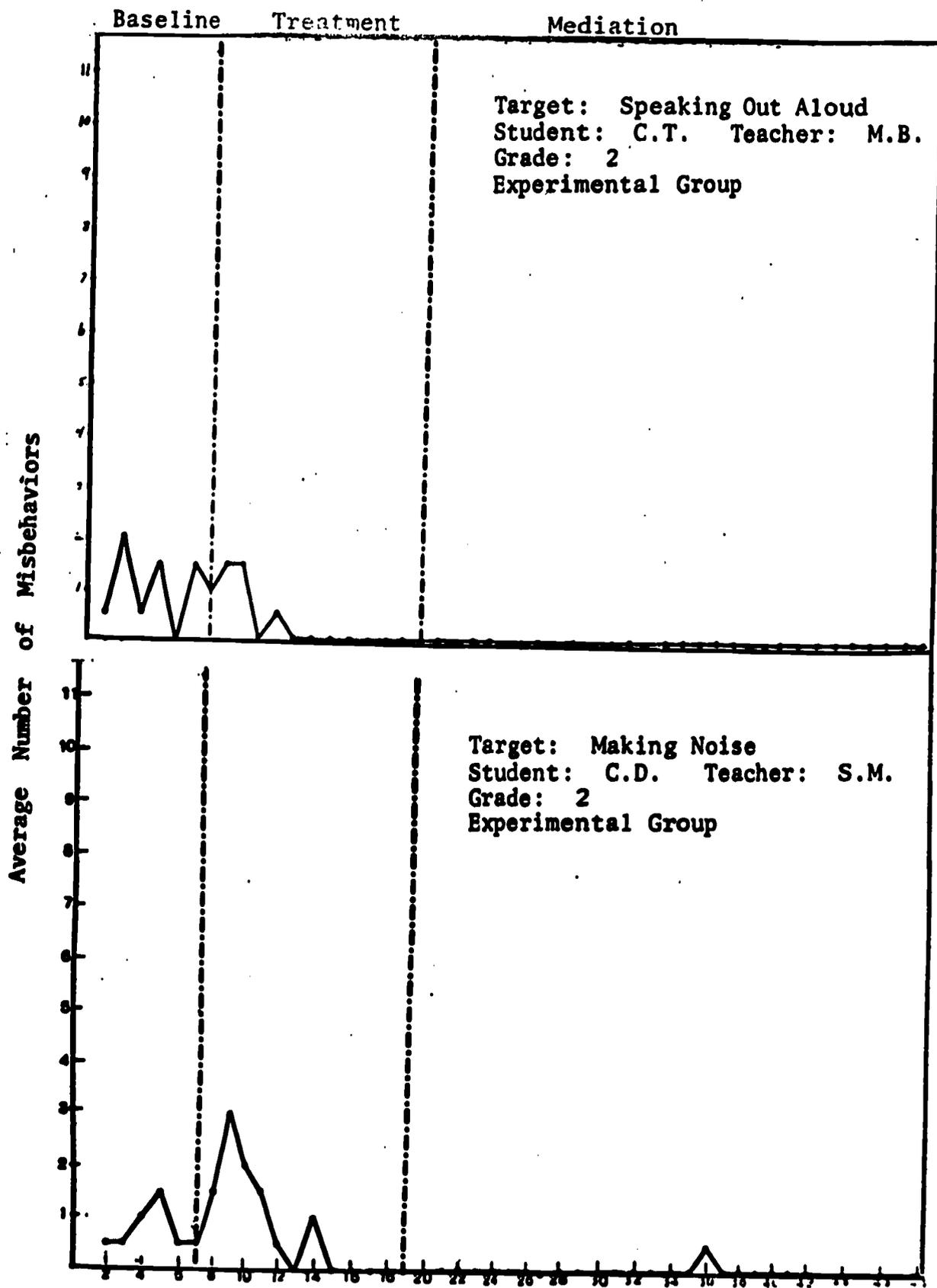


Figure 17. Average Number of Responses For Each Two-Day Period For Two Subjects.

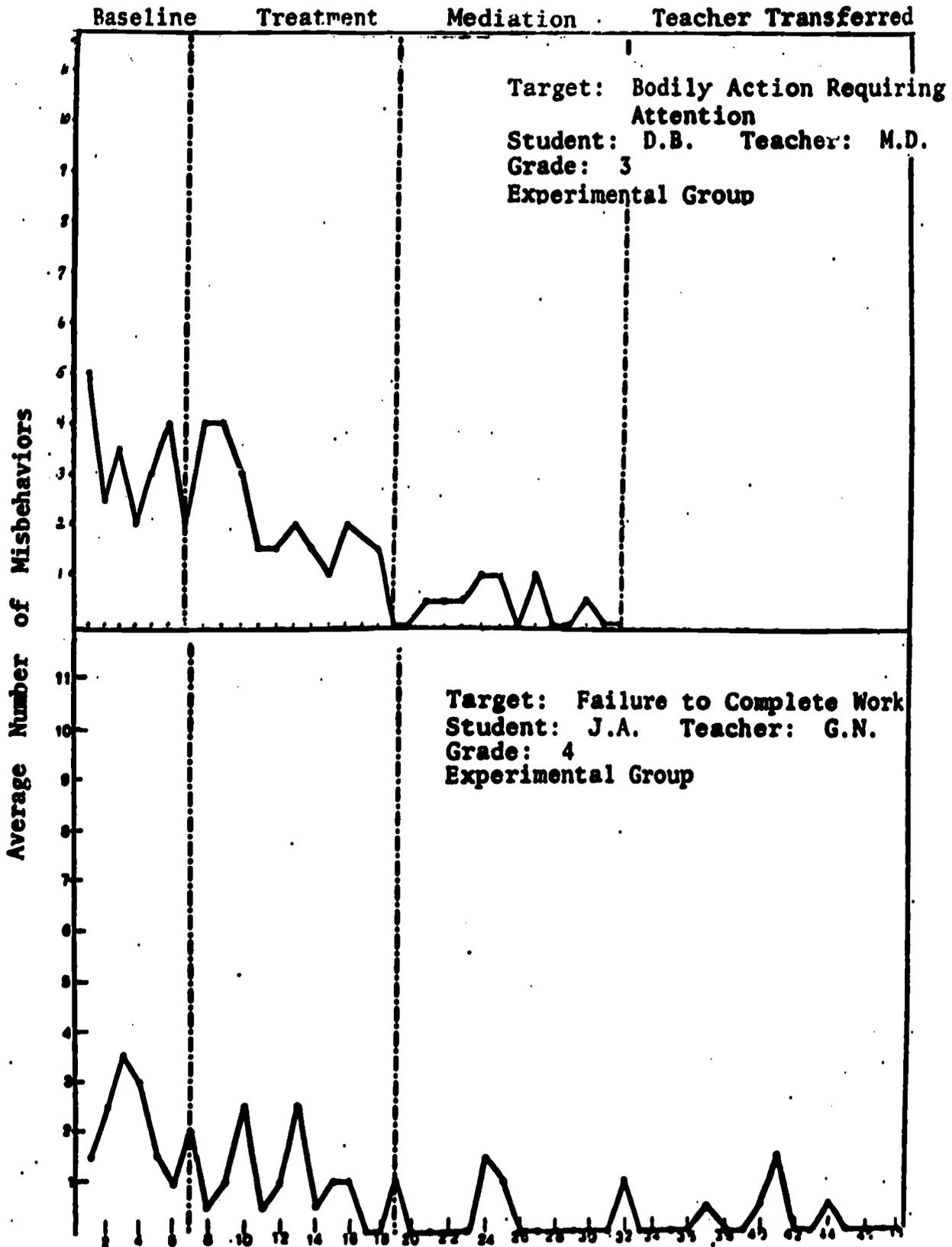


Figure 18. Average Number of Responses For Each Two-Day Period For Two Subjects.

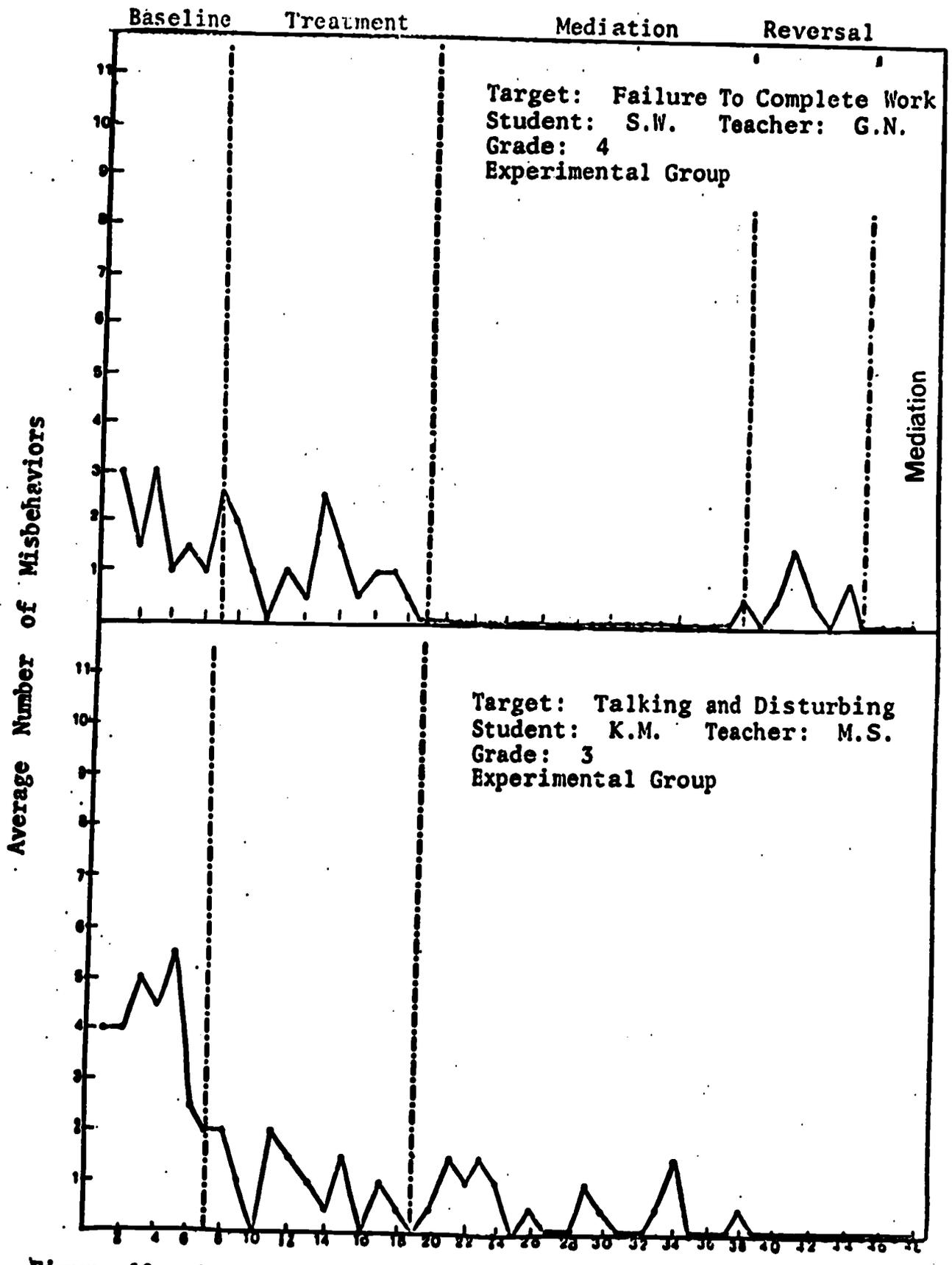


Figure 19. Average Number of Responses For Each Two-Day Period For Two Subjects.



Attitudinal Changes. Before the project's inception, staff members straggled into the school office, few entering much before the beginning of classes. Universally the tone of "good morning" was dismal, accompanied by complaints of having to confront unmotivated, disruptive students another day. Within two weeks of the project's start, all but one teacher (one who had a home complication) began to arrive earlier. Everyone checked his mailbox emitting light hearted greetings; some even hummed or whistled. The gripes continued but were interlaced with snatches of wonderings what the outcome would be of the token economy started in the fifth grade, whether the school's bully would hand in his completed copy of the assigned mediation essay, or buzzing about the success of the third-grade teacher who through her use of extinction, planned reinforcement, and satiation, had been able to reduce the annoying number of times Charlie wandered about the room getting into mischief.

Teachers willingly and openly shared their problems and frustrations with one another taking strength in the knowledge that their fellow teachers faced similar problems. They commented that their studies produced new solutions to old, plaguing classroom problems. Significantly greater cooperation among the staff was evident in faculty committee work, volunteering for additional duties and work projects, pooling of ideas for building-wide improvement of student conduct, and successful implementation of the suggestions.

The Principal was pleasantly surprised with the following comment from a substitute teacher: "Upon entering a friend's home, you sense his personality and so it is upon entering the school building. You are conscious of its student discipline. The children at Clara Tagg Brewer School know me for I'm here so often as a substitute teacher; six days in six different rooms so far this year. They cheerily greet me with happy hallos. At other schools, the student's welcome is far less friendly. You can tell something different is going on at Brewer when you walk in. It's just in the air and on the children's smiling faces. I suspect there is some kind of faculty effort going on to improve the children's attitudes and school discipline. Last year I taught the same children but they didn't act the same. Now the classes are better behaved. Everyone in the room has more fun learning, even the teacher. Some children still need to be reprimanded, but not so severely or so often."

Inter-personal Relationships. Increasingly teachers were heard in the halls, faculty lounge, at meetings and in conferences, commenting more upon the children's strengths and growth rather than, as before, upon their deficiencies.

A significant decline in after school and recess fighting occurred within a month of the project's beginning. The low frequency of fighting was maintained throughout the school year. Increasingly students engaged in volunteer group work at the school library and within the classrooms.

Before the project began, traditionally teachers requested parent conferences with a low rate of parental response. During the operant control study year, teachers reported a higher number of parent conferences held. Teachers specified to the parent the procedures employed in class to improve their child's behavior. The parent left the meeting with concrete suggestions for implementing home tasks to back up the school's efforts. Two well-received Parent Teacher Association meetings were devoted to discussions of behavior modification techniques, their application, and the significance of these procedures to the students. The project's administrative staff introduced the program to parents at an informal presentation. The second parent informational meeting was conducted by the teachers who were project trainees. The discussion-in-the-round encouraged open parent participation and stimulated many direct questions and comments.

A number of parents reported success in using operant methods of control which they had learned in school discussions and P.T.A. One parent shared her contingency contracting experience by saying: "My husband and I search for ways to prepare our children for adult life. As I heard our teachers discuss how they improve student behavior, I thought of my children. I was constantly repeating instructions to them concerning their jobs for the day. Secretly I felt there must be a better way. As a result of conversations and observations at school, I drew up a task sheet listing the day's specific household duties assigned to each child; e.g., cleaning his room, picking up trash in the yard, keeping the basement and garage neat, etc. If any job is left undone, a red mark is given. Two red marks in one week means isolation from some activity they enjoy, such as bike riding, T.V., or playing with chums. A perfect week is rewarded by a family trip, a treat, attending a sporting event, or other special activity.

This plan is very successful at home and the children are happy with the arrangement. Learning is taking place because we are teaching them responsibility. They're thinking for themselves for neither my husband nor I any longer think for them concerning their home duties."

At the local area gathering of a city-wide curriculum study, brewer teachers demonstrated more positive leadership than they had shown in the past at similar community-school

meetings. The community's grave concerns about the effectiveness of school discipline was a key issue in 10 of the 12 small group discussion sessions although the announced topic was "the present school curriculum and its relevance to the educational needs of today's students." Members of the separate groups repeatedly voiced these questions in various ways: "What is your school doing to maintain order among the student body?" and "How are you as a teacher improving the valuable social behaviors no longer stressed in the home?" Brewer teachers answered with confidence, based on their training in the project, describing detailed strategy plans, specific operant methods, and actual examples of pupil improvement.

The Principal sums up her view of the project's value and its contributions this way: "if I were able to freely select the members of Brewer's staff, I would select those applicants who were well trained in applying operant conditioning principles and verbal mediation techniques in preference to those candidates who had extensive training in current educational theory. The operantly trained teacher would conduct highly motivated classes and could easily and quickly develop the needed methods of teaching subject matter."

#### Teachers' Informal Reports on Project Effects

Many of the teachers' informal reports reflected the same changes seen in the graphs. That is the teachers reported with enthusiasm that they had "wiped out" all serious misbehaviors.

Perhaps of greater interest were the frequent reports by teachers of applications of operant conditioning to academic goals. It should be kept in mind that the project emphasized control of disruptive behaviors and very little was done about training for transfer of the principles to problems of teaching subject matter. Therefore, teachers making an academic application suggests that the effects of the training went beyond topics covered in the training meetings.

For example, an upper-level teacher applied some of the principles to her spelling instruction. She arranged things so that, instead of daily quizzes and the regular Friday test on each word list, a student could earn a perfect score early in the week, then spend the spelling period, for the remainder of the week, on other subjects, a project, free time, research in the library, etc. As a result, most of the children usually mastered the week's words by Wednesday. Previously, many children could not be motivated to study seriously.

Another teacher was teaching arithmetic ineffectively. About two-thirds of her children were failing to attain the skills and concepts in her lesson plans. As a result of learning operant principles, she employed shaping procedures, starting where the students were rather than, as previously, where the curriculum said they should be. She also made an operant analysis of her arithmetic teaching procedures and the learning task, redesigned her methods, and reported great success.

Yet, another teacher arranged a token economy to pay off both "good" behavior and the completion of academic tasks. She arranged for students to manage this token economy (for pay in tokens) and thus gained more free time for individualized instruction.

The kindergarten teacher reported that her use of operant methods even influenced, indirectly her conference with parents. Ordinarily parents come prepared to talk about the child's conduct and, typically, the parent is on the defensive, trying to justify a child's behavior. However, since the operant methods eliminated most disruptions and made kindergarten learning tasks attractive the children went home talking happily about the day's activities. Consequently, most parent conferences centered around ways of improving the children's academic and skill learning.

In general, having conquered the behavior problems, the teachers began to concentrate on upgrading their methods of teaching subject matter, employing the operant principles which they had first acquired in order to combat misbehavior.

### Publicity

The Call and Post, of Cleveland carried a favorable report of the project (Saturday, December 20, 1969, Vol. 56, No. 51, p. 7A). This report included two photographs, one of a Brewer teacher at work with her children and the other of the project director and consulting principal in conference.

The Cleveland Plain Dealer carried a detailed and favorable report on the project on Sunday, November 9, 1969. There were a few inaccuracies in this report but, in general, it was accurate.

The Instructor devoted half a column to the project in the section entitled "What's Happening in Education That is News. . ." (May, 1970, p. 24.) Letters were received from Philadelphia, Texas, California, and other states in which teachers cited this instructor article and requested more details concerning the methods.

A brief summary of the project was carried in Education Summary on December 15, 1969, page 6.

The project was also announced in the American Psychological Association's Division 15 Newsletter and in The American Educational Research Association's Educational Researcher (Vol. 20, No. 9, 1969, p. 7).

### Training Projects Growing out of the OOR Project

Several large projects in operant conditioning and mediation training were stimulated by the Brewer School project. In the Winter of 1970, the director of the present project was asked to train 35 teachers at Schumacher School in Akron, Ohio. Eight Saturday meetings were held, employing Brewer teachers as group leaders. In this way, not only did the Schumacher School teachers receive training but Brewer teachers upgraded their skills. The principal of Brewer School, Evelyn MacPherson, helped organize and manage the Schumacher project.

During the Fall and Winter of 1970-71, the director of the present project was asked to train 12 inner-city teachers of Akron. Ten meetings were held on Saturdays with great success. Since then, some of these teachers have, themselves, become involved in other training projects.

In the Spring of 1970 the director of the present project was asked to train teams of special education personnel (50 teachers, psychologists, supervisors, and principals) in operant methods. An intensive six-day session was held. Since then, many of these trainees have successfully implemented operant methods in their schools and several have conducted their own workshops. For example, the Dover, Ohio, school psychologist, who was trained in that series of meetings, has already directed five operant conditioning workshops.

Again, in the Summer of 1971 the director of the present project was asked to assist in training special education teachers. This time there were 30 educators meeting for 15 days of intensive training. Plans are for all these teachers, psychologists, principals, and supervisors to implement operant and mediation methods in their schools throughout North-East Ohio.

In addition, the director has been asked to speak to educators - teachers, principals, psychologists, supervisors, teacher-trainees, special education teachers, or university educators - several times a month over the last year and a half.

In fact, frequently the pressure of a crowded schedule has led to referring these invitations to others, some of whom were trained in projects stimulated by the original Brewer School, OOE project. As a result of the increasing demand, the director of the present project has been asked by the University of Akron to teach operant conditioning and mediation training in a course offered quarterly.

The Brewer School principal, Evelyn MacPherson, has also become involved in training teachers in operant methods in other projects which were stimulated by the present one; a series of training sessions in Lakewood County, the Schumacher School project, and a workshop at the University of Akron.

In summary, the Office of Education funded project at Clara Tagg Brewer School has helped stimulate wide propagation of operant conditioning and mediation training methods throughout northeastern Ohio. In 1969 few teachers in this area had heard of operant conditioning and almost none had heard of mediation training. Now there is widespread knowledge of these methods and deep interest in them. Exactly how much of this change is due directly to the Brewer project is impossible to determine but it appears that this funded project was highly influential, not only in perfecting applications of basic laws of learning to the classroom but also in propagating the new methods widely.

### Conclusions and Recommendations

#### Conclusions

In general, the project was a successful exploratory study and a highly successful demonstration project. As an experiment, the project demonstrated that operant conditioning and mediation methods can be taught to a school staff in such a way that the frequency of disruptive behavior of target children, office referrals are strikingly reduced or eliminated. There was some, but not conclusive, evidence that mediation training, following an operant program, was more successful than punishment.

As a demonstration project, success was considerable; the project stimulated several other large-scale training projects, many short presentations, and the innovation of a new course at the University of Akron.

## Recommendations

The success of this project in reducing disruptive behaviors leads to the recommendation that such training be made more widely available to teachers. It is especially recommended that mediation training be added to the operant conditioning programs already operating.

However, more research needs to be carried out to determine just how mediation training operates and how it can be made most effective. Two kinds of research are needed; applied research in the field and laboratory research to test the theory. At the University of Akron, theory-testing research is being undertaken but much more needs to be stimulated.

Concerning field research, little is known about the relative effectiveness of different ways of approaching mediation training. Many questions need empirical answers.

For training teachers, there is a severe shortage of (1) competent leaders and (2) training materials. Leaders must be trained who can communicate the new skills to classroom teachers. Perhaps the most economical method of spreading these new skills may be found in the Ohio "Breakthrough" program in which special education teachers are reached through trained teams of school psychologists, principals, supervising teachers and model classrooms. "Breakthrough" has a favorable "cost-effectiveness ratio."

Better training materials are badly needed. In fact, the production of better training materials should pay off with greater change per dollar invested than the training of leaders. For, with proper materials a relatively naive leader can teach the operant conditioning and mediation skills to large groups. But a skilled leader without proper materials cannot really train - though he may entertain - large groups.

At the time of the Brewer School project, no appropriate textbook was available. Those in print at that time typically dealt with only a few operant principles, only covering a fraction of the list found in the procedures section of the present report. Needless to say, they did not present mediation training at all. Most of the books were written by professors for fellow professors, it seemed. Neither the language nor the style appealed to the ordinary classroom teachers.

After considering the available books, the director of the present project decided to use mimeographed handouts which he had earlier employed elsewhere (a few samples are shown in appendix A). These were so well received by the teachers that,

after completion of the project, they were polished, expanded, and published under the title, Operant Control of Behavior (Blackrock, 1971). Of course, in the meantime many other books on applied operant conditioning have appeared. Some of these should be considered as necessary sources for any operant training program. On the other hand, most suffer from the same faults which made ineffective much of the earlier materials: (1) only a few operant principles are applied (2) academic-scientific language rather than applied-classroom style is used, (3) only limited examples are employed. On the other hand, with intensive feedback over the past decade from teachers in the classroom, Operant Control of Behavior was designed (1) to include application of a comprehensive list of operant and mediation principles and (2) to arouse and maintain the interests of teachers and (3) to convey maximum meaning to the teachers. Some teachers have difficulty mastering the skills from reading ordinary discourse and need programmed materials. Others are irritated by programmed learning, profiting from more conventional introductions to operant control are available. However, they unfortunately seldom cover much more than conditioning, extinction and shaping. Currently the consulting principal for the present project, Evelyn MacPherson, is programming materials to cover all the principles listed in the methods section of this report.

Other training materials are needed: films, slides, tapes, etc. A workbook is now being developed which will include improved forms similar to those found in Appendix A of this report. This workbook will be especially helpful to leaders with minimal experience who wish to train other teachers.

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**Appendix A**

**Forms and other Training Materials**

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**54**

## HOW TO SELECT YOUR TARGET PUPIL

Operant conditioning has repeatedly made great improvement in classroom behavior when used by people who know the basic principles. Learning the principles is easy if you follow carefully the program which we have planned. The initial steps are as follows:

### I. The key to classroom control using operant conditioning

It is important to learn the basic principles and the technical terms so that you can talk about operant conditioning in clear, precise language. Operant conditioning works somewhat differently from your past ways of doing things and it is easy to confuse operant conditioning methods which "common sense" methods. The two appear almost identical but there is a great difference in their results. So it pays to learn the basics of operant conditioning in the classroom.

If you provide us with certain information about disruptive children in your classroom, we can show you, much more quickly, how to eliminate misbehaviors.

### II. Selecting target children

Select 3 or 4 of your children for treatment in the beginning. Learning operant conditioning principles requires you to think carefully about what you are doing in relation to a child and to do this with the same child day after day. This is not possible if you try to study all the children in the class at once; it spreads your attention too thin. So, it is best to choose only a few children as subjects of your study at first. You will find that, as the methods work on your chosen few, you will begin to use them unconsciously on other children. Fine! You get results without even trying. However, continue to keep records only on your chosen target children.

III. Select the most disturbing child as a target.

It is wise to choose as your subjects the most troublesome children in your class. This has two advantages: (1) if there is improvement, a tremendous load is lifted from your shoulders when the child is "cured" and, (2) it is easier to see operant conditioning work when it is applied to the most disorderly children. So, for your study, choose children who would contribute most to education by playing hookie.

IV. Record target child's name.

On page 59, in the blanks labeled "Child's name", list the names of your target children.

V. Select each target child's most disruptive behavior as your target behavior.

Choose only one kind of misbehavior for each child. If you try to work on several misbehaviors for one child, again you spread your efforts too thin. You lack force. As a military strategist would advise, it is better to concentrate all your force in one spot until you break through, then take care of the rest. So, if a child gets out of his seat, talks out of turn, and makes drumming noises on the desk, choose the one of these three behaviors which is most damaging to the class. Attack that behavior with the full force of our method and you can eliminate it. Often the other misbehaviors just disappear while you are treating the worst behavior. If not, you will have time to attack other behaviors after you have eliminated the most troublesome behavior.

## DEFINING THE TARGET BEHAVIOR

### I. Describe the target behavior in observable terms.

Your description must use words that refer to observable things that children do. Any behavior which cannot be seen or heard cannot be changed by our method. So do not talk about a child being mean; tell about how often he hit others or curses others. Do not talk about a child being stubborn; talk about how often he fails to obey a command.

### II. Describe the target behavior in specific terms.

Use specific and concrete terms, not vague and general terms in describing the target behavior. Do not say that the child is disorderly; say that he gets out of his seat without permission or shoves others.

### III. You need baseline data.

Once the behaviors have been clearly described, a 5 day baseline record must be obtained. A baseline record is a record of the number of misbehaviors each day. It tells us how often, on the average, the misbehavior occurred before applying our new method. It is by comparing with this baseline that we can later show just how much improvement has been made. So, we must get this 5 day baseline before you start using any of our new methods.

### IV. How to collect baseline data.

To obtain the baseline, you record the number of times the target misbehavior occurs each day. We will provide you with a behavior record for recording. (# 62--Target Behavior Frequency) It will list the name of the children you are studying, the date, and the name of the misbehavior. Each time the child misbehaves, you are to enter a tally mark. It is important to be very accurate.

### V. Next

After you have obtained a baseline, we will meet and plan a strategy for treating the misbehaviors.

SELECTION OF SUBJECTS AND TARGET BEHAVIORS

Teacher's Name: \_\_\_\_\_ Rm. No. \_\_\_\_\_

Grade: \_\_\_\_\_

Date: \_\_\_\_\_

In the space provided below, describe one misbehavior per child. If you wish to say more about the child, (e.g., to describe other behaviors than that one you wish to attack), use the back of this sheet. Make your behavior descriptions concrete, (e.g., he talks without permission or he gets out of his seat) not abstract (e.g., he's a trouble-maker or he's restless).

A. Child's name: \_\_\_\_\_

Behavioral Description of 1 Target Behavior \_\_\_\_\_

Label, tag, or brief name of behavior: \_\_\_\_\_

Description of the target behavior: \_\_\_\_\_

B. Child's name: \_\_\_\_\_

Behavioral Description of 1 Target Behavior \_\_\_\_\_

Label, tag, or brief name of behavior: \_\_\_\_\_

Description of the target behavior: \_\_\_\_\_

C. Child's name: \_\_\_\_\_

Behavioral Description of 1 Target Behavior \_\_\_\_\_

Label, tag, or brief name of behavior: \_\_\_\_\_

Description of the target behavior: \_\_\_\_\_

D. Child's name: \_\_\_\_\_

Behavioral Description of 1 Target Behavior \_\_\_\_\_

Label, tag, or brief name of behavior: \_\_\_\_\_

Description of the target behavior: \_\_\_\_\_

PLEASE RETURN CARBON COPY OF THIS FORM AT NEXT MEETING.

Label, tag, or brief name of behavior: \_\_\_\_\_

Description of the target behavior: \_\_\_\_\_

TARGET BEHAVIOR FORM #2

This form is to be used in refining your Target Behavior descriptions.

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_  
Teacher's Name Rm.# Grade Date

5. How many children do you wish to study? \_\_\_\_\_

6. List the names of the children you have chosen as targets and describe the target misbehavior for each child. Give a label or a tag to each target behavior for quick reference.

A. Child's Name: \_\_\_\_\_

Label, Tag, or Brief Name of Behavior: \_\_\_\_\_

Description of the Target Behavior: \_\_\_\_\_

\_\_\_\_\_

B. Child's Name: \_\_\_\_\_

Label, Tag, or Brief Name of Behavior: \_\_\_\_\_

Description of the Target Behavior: \_\_\_\_\_

\_\_\_\_\_

C. Child's Name: \_\_\_\_\_

Label, Tag, or Brief Name of Behavior: \_\_\_\_\_

Description of the Target Behavior: \_\_\_\_\_

\_\_\_\_\_

D. Child's Name: \_\_\_\_\_

Label, Tag, or Brief Name of Behavior: \_\_\_\_\_

Description of the Target Behavior: \_\_\_\_\_

\_\_\_\_\_

## TARGET BEHAVIOR FREQUENCY

### Data Collection

#### Directions:

1. Complete headings, i.e., Teacher's name, target pupil, target behavior, etc..
2. Tally daily each occurrence of target behaviors using the tally mark (/).
3. If the target pupil or teacher is absent, indicate by writing absent on the appropriate day.
4. If no target behavior occurs on a given day, indicate this by a zero (0) on that day.
5. A copy of the completed Behavior Frequency Record (# 63) is to be returned at the beginning of each training session.

DATA RECORD FORM

Teacher's Name: \_\_\_\_\_

Date: \_\_\_\_\_

A. Subject's Name: \_\_\_\_\_

Time Target Behavior: \_\_\_\_\_  
\_\_\_\_\_ to \_\_\_\_\_ Mon. \_\_\_\_\_  
\_\_\_\_\_ to \_\_\_\_\_ Tues. \_\_\_\_\_  
\_\_\_\_\_ to \_\_\_\_\_ Wed. \_\_\_\_\_  
\_\_\_\_\_ to \_\_\_\_\_ Thurs. \_\_\_\_\_  
\_\_\_\_\_ to \_\_\_\_\_ Fri. \_\_\_\_\_

B. Subject's Name: \_\_\_\_\_

Target Behavior: \_\_\_\_\_  
\_\_\_\_\_ to \_\_\_\_\_ Mon. \_\_\_\_\_  
\_\_\_\_\_ to \_\_\_\_\_ Tues. \_\_\_\_\_  
\_\_\_\_\_ to \_\_\_\_\_ Wed. \_\_\_\_\_  
\_\_\_\_\_ to \_\_\_\_\_ Thurs. \_\_\_\_\_  
\_\_\_\_\_ to \_\_\_\_\_ Fri. \_\_\_\_\_

C. Subject's Name: \_\_\_\_\_

Target Behavior: \_\_\_\_\_  
\_\_\_\_\_ to \_\_\_\_\_ Mon. \_\_\_\_\_  
\_\_\_\_\_ to \_\_\_\_\_ Tues. \_\_\_\_\_  
\_\_\_\_\_ to \_\_\_\_\_ Wed. \_\_\_\_\_  
\_\_\_\_\_ to \_\_\_\_\_ Thurs. \_\_\_\_\_  
\_\_\_\_\_ to \_\_\_\_\_ Fri. \_\_\_\_\_

D. Subject's Name: \_\_\_\_\_

Target Behavior: \_\_\_\_\_  
\_\_\_\_\_ to \_\_\_\_\_ Mon. \_\_\_\_\_  
\_\_\_\_\_ to \_\_\_\_\_ Tues. \_\_\_\_\_  
\_\_\_\_\_ to \_\_\_\_\_ Wed. \_\_\_\_\_  
\_\_\_\_\_ to \_\_\_\_\_ Thurs. \_\_\_\_\_  
\_\_\_\_\_ to \_\_\_\_\_ Fri. \_\_\_\_\_

TARGET BEHAVIOR FREQUENCY

Teacher's name: \_\_\_\_\_ Rm.No. \_\_\_\_\_ Date: \_\_\_\_\_

A. Target Pupil: \_\_\_\_\_  
Target Behavior: \_\_\_\_\_  
Tally each occurrence of misbehavior:  
Monday \_\_\_\_\_  
Tuesday \_\_\_\_\_  
Wednesday \_\_\_\_\_  
Thursday \_\_\_\_\_  
Friday \_\_\_\_\_

B. Target Pupil: \_\_\_\_\_  
Target Behavior: \_\_\_\_\_  
Monday \_\_\_\_\_  
Tuesday \_\_\_\_\_  
Wednesday \_\_\_\_\_  
Thursday \_\_\_\_\_  
Friday \_\_\_\_\_

C. Target Pupil: \_\_\_\_\_  
Target Behavior: \_\_\_\_\_  
Monday \_\_\_\_\_  
Tuesday \_\_\_\_\_  
Wednesday \_\_\_\_\_  
Thursday \_\_\_\_\_  
Friday \_\_\_\_\_

D. Target Pupil: \_\_\_\_\_  
Target Behavior: \_\_\_\_\_  
Monday \_\_\_\_\_  
Tuesday \_\_\_\_\_  
Wednesday \_\_\_\_\_  
Thursday \_\_\_\_\_  
Friday \_\_\_\_\_

Grapher's use only:

A. \_\_\_\_\_  
B. \_\_\_\_\_  
C. \_\_\_\_\_  
D. \_\_\_\_\_

PLEASE RETURN CARBON COPY OF THIS FORM AT NEXT MEETING.

Teacher's name: \_\_\_\_\_ Rm. \_\_\_ Grade: \_\_\_ Date: \_\_\_\_\_

Subject's name: \_\_\_\_\_

Target behavior: \_\_\_\_\_

When does this behavior usually occur?  
(What stimuli trigger it off?) \_\_\_\_\_

What reinforcer or reinforcers are probably maintaining this behavior?

What incompatible behaviors could be strengthened to compete with the  
undesired behavior?

What reinforcers could you use to strengthen the incompatible behaviors  
for this particular child?

What aversive stimuli (punishments) could you use to suppress the  
target behavior?

What Time Out procedures could you use on this child's behavior?

If you begin the treatment described above, what do you predict will  
happen to the child's behavior? Why?

## THE OPERANT CONDITIONING OF CLASSROOM BEHAVIOR

You can eliminate misbehaviors quickly if you keep clearly in mind a few basic principles. To simplify our discussion, we call the basic principles laws and state them in dogmatic form. If this were a research group, it would pay to be more tentative and to qualify our "laws" extensively, but while researchers are not so concerned with changing behavior today, we are very concerned. For quick and effective action, you will find our straightforward presentation most useful.

### Some Terms

If a behavior occurs frequently or at a high rate, we refer to it as strong; if a behavior seldom occurs, we refer to it as weak. So when we refer to the terms "strong" and "weak", we refer only to the rate or frequency of a behavior.

A behavior or response is something your target child does that can be seen, heard, or felt. At present, we will not include thinking, feelings, and other unobservables in this category. In the initial stages, the more successfully you limit your talk to observables, the quicker you will eliminate the target behaviors.

A stimulus (plural = stimuli) is any change around the child; lights, voices, bells, etc. A positively reinforcing stimulus is a change which the child "likes"; he works for it. If used as a payoff for a behavior, then the behavior grows stronger. If given a choice, the child chooses it. Some positively reinforcing stimuli are recognition, release from class, M&Ms, attention, money, prizes, stimuli produced by physical activity, any new or novel stimuli, etc.

An aversive stimulus, negative reinforcer, or punishing stimulus is a stimulus which a child "dislikes" or avoids. It is a stimulus which, if it follows a behavior, quickly weakens the behavior.

### The Reversed Law of Effect

If a response is strong, it is being reinforced. In other words, if a response occurs frequently, there is some reinforcing stimulus or payoff which regularly follows the behavior. Behaviors do not occur in a vacuum. They are strong only if they repeatedly "pay off" --if they are positively reinforced. This is another way of saying that behavior strength depends upon the history of reinforcement. If a behavior is strong, we can infer that, somewhere in the child's history he has repeatedly been paid off for that behavior. The chances are very high that he is still being paid off right in the classroom.

### The Law of Reinforcement Delay

Delayed reinforcers have no effect on a behavior. The payoff has to be immediate or almost immediate if it is to strengthen a behavior. A few minutes or even a few seconds delay between a behavior and its consequences can prevent the payoff from having any effect. Therefore, when looking for the causes of strong behavior, we must look at what happens immediately after the behavior.

### Implications of the Reversed Law of Effect and the Law of Delay

The Reversed Law of Effect and the Law of Reinforcement Delay, combined, give us an approach to the discovery of what causes the target behavior. Since the strength of a behavior depends upon immediate payoff, we simply assume that any strong behavior is getting immediate payoff, somehow, and we start looking for that payoff. When we discover the payoff or reinforcer, we can use the next law to eliminate the target behavior.

### Exercise

#### What "Pays Off" Misbehavior?

You are to list immediate positive reinforcers of "payoffs" which are responsible for childrens' classroom misbehaviors. Think of other classrooms as well as your own. Whether or not it is easy to find such immediate "payoffs", you are to keep searching. Do not blame the broken home or the teacher who had the child last year. Home conditions may have some effect but children learn to do in a class what pays off in that class and at home what pays off at home. Students can tell the difference between home and school; even a rat is that smart. Rats quickly learn to respond one way in one box and another way in another box, if different behaviors pay off in the two boxes.

List below the stimuli or "payoffs" which frequently reinforce misbehaviors in classes. When you have finished, your group leader will ask you to compare notes with other members of your group. By pooling ideas, your group can improve the list.


What "Pays Off" the Target Behaviors Which You Have Chosen?

Now, let's locate the cause of the misbehaviors which you have chosen to study. Just keep in mind the two laws learned above.

1. Very briefly describe, again, the target behavior of each child.

a. \_\_\_\_\_  
Name Target Behavior

b. \_\_\_\_\_  
Name Target Behavior

c. \_\_\_\_\_  
Name Target Behavior

d. \_\_\_\_\_  
Name Target Behavior

2. What do the other children do just after the target behavior?

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

3. What do you usually do just after the target behavior?

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

4. Now, what do you think is the payoff, the reinforcer, which maintains the target response at high rate? Remember, responses are strong only if they are payed off immediately.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

+++++

"Remember that a man's name is to him the sweetest and most important sound in the English language." -Dale Carnegie

### The Law of Extinction

Any behavior which produces no payoff grows weaker. That is, any behavior which gets no positive reinforcer decreases in rate. If a candy or cigarette machine ceases to pay off, we quit putting in coins. If attention-getting behavior ceases getting attention, it grows weaker.

If we identify the payoff for a child's misbehavior, we can weaken the misbehavior simply by seeing to it that there is no longer any immediate payoff. For example, a teacher discovered that her attention was reinforcing even if she scolded, since the children were so hungry for attention that they would rather be scolded than ignored. She had been scolding children for getting out of their seats and they simply got out of their seats more often. Then she put them on extinction; she ignored them when they left their seats. Eventually, most of the children quit leaving their seats.

Extinction usually produces only gradual changes. In the above example, classes were chaotic for about a week as the rate of leaving the seat gradually decreased. Sometimes there is even a brief frustration effect when the child's misbehaviors become stronger rather than weaker. However, if the teacher sees to it that misbehaviors during the frustration effect do not pay off, extinction gradually occurs.

### Make a Plan to Extinguish Misbehavior

Now that you have identified the payoff for each target behavior, you can weaken the behavior by extinguishing it. That is, you can find some way to arrange things so that the payoff no longer follows the target response. You will be most successful if you build a clear, step-by-step plan for extinguishing misbehavior.

1. Explain exactly how you are going to arrange things so that the misbehavior no longer pays off. Make a plan for each target child; a, b, c, & d.

a. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

b. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

c. \_\_\_\_\_

\_\_\_\_\_

d. \_\_\_\_\_

2. What do you expect the target child to do when his misbehaviors no longer pay off? Explain in specific, observable behavioral terms for each child.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

3. What will you do if, due to the frustration effect, the target child begins to grow extremely disruptive? What will then be his reaction to your strategy?

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

+++++

"An overage boy in the fifth grade is openly disregarding the arithmetic lesson and is making a slingshot in full view of his classmates. Two basic questions have to be asked: Will he go on to other and more flagrant behavior to precipitate a scene? Will the behavior spread to other members of the class? If the answer to both questions is No, it may be wise to do nothing at the time. When a young person gets no result from such a bid to "get a rise" from the teacher, the behavior may soon be dropped."

Fritz Redl & William W. Wattenberg

### The Law of Deprivation-Satiation

If a child is deprived of a positive reinforcer, responses which usually produce that reinforcer temporarily increase in frequency. For example, just before dinner, a child more frequently begs for cookies or candy. Begging has, in the past, produced sweets, so when the child is hungry he begs more often. If a child is hungry for attention, his attention-getting behaviors increase.

At the other extreme, if a child is satiated (full), responses temporarily decrease in frequency. Just after Thanksgiving dinner, children seldom beg for sweets and just after a good party they seldom emit attention-getting behaviors.

The Law of Deprivation-Satiation tells us that our extinction plans may cause new problems. Assume that your child has been getting out of his seat and that the payoff was the social interaction involved as you corrected him - the attention. Now, you have decided to ignore his misbehavior, putting it on extinction. But, why did the child get out of his seat? To get attention? Then he must be hungry for adult attention. Now, you plan to block his only source of adult attention? Won't he just get more and more hungry for attention until he does something worse than getting out of his seat? Perhaps he will do something so disruptive, so destructive, so dangerous that you must give him attention! What is the solution?

The next two laws of behavior give us a neat and effective solution to this apparent dilemma.

### The Law of Effect

Any behavior which is followed by a positive reinforcer increases in strength. In other words, if a behavior pays off, it increases in frequency. This is the traditional statement of the law of effect. Earlier, we looked at response frequency and inferred past history of reinforcement. We called this the reversed law of effect. Now, we look at what happens when we arrange a payoff and watch future response rates.

If a child's hand-waving is payed off by teacher-recognition, he is likely to raise his hand more frequently in the future; if noise-making pays off with attention, noise-making is likely to increase in frequency; if completing assigned work produces peer approval, than assigned work will be completed more frequently; if quietly preparing for dismissal leads to earlier dismissal, children will more frequently be quiet; if disorderly behavior produces a verbal game with the teacher, disorderly behavior grows stronger; if study produces teacher attention, children study more of the time.

\* \* \* \* \*

Too often we get what we inadvertently pay for.

The Law of Response Competition

If responses compete, the strongest response wins. Often a child can behave in either of two ways in a certain situation. What he does depends upon the relative strengths of the competing responses. If he has been more often reinforced and less often punished for studying than for horseplay, he will study. If throwing spitballs has had a more favorable history of reinforcement, and is therefore the strongest response, it will win out over studying.

The Law of Response Competition gives teachers another tactic. It is not only possible to weaken the target response using extinction; the target response can be weakened by paying off a competing response. Anything you do which strengthens competing responses will tend to eliminate the target behavior. For example, recall the Law of Effect: Any response which pays off increases in strength. Now, all you have to do is choose behaviors which are incompatible with the target behavior (e.g., studying, paying attention to discussion, etc.) and, arrange regular payoff. As these behaviors increase in strength, they compete with the target misbehavior for the child's time and energy. The target response then decreases in frequency. Also, as you pay off desired behaviors, you keep the child from getting hungry for reinforcers.

How Can You Pay Off Competing Responses?

In order to produce the behaviors you want and to weaken, by response competition, the target behaviors, it is extremely important that you know what reinforcing stimuli are available to you. There is a rich variety of payoffs available to you and many of these stimuli are inexpensive (i.e., they take little of your time and energy and no money).

List below all the reinforcers which you control in your class. Put a check mark beside the most inexpensive ones.

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A Plan for Attacking the Target Behavior

Now, you are ready for the next step in your plan for attacking the target behavior. Keep in mind the Law of Satiation-Deprivation, The Law of Effect, and the Law of Response Competition.

1. What behaviors are incompatible with the target behavior of your selected children?

a. \_\_\_\_\_  
\_\_\_\_\_

b. \_\_\_\_\_  
\_\_\_\_\_

c. \_\_\_\_\_  
\_\_\_\_\_

d. \_\_\_\_\_  
\_\_\_\_\_

2. What reinforcers could you use to strengthen the competing responses? Remember to include the reinforcers which payed off the target misbehavior as well as other reinforcing stimuli. This prevents the child from becoming deprived or hungry for this reinforcer.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

3. Describe in detail how you responded, in the past, to the child when he emitted the competing behaviors listed under #1, above.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

4. Describe in detail your plan for responding in the future to the competing behaviors. Tell exactly how you will pay off these behaviors with your attention, tokens, smiles, early dismissals, errands, or whatever.

a. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

b. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

c. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

d. \_\_\_\_\_

\_\_\_\_\_

5. Remember your plan for using extinction (p. 4). If you both extinguish the target misbehavior and pay off a competing behavior, you should strikingly reduce misbehaviors in most of your target children. If you master these procedures, we can show you other methods at our next meeting.

6. Take these papers home with you, after turning in the carbon copies, and review them several times before our next meeting. In this way you should gain a better understanding of the behavioral laws which were explained. In turn, this may lead you to revise and improve your plans before our next meeting.

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"Confine yourself to what is really needful....if he once finds out how to gain your attention at will, he is your master; the whole education is spoilt."

James Jacques Rousseau

## Reinforcers Available to the Teacher.

### Types

#### I. Giving Attention

Smile, give a pat or nod head as your approval.

Say, "I see you really understand."

Have others compliment him.

Call on him in class when you are sure he can give a good answer.

Remark to class, "Johnny is working harder."

Complimentary note or call to parent.

Read story to him.

Compliment child in presence of principal.

Write complimentary note on his paper.

Citizenship Chart - each 5 days of good behavior earns star.  
4 consecutive stars earns special treat.

#### II. Privilege

Dismiss him a few seconds early; or let him be first in the row to leave.

Excuse from doing homework, announce this aloud.

Have him be lavatory supervisor.

Give the child a ride home.

Invite to an out-of-school special activity.

Have him be line leader.

Give him free time.

Request child's help as a personal favor.

Have him get his coat first.

Have him act as "teacher" for discussion or game.

### Reinforcers - Privileges Continued

Extra lavatory break.

Direct rhythm band.

Decorate bulletin board.

Weekly "Good Behavior" dance as a class conducted award.

Behavior sign-out sheet.

Students who feel they have been good citizens for day, sign sheet at close of school.

Messenger for next day is chosen from list.

Any name may be challenged by group.

### III. Tasks

Use the student to demonstrate a correct method.

Say, good - excellent - very good, - etc.

Have the child feed pets in the room.

Have the child pass out books, papers, etc.

Dust the erasers.

Make him be class monitor.

Have him help a handicapped child in or out of the room.

Erase the blackboard.

Clean blackboard trays of chalk dust.

Appoint him tutor to a needy classmate or younger child.

Book Collector.

Set up chairs.

Audio-Visual chairman.

Write his work upon blackboard.

Have the child pull the shades, open or close window.

Open or close doors for class as it moves in or out.

Water plants in room.

Empty waste baskets.

Check papers.

### Reinforcers - Tasks Continued

Be class messenger.  
Recess Leader.  
Discussion Leader.  
Be captain in gym.  
Special project work.  
Class officer.  
Read aloud composition.  
Demonstrate task to class.

### Token Reinforcers

Give a star.  
Post his work on a prominent bulletin board.  
Establish a game corner.  
Give a few minutes of free time.  
Have a longer recess.  
Play radio as background music.  
Token economy. Play money given for homework completed. Money in turn used to buy privileges, recess activities, library pass, dance ticket during club period, etc.  
Recess pass won by tables competing weekly for points earned through neatness, homework and bell work completion, 100% in math quizzes, etc.  
Candy treat.  
Library pass for reading.  
Establish a craft corner.  
Citizen of the week.  
Receive "Good Conduct" award.  
Award IQ (I quit) talking badge.

## BEHAVIOR MODIFICATION WORKSHOP

### Stopping Payoff.

1. Describe the target behavior in concrete, specific, observable terms.
2. What payoff or reinforcer has been maintaining the strength of the behavior?
3. How will you prevent payoff for the target misbehavior? If attention has been the payoff and you plan to ignore the misbehavior, explain what you will be doing at the moment you are ignoring the misbehaving.
4. Do you expect to get a "frustration effect" when you stop payoff for the target behavior?        If so, explain exactly how you plan to treat the increased frequency and variability of response.

### Switching Payoff.

5. What competing behavior do you wish to substitute for the target behavior?
6. What do your children do when they are dismissed? What do they do with their free time? What do they do on the playground? This should provide you with possible reinforcers for the competing behavior.
7. Describe how you will Switch Payoff.

### For Massive Payoff.

8. What payoffs or reinforcers can you use to strengthen the competing behavior?
9. Develop a plan for satiating your target child with the reinforcers listed in #8--a plan for enriching your classroom with these payoffs.

Teacher: \_\_\_\_\_

**Workshop Members:**

Next Saturday your group leader will help you review your plans for eliminating target misbehaviors. We are arranging for smaller work groups so that each of you can have your plans examined in detail. In this way, you should get more help.

When you attempted to use your original plan, you may have found changes necessary. Also, your reading of the material which was passed out may have led you to make revisions. If you would like us to look at your revised plans before the meeting, you may fill out the attached forms and turn them in to the office to be picked up on Thursday.

Saturday you will also get two new chapters; one about punishment and one about shaping. The punishment chapter tells you how to suppress the target behavior without producing the negative effects which so often result from the use of punishment. The shaping chapter shows you how to produce desired behaviors, such as "doing assigned work", when the behavior does not originally occur at all.

The attached forms only need to be completed if you want us to make comments and suggestions on your plan's latest improvements.

We are looking forward to seeing you Saturday morning.

Sincerely,

Ralph O. Blackwood  
Associate Professor

SATIATION-DEPRIVATION WORKSHEET

1. List reinforcers your children seem to be deprived of, those for which they are hungry. Jot down as many as possible.

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2. What do the children do?\* What activities do they engage in? What things do they choose to do.....  
A. when given freedom of choice in the classroom?

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- B. when the teacher leaves the room?

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- C. when they are dismissed after school?

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3. The activities you have listed under questions 1 & 2 are the most important reinforcers for these children. With these things in mind, go on now to develop a plan for giving more of these reinforcers (answers 1 & 2). Remember to make the reinforcer contingent upon a desirable response (A & C, where possible or give the reinforcer ab lib CB). Briefly write out your plan:

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\* Remember the Premack Principle.

Premack Principle: A high frequency activity will act as a reinforcer for a Lower frequency activity.

## IMPORTANT FACTORS IN APPLYING BEHAVIOR TECHNIQUES

1. Observe child's behavior.
2. Become aware of your reaction to the child - his reaction to you and your behavior in turn.
3. Be objective.
4. Select a priority behavior in one child - it must be a specific behavior.
5. Do a frequency count - get a base line of what's happening.
6. OBSERVE - what do other children do right after this behavior - what do you do? What is the reinforcer?
7. Plan for extinction. Eliminate the reinforcer. (This may cause temporary frustration effect.)
8. Look for competing behavior - try to shape it through successive reinforcement.
9. Select reinforcers - must be something the child values. Tangible things work for a while only.
  - a. Giving attention (smile, nod, pat)
  - b. Verbal praise
  - c. Compliments by others
  - d. Call on child when you're sure he knows the answers
  - e. Say to class - "\_\_\_\_\_ is working harder."
  - f. Complimentary note to parents
  - g. Individual chart
  - h. Read a story to the child
  - i. Citizenship chart -- Each 5 days of good behavior he earns a star and so many stars earn something
  - j. Early dismissal
  - k. Let his row go first
  - l. Free Time - choice of activities - draw, puzzle, read, etc.
  - m. Act as teacher for instruction time
  - n. Classroom job
  - o. Token reinforcement - checks, paper clips, etc. (if has so many, can do something special)
10. As child improves increase expectations.
11. Use verbal reinforcement  
(Ex. If you do this, this will happen, but if you do this, this will happen.)  
Child must begin to develop self-discipline; cannot rely on external reinforcement forever.

## IMPROVING YOUR PLANS

If you are alert and read carefully the materials you have been given, you are probably going to change your plans a number of times. We would like to help you as much as possible in perfecting your plans. Therefore, for those of you who would like us to go over your latest plans in detail, we have provided forms for revising your plans and we have arranged for your revised plans to be picked up on Thursday. In that way, we can look them over carefully before Saturday and your group leader can make specific suggestions for improvement.

**Competing Behaviors:** Improving your plan for weakening misbehavior by strengthening competing behavior.

1. Describe briefly the competing behavior you have chosen for each target child (child a, child b, etc.). Your competing behavior may be something like studying, getting permission before talking, or doing assigned work.
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
  - d. \_\_\_\_\_
2. How will you pay off the competing behavior? Look at the attached list for possible reinforcers which you could apply just after you see the child emit an acceptable behavior which competes with the target behavior. Look especially for reinforcers which he might be "hungry for."
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
  - d. \_\_\_\_\_
3. In the past, what did you do when the child emitted the desired competing behavior? Describe your reaction during the last week.
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
  - d. \_\_\_\_\_

4. Describe your new strategy. Assume that the child studies or does his assigned work or gets permission to talk, what are you going to do to strengthen the desired behavior? Please explain your new strategy on the back of this sheet.

Satiation: Improving your plan for reducing misbehaviors by satiating the target child with the stimuli which he misbehaves to earn.

5. What reinforcing stimuli does your target child seem to be hungry for? To determine what a child has been deprived of, just watch what he does when he has freedom of choice; if he talks, permission to talk should be reinforcing; if he runs, activity should be reinforcing. Also, study the attached list of reinforcers. Now, for each child, list the reinforcers which most strongly attract.

- a. \_\_\_\_\_  
b. \_\_\_\_\_  
c. \_\_\_\_\_  
d. \_\_\_\_\_

6. Now, develop a plan to satiate the child with the reinforcers you listed above. The idea is to choose those times when the child is not misbehaving and flood him, deluge him, supersaturate him, overfill him with the very reinforcers he has been misbehaving to get. But, give him the reinforcers when he is behaving in acceptable ways. Then, he will be so stuffed, so filled, so jaded that he will no longer misbehave to get these reinforcers. List the reinforcers which you plan to use in satiating the child and describe your procedure.

- a. \_\_\_\_\_  
b. \_\_\_\_\_  
c. \_\_\_\_\_  
d. \_\_\_\_\_

Extinction: Improving your plan for extinguishing misbehaviors. Since you have tried out your original extinction plan, let's reexamine it.

7. What do the children do just after the target behavior? Has their reaction changed as a result of your extinction attempts?

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_

8. What do you usually do just after the target misbehavior? Describe here how you have actually been acting since initiating your extinction plans. Use the back of this page to explain your reactions.

9. Stimuli produced by the other children or by you may pay off misbehavior. You may have been mistaken in your earlier analysis of the payoff. So you may want to list a different payoff or additional reinforcers which you think may have maintained the misbehavior. On the other hand, you may have located and eliminated the payoff; the misbehavior may be decreasing but still occurring simply because extinction is not yet complete. So, for each child, explain what is responsible for continuing misbehavior.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_

10. Now that you have identified the payoff for the target misbehavior, exactly how will you arrange things so that misbehavior no longer pays.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_

11. You may have gotten a frustration effect, intolerable behaviors, or behavioral contagion when you tried your first extinction plan. What do you expect this time? Explain exactly what you expect your target child to do when misbehavior no longer pays off.

- a. \_\_\_\_\_
- b. \_\_\_\_\_

continued next page -

c. \_\_\_\_\_

d. \_\_\_\_\_

12. What will you do if the target child shows a frustration effect, if his behaviors are intolerably destructive or disruptive, or if his misbehavior proves to be contagious? Explain (i) what you will do and (ii) what you expect his reaction to be.

a. \_\_\_\_\_

\_\_\_\_\_

b. \_\_\_\_\_

\_\_\_\_\_

c. \_\_\_\_\_

\_\_\_\_\_

d. \_\_\_\_\_

\_\_\_\_\_

Note: If you have questions or comments which this form does not provide for, use the back of the sheets. The more feedback you give us, the more we can help you in understanding these new tools.

SHAPING EXERCISE

Choose a behavior which does not now occur in some child but which you would like to teach. Explain, step-by-step, how you would shape this particular behavior. Be brief, but clear, please.

Child's name: \_\_\_\_\_ This need not be a child you intend to use in our project. This is just an exercise to insure that you comprehend operant conditioning methods.

Behavior which you wish to shape: \_\_\_\_\_

Procedure

Step 1. Name of step: \_\_\_\_\_

Explain your procedures:

Step 2. Name of step: \_\_\_\_\_

Explain your procedures:

Step 3. Name of step: \_\_\_\_\_

Explain your procedures:

Step 4. Name of step: \_\_\_\_\_

Explain your procedures:

Step 5. Name of step: \_\_\_\_\_

Explain your procedures:

continued next page -

Step 6. Name of step: \_\_\_\_\_

Explain your procedures:

Name \_\_\_\_\_ Group # \_\_\_\_\_

## AVERSIVE CONTROL AND SHAPING REVIEW

Please answer the following questions briefly in light of your reading and group discussion.

1. What is the difference between extinction and response-contingent withdrawal of reinforcement?
2. How is escape learning similar to learning by being positively reinforced?

Give an example from the classroom of each of the following punishment procedures. Be sure to describe concretely the behavior and aversive stimulus. Carefully specify the response-stimulus in time. (Is the stimulus imposed or withdrawn before or after the response?)

3. Passive avoidance training.
4. Active avoidance training.
5. Escape training.
6. Response-contingent withdrawal of reinforcement.

Describe briefly one of your attempts to use each of the following:

7. Extinction

8. Satiation

9. Deprivation

10. Shaping

Please explain, in your own words, the ideas expressed to you in the following statement?

11. "It is a terrible law of training that we shall have whatever we approve,"

12. "We shall not have much, even of what we approve, unless we use successive approximation."

Name \_\_\_\_\_

Group \_\_\_\_\_

TEST YOUR MASTERY OF OPERANT THEORY

For each of the following items, select the best alternative. If you do not know the answer, guess. Your score will consist of the number of correct items selected.

1. Misbehavior has many causes but a classroom teacher should be interested most in
  - a. the home conditions which produce misbehaviors.
  - b. the genetic or biological bases of misbehavior.
  - c. the effects of that teacher's classroom conditions on misbehavior.
  - d. the influences of previous teachers and other teachers who work with the child concurrently.
2. Delayed reinforcement has
  - a. little or no effect.
  - b. stronger effect than immediate payoff.
  - c. effects no different from immediate payoff.
  - d. strong effects only when there is adequate mediating behavior.
3. If you were limited to only one of the following, which would be most effective in reducing misbehaviors?
  - a. Ignore the misbehavior.
  - b. Reinforce a competing behavior more strongly than the misbehavior.
  - c. Sate the child.
  - d. Deprive the child.
4. Satiation results in behavior changes which are
  - a. temporary.
  - b. more or less permanent.
  - c. more enduring than the changes produced by payoffs.
  - d. of very little importance in the classroom.
5. If a child is deprived of attention, behaviors which have been paid off with attention at some time in the past will
  - a. decrease in frequency.
  - b. increase in frequency.
  - c. remain unchanged in frequency.
  - d. cease to occur.
6. If a child is out of his seat and you scold him for his misbehavior
  - a. the scolding will act as a pay off.
  - b. the scolding may act as a pay off.
  - c. the scolding will act as a punishment.
  - d. the child will leave his seat less frequently in the future.
7. Considering such stimuli as attention, activity, novel stimuli, and opportunities to manipulate, in our classrooms children are
  - a. satiated.
  - b. deprived.
  - c. almost always provided these stimuli contingent upon desired behaviors.

8. Children will be less deprived in your classroom if you arrange things so that
  - a. you control all the contingencies of reinforcement.
  - b. children have much freedom to choose the reinforcers they want.
  - c. there are not too many reinforcers.
  - d. deprivation is maximized.
  
9. When a child is attempting to get attention because he has not had much attention or love, it is most profitable for the teacher to use a special language in thinking about the problem. That language would include the word
  - a. motivation.
  - b. need.
  - c. drive.
  - d. deprivation.
  
10. Extinction is
  - a. rapid.
  - b. gradual.
  - c. immediate.
  - d. always accompanied by a frustration effect.
  
11. If some behaviors are reinforced and others extinguished, this is called
  - a. shaping.
  - b. differential reinforcement.
  - c. successive approximation.
  - d. extinction.
  
12. In shaping, if the criterion is raised too rapidly, the result is
  - a. successive approximation.
  - b. too rapid learning.
  - c. satiation.
  - d. extinction.
  
13. If we at first give a child a lot of support and then gradually remove the support, this is called
  - a. deprivation.
  - b. successive deprivation.
  - c. shaping by fading.
  - d. differential reinforcement.
  
14. When a child makes a response which turns off a continuing aversive stimulus this is
  - a. escape training.
  - b. active avoidance training.
  - c. passive avoidance training.
  - d. reinforcement withdrawal.
  
15. A child was playing on a sidewalk in the slums. Each time the child stepped into the street his father spanked him. This was
  - a. escape training.
  - b. active avoidance training.
  - c. passive avoidance training.
  - d. reinforcement withdrawal.

16. Which of the following is Time Out?
- A child misbehaves so he is kept after school.
  - A child misbehaves so he is sent to sit facing into the corner and the whole class acts as if he were absent.
  - A child has been chairing a discussion but, due to misbehavior, he is removed from the position of authority and sent to his own seat.
17. When punishment is delayed
- it has no effect.
  - it is just as effective as if it had been immediate.
  - it is effective only if mediation occurs.
18. If you assign school work as punishment and the child does the work in his own room while listening to his favorite records and drinking coke, school work
- will become unpleasant, a conditioned aversive stimulus.
  - school work will be unaffected.
  - school work will become more pleasant.
19. By contrast effects we mean
- the tendency of punished behaviors to increase in situations other than those where the punishment occurs.
  - the difference between the behavior of a child when punished and when rewarded.
  - the tendency of children to behave differently on extinction and when responses are paid off.
20. The most effective way to eliminate a child's misbehavior is to
- tell him the consequences.
  - ask him what the consequences are.
  - have him tell you the consequences.
21. A stimulus or cue which produces an operant response is said to have
- reinforcing effects.
  - stimulus control.
  - extinction effects.
22. A child's own covert verbal behavior can
- act as a cue for his own behaviors.
  - act as aversive stimuli to punish his own behaviors.
  - act as reinforcing stimuli to pay off his own behaviors.
  - all of the above.
  - none of the above.
23. With the essay method, it is most important that the essay
- be aversive.
  - describe the consequences of the child's behavior.
  - explain that the child should be good and not misbehave.

24. Children will learn to copy the essay without arguing if
- a. the teacher tells them not to argue.
  - b. the teacher repeatedly explains why they have to do the essay.
  - c. the arguments do not pay off.
25. When a child repeatedly misbehaves, you should
- a. explain the consequences of his behavior.
  - b. ask him why he misbehaved so that he will get insight.
  - c. have him explain to you the consequences of his behaviors.

Mediation Training Meeting

Nov. 8, 1969

- I. Welcome & Opening Comments--Evelyn MacPherson
- II. Overview--Ervin Thompson
- III. What has been accomplished by operant conditioning treatment--  
Evelyn MacPherson
- IV. Mediation training technique and writing the essay--Ralph Blackwood
- V. Composing essays (For this we will divide into 3 small groups).  
Upper grades--Ervin Thompson, discussion leader  
Middle grades--Evelyn MacPherson  
Lower grades--Ralph Blackwood
  - A. Listing the Consequences (Form 1)
    1. individual work
    2. small group discussion
- Coffee Break
- B. Composing Essays
    1. individual work
    2. small group discussion
- VII. Evaluation & Plans for next meeting (For this we return to the large group. Be prepared to report on difficulties or successes in essay writing.--Ralph Blackwood & Ervin Thompson
- VIII. Closing Comments--Evelyn MacPherson

## ESSAY WRITING INSTRUCTIONS

This morning's work will be divided into two parts: first we will compile the materials to be used in the essays and secondly we will write first drafts of the essays. It is not possible for any one to give you a canned essay because each class and each teacher has different needs. An essay which is meaningful to one group of students would be ineffective with another. Therefore, with our help, you are to write essays to meet your own needs and the needs of your children.

The first task will be to fill our Mediation Form 1 in which you (1) describe the misbehavior which you wish to control, (2) list the aversive consequences of this behavior, (3) describe alternative desired behaviors, and (4) list the reinforcing consequences of the desired behaviors. In completing Form 1, you are not writing the essay but just compiling the materials, the ideas, the descriptions of consequences which you will later use to write the essays. Detailed instructions for this task are included below. After you have completed Form 1, your group leader will direct a discussion of your work. The aim of the discussion will be to refine and extend your lists of consequences.

Following our coffee break, our task will be to compose rough drafts of mediation essays, using Mediation Form 2. The target behaviors and the desirable alternative behaviors should be described in concrete, simple sentences which are highly readable and meaningful to your students. The list of aversive stimuli should be used to compose a highly readable and meaningful paragraph describing the consequences of the misbehavior, in answer to question #2, Form 2. Similarly, the list of reinforcing consequences should be used in writing a paragraph to answer question #4. Whenever possible, these paragraphs should be in the language which the children use when they talk among themselves. This will make them more effective. Also, it is useful to include mention of the behavior from time to time (e.g., "When I talk without permission my teacher will ignore my contribution to the discussion," or "If I do the assigned work I'll know more answers and the teacher will be pleased.")

### Instructions for Form 1.

1. Describe the target behavior concretely and in behavioral terms.
2. List all the aversive consequences of the target behavior which are meaningful to the child. List both immediate and delayed consequences. This list should include aversive stimuli which are contingent upon the target behavior (the escape and avoidance situations) and positive reinforcers which are withdrawn contingent upon the target behavior (response-contingent reinforcement withdrawal) but it should not include extinction conditions. That properly belongs under #4.
3. Describe the desired alternative or incompatible behaviors in concrete, behavioral terms.

4. List all positively reinforcing consequences of the alternative behaviors. Do not describe avoidance of aversive stimulation but you may describe escape from prevailing aversive conditions.

Using Form 2, our task will be to compose rough drafts of mediation essays. The target behaviors and the desirable alternative behaviors should be described in concrete, simple sentences which are highly readable and meaningful to your students. The list of aversive stimuli should be used to compose a highly readable meaningful paragraph describing the consequences of the misbehavior, in answer to question no. 2. Similarly, the list of reinforcing consequences should be used to writing a paragraph to answer question 4. Whenever possible, these paragraphs should be in the language which the children use when they talk among themselves. This will make them more effective. Also, it is useful to include mention of the behavior from time to time (e.g., "When I talk without permission my teacher will ignore my contribution to the discussion," or "If I do the assigned work, I'll know more answers and the teacher will be pleased.")





## PROCEDURES FOR ADMINISTERING ESSAYS TO COOPERATIVE BUT MISBEHAVING CHILD:

A child may write the essay when it is assigned to him but still forget and repeatedly misbehave. In such a case, the following procedure is to be followed:

- 1. Child misbehaves.
2. Signal to desist.
- 3 3. Child continues to misbehave.
4. Drop essay on desk.
5. Child returns essay.
- 6. Return to step #1. Repeat the sequence from 1-6 three times. After the child has handed in 3 copies of the essay, go to step #7.
- 7. Child misbehaves.
- 3 8. Signal to desist.
9. Child continues to misbehave.
- 10. Keep child in to paraphrase essay. For three behaviors, go through the paraphrasing procedure. Steps #7-10 on the next violation, go on to step #11.
- 11. Child misbehaves.
- 3 12. Signal to desist.
13. Child continues to misbehave.
- 14. Keep child in and have him write the essay from memory. Repeat this treatment on three misbehaviors. Then, on the next misbehavior, go on to step 15.
- 15. Child misbehaves.
- 3 16. Signal child to desist.
17. Child continues to misbehave.
- 18. Keep child in and role play misbehavior. For the next 3 misbehaviors go through step 11 through 18. Then, if the child misbehaves again, send him to the office.

Group Number: \_\_\_\_\_ Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Exercise: Your own procedures for training self control using essays**

Having read the procedures for using the essays, explain any changes in the procedure which you intend to make for your own situation. Include any changes for dealing with the uncooperative child as well as the cooperative ones. Be sure to make a carbon of this for your group leader.

## REPORT ON YOUR USE OF THE MEDIATION ESSAY

Please answer the following questions carefully. Later, you will use some of the answers in your group discussions. Also, your answers will help the project leaders in making the workshop more meaningful to you.

### Introduction of the essay procedure to the children

1. On what day did you first introduce the essay procedure? \_\_\_\_\_
2. Did you follow the suggested procedure? \_\_\_\_\_
- \*3. If you did not, explain the procedure you followed, its advantages, and under what circumstances it could be used. (You may continue any answer on the back of the page.)
- \*4. What suggestions do you have for others who wish to introduce the essay procedure?
- \*5. What questions would you like answered about introducing essays?

### A. Observing the misbehavior

1. About how frequently did you observe a misbehavior and decide not to even give a desist signal but to just ignore it? \_\_\_\_\_
- \*2. Do you find it impossible, when you see a misbehavior, to ask yourself, "Which ones of the following will happen if I ignore this behavior; contagion, damage, bodily harm, extinction?"  
What problems did you find here?
- \*3. What questions would you like answered concerning observing the misbehavior and deciding whether or not to intervene?

### B. Silently Signal

1. How frequently did you silently signal a child to desist? \_\_\_\_\_
2. About how frequently did he really desist when signalled? \_\_\_\_\_
3. Did you silently signal every time before assigning an essay? \_\_\_\_\_
- \*4. If you sometimes assigned essays without signalling, explain your strategy.
- \*5. What problems or unanswered questions arose concerning your procedure of silently signalling? (use back of page.)

C. Drop the essay on his desk

- \*1. Explain exactly how you gave the essay-writing assignment.
2. How frequently did you get backtalk or other disturbances when you assigned the essay? \*Explain the student's behavior.
- \*3. How did you handle backtalk and other disturbances? Be specific and concrete.
- \*4. Do your children now cooperate when given the essay? If not, explain.
- \*5. What problems or unanswered questions do you see in relation to assignment of the essays?
6. How many essay-copying assignments have you made? \_\_\_\_\_
7. Did you say anything when you gave a child his essay? \_\_\_\_\_
8. If a child objected to getting an essay, did you talk to him? \_\_\_\_\_  
Did you look at him? \_\_\_\_\_ Did you turn your back? \_\_\_\_\_

D. Continued Misbehavior

1. How many times have the children continued to misbehave during the class period following essay-assignment? \_\_\_\_\_
2. When, after receiving an essay assignment, a child continued to misbehave, did you talk to him? \_\_\_\_\_ Did you send him to the office? \_\_\_\_\_ If so, how many did you send to the office? \_\_\_\_\_ Did you use your previous forms of punishment? \_\_\_\_\_ Ignore it? \_\_\_\_\_ Use new forms of punishment? \_\_\_\_\_  
\*Explain, please.

E. Repeat Paraphrasing Three Times

1. Did you follow the suggestion that copying the essay would be assigned three times before assigning the paraphrasing? \_\_\_\_\_
- \*2. If you modified the procedure, explain your procedure, your reasons for it, and how well it worked in practice.

- \*3. Have you any questions about the sequence of 3 essays?

F. Cooperation is Your Chief Goal

1. How many children "forgot" to return an essay copy? \_\_\_\_\_
2. How many deliberately refused to turn in an essay? \_\_\_\_\_
3. Did you increase the assignment, then? \_\_\_\_\_
- \*4. How did you give the increased assignment? Explain what you said or did.
  
5. How many failed to turn in the increased assignment? \_\_\_\_\_
6. How many did you assign detention due to failure to submit essays? \_\_\_\_\_
7. How many failed to show for detention? \_\_\_\_\_
- \*8. Explain how you handled the detention and the results obtained.
  
9. How many children did you have to send to the principal's office for refusal to cooperate in the procedure? \_\_\_\_\_
- \*10. Explain any serious problems you encountered in getting cooperation and suggest solutions which might work.

G. Paraphrasing the Essay

1. How many paraphrasing assignments did you make? \_\_\_\_\_
2. Did you keep the child after school to paraphrase? \_\_\_\_\_
3. Did you vary from the suggested paraphrasing procedure? \_\_\_\_\_
- \*4. If you differed, please explain. Also, explain any problems you might have encountered using the suggested procedure or any suggestions for changing the procedure.

H. Composing the Essay from Memory

1. How many children did you require to compose the essay from memory? \_\_\_\_\_
- \*2. How did this step work out? What alterations seem needed?

Appendix B

Mediation Essays

These essays were constructed by teachers in the project. They are not necessarily ideal models but represent the teachers' initial efforts.

ESSAY # 1.

1. What Did I Do Wrong?

I talked out and did not raise my hand.

2. Why Should You Not Talk Out Without Permission?

I should not talk out because if I do the teacher will not pay attention to me. I will not be able to give my answer. If I talk out, I will have to stand here and answer questions. I will have to say what I did wrong 10 times.

3. What Should You Have Been Doing?

I should have had my hand up and my mouth shut waiting for my turn.

4. Why Should You Have Been Waiting Quietly With My Hand Up?

The other boys and girls would like me if I let them have a turn to talk. The teacher would smile at me.

ESSAY #2

Directions: Copy neatly these questions and answers on your paper.

1. What Did You Do Wrong?

I would not do what you asked me. I got mad when I was out in the game and I started crying.

2. Why Should You Not Get Mad And Start Crying?

The other children will think I am a baby. I will have to sit in a chair and do nothing. That isn't fun. You and I will not have a good time because you will not be happy and I will not be happy. I will not have a nice thing to take home to my mommy. I will have to answer these stupid questions and it isn't any fun.

3. What Should You Have Done?

I should have done what you told me. I should sit down nicely when I'm out.

4. Why Should You Have Done What You Were Told Quietly?

The other children will like me a lot and think that I'm a big boy.

I shall be chosen the first in line and parade leader. You will choose me to tell the children things I know a lot about. You will let me help the children with their ABC's because I know them better than anybody. You will let me hold the door open and be a good helper.

ESSAY # 3

Directions: Copy neatly these questions and answers on your paper.

1. What Did You Do Wrong?

I was running around. I was jumping out of place and I wasn't ready.

2. Why Should You Not Run Around?

I will have to sit down and not do anything and you will not look at me or talk to me.

I will lose my turn and won't be able to play the game (in the band).

I will have to stay on the floor and be last to...(play, paste, and paint).

I will not have fun.

I will have to talk to you about what I did wrong and that's no fun at all.

3. What Should You Have Been Doing?

I should make something or play with something.

I should sit up ready and try to sit real still.

4. Why Should You Have Been Doing What The Teacher Asked?

I will make nice things and you will talk to me about them.

The children will think I'm smart.

I can play the games and have fun.

I can be one of first to start to play, paint, etc.

You will call on me to talk and tell the other children about things I like to talk about. I will be the door opener for the class.

ESSAY #4

Directions: Copy neatly these questions and answers on your paper.

1. What Did You Do Wrong?

I hit my neighbor (classmate).

2. Why Should You Not Hit Your Classmate?

I should not hit anyone. They might hit me back and hurt me.  
I won't be able to go outside for recess. I will have to stay  
after school. The teacher will call my mother and I will be  
on punishment at home.

3. What Should You Have Been Doing?

I should have been working.

4. Why Should You Have Been Working?

I should have been working to have a good paper.  
The boys would want to play with me.  
The teacher would let me be line leader for the boys.

ESSAY #5

Directions: Copy neatly these questions and answers on your paper.

1. What Did I Do Wrong?

I was talking to others and I should have been doing my work.

2. Why Shouldn't I Have Been Talking?

Because I am in school to learn and if I talk to others, I can't do my work and the others can't do theirs. I will have to stay in my seat at play time and I will have to sit in the gym and watch the other kids play. The kids and The JUDGE will be mad at me and my parents blow their cool.

3. What Should You Have Been Doing?

I should have been doing my work without running my mouth and leaving others alone.

4. Why Should You Have Been Working Quietly?

Because I want the kids and the teacher to like me. My mom and dad will be happy. I will make good grades and I can be a "Brewer Booster".

ESSAY #6

Directions: Copy neatly these questions and answers on your paper.

1. What Did You Do Wrong?

I was talking when I should have been working.

2. Why Shouldn't I Talk During Work Time?

I shouldn't talk during work time because my teacher will keep me in during recess. I shouldn't talk during work time because my teacher will not let me take gym or art. I shouldn't talk during work time 'cause my teacher will keep me after school. I should not talk during work time because my teacher won't let me be a helper. I shouldn't talk during work time because my teacher won't let me play the games during reading group. I shouldn't during work time because I'll have to write a paper.

3. What Should I Have Been Doing?

I should have been working quietly.

4. Why Should I Have Been Working Quietly?

I should have been working quietly so I can go home on time with the other kids. I should have been working quietly so I can take gym and recess and art with the other kids. I should have been working quietly so my teacher will choose me as a helper. I should have been working quietly so I can play the games in the reading group. I should have been working quietly so my teacher will be happy with me. I should have been working quietly so the other kids will like me more.

ESSAY #7

Directions: Copy neatly these questions and answers on your paper.

1. What Did You Do Wrong?

I was talking when I should have been working.

2. Why Shouldn't I Talk During Work Time?

I shouldn't talk during work time because my teacher will keep me in during recess. I shouldn't talk during work time because my teacher won't let me have gym or art. I shouldn't talk during work time because my teacher will keep me after school. I shouldn't talk during work time because my teacher will tell my parents and they will get mad at me. I shouldn't talk during work time because I'll have to write a paper.

3. What Should I Have Been Doing?

I should have been working quietly.

4. Why Should I Have Been Working Quietly?

I should have been working quietly so I can go home on time with the other kids. I should have been working quietly so I can have gym, art and recess with the rest of my class. I should have been working quietly so my Mom and Dad will be proud and happy with me if I am working quietly. If I work quietly the other kids will like me more.

ESSAY #8

1. What Did I Do Wrong?

I made the children look at me because I was acting silly.

2. Why Shouldn't I Act Silly?

I shouldn't act silly because I will have to stay in during recess. I will not be able to go to gym. My grades will not be good and my father will be mad. My teacher will not like me when she is angry with me. The children laugh at me and they think I'm a baby.

3. What Should You Have Been Doing?

I should have been doing my work like the other children and not acting silly.

4. Why Should I Have Been Working?

I should have been working like the other children because I would be able to go to gym with the rest of the class and go out for recess with the rest of the class. My grades will be better and my father will be proud of me and tell me my work is good. The children will think I'm a smart boy and they will like me because I'm not a trouble-maker.

ESSAY #9

Directions: Copy neatly these questions and answers on your paper.

1. What Did You Do Wrong?

I was talking when I should be working.

2. Why Shouldn't You Talk?

If I talk I will not get my work done and my work will be sloppy. My teacher and my mother will be unhappy with me. I will not be able to become a good citizen from my room.

3. What Should You Be Doing?

I should be doing my work.

4. Why Should You Keep Your Mouth Quiet and Do Your Work?

If I do my work it will be neater and my mother and teacher will be pleased with my work. I will be able to become a "Good Citizen." I will also have time to play with the games in the room.

ESSAY #10

Directions: Copy neatly these questions and answers on your paper.

1. What Did You Do Wrong?

I was goofing around when I should be working.

2. Why Shouldn't You Goof Around?

If I do not listen to my teacher she will tell my mother and my mother will get mad and whip me when I get home. I will have to stay in at recess time and have to sit in my seat when the other children are done with their work and playing games. I will have to copy this paper.

3. What Should You Be Doing?

I should listen carefully, follow directions and do what my teacher said to do.

4. Why Should You Have Been Paying Attention And Doing Your Work?

Because if I do what my teacher said my mother and my teacher will be happy. I will get good marks on my papers and learn better. I will have time to play with the games in the room.

## ESSAY #11

Directions: Copy neatly these questions and answers on your paper.

1. What Did You Do Wrong?

I did not follow directions and complete my work.

2. Why Should You Not Fool Around?

When I do not follow directions I seem to be a dum-dum. My grades are low and my parents become angry and ashamed of me. School work gets harder because I missed important ideas. If I keep on this way I may have to repeat this grade. Not following directions causes me to miss recess and stay after school. This kind of behavior will keep me from joining the "Good Bunch" and I'll never get a chance to become guard.

3. What Should You Have Been Doing?

I should have followed directions and finished my work.

4. Why Should You Have Been Following The Directions Until Your Work Was Completed?

When I follow the directions and complete my work, I learn much more and my friends and parents will really dig me. When I follow the directions I can enjoy my recess and go home at 3:30. When my work is done properly I can have fun playing with the room games. The Good Bunch are the real swingers in my room. When I groove and lay the work out for my teacher I can swing with the Good Bunch. When I prove that I'm "down" with it, my teacher might make me a guard.

ESSAY #12

Directions: Copy these questions and answers on your paper.

1. What Did I Do Wrong?

I was talking during class.

2. Why Shouldn't I Talk In Class?

When I talk in class I disturb the others. They will get mad at me. They will know I am showing off and that will make me look like a baby. I might have to sit in the play-pen by myself. When I talk my work is poor and does not get done. I will get poor marks. I will have to stay in at recess. I make more work for myself when I talk.

When I talk, my teacher gets mad. She will think I am not a mature fifth grader. She will assign extra work. When I talk she can't have fun. The class becomes boring. My parents will see the "U" I may get in conduct. They will get mad. When I talk my row is the last to leave. Because of my big mouth, the class might not get their dance on Friday. When I talk I will spend time writing essays, when I could be working and playing with my friends.

3. What Should I Have Been Doing?

I should have been doing my work and giving others the chance to do their work.

4. Why Should I Have Been Working Quietly?

When I work quietly, I show my friends and my teacher I can take care of myself. They will think I'm grown up and cool. My friends will want to be like me. I may get to be a leader and get special room privileges.

My grades will improve. This will make my parents and teacher happy. My friends will think I'm real smart. I will get to go out for recess. My teacher will give me special jobs that I like. I might even get paid extra money. When I do my work, my teacher can find groovy things for the class to do. We can have our Good Behavior Dance on Friday. Then school is fun and swinging.

ESSAY #13

Directions: Copy neatly these questions and answers on your paper.

1. What Did You Do Wrong?

I just wrote anything to get finished.

2. Why Should You Not Just Write Anything?

If I just write anything, the teacher sends me back to my seat, or she makes me kneel on the floor and do my work correctly. I will also have to write this essay if I don't do my work accurately. If I don't do my work accurately, and fool around, I will make low grades and will have to repeat this grade. This will cause my friends to laugh at me and I will not be "down" like they are. My teacher will not allow me to play games in the room during recess. I will have to write this stupid paragraph during the time I could be playing outside or watching television.

3. What Should You Have Been Doing?

I should have been listening carefully when the teacher was teaching the lesson, then I could do my work accurately.

4. Why Should I Have Been Paying Attention And Doing My Work Accurately?

If I pay attention and do my work accurately, I can do my work at my seat, or I can go to the library when finished, or I might go to the library and look at some books and the view-lex. I might get to be messenger for the teacher for a day, or I can play games at recess. If I do my work accurately my grades will improve and I will pass on to the sixth grade. Then my friends will think I'm "down". I will be able to play outside when I get home instead of writing this paper.

ESSAY #14

Directions: Copy neatly these questions and answers on your paper.

1. What Did You Do Wrong?

I talked without raising up my hand.

2. Why Should You Not Talk Without Recognition?

I should not talk without raising my hand because it disturbs the class and we're all talking at the same time. Sometimes it causes arguments between two or more people. My teacher will not call, or pay attention to me until I get my name called. When I'm talking, I don't hear what is being said. If I talk without permission, I will have to stand outside the door, or kneel by myself and do my work on the floor or write this stupid paragraph and my friends will laugh at me.

3. What Should You Have Been Doing?

I should have raised my hand and waited for the teacher to call on me before speaking.

4. Why Should You Have Waited For Recognition?

I should have raised my hand and my teacher will give me a turn to speak. I can belong to the discussion group, I can play games at recess, or read the easy books when my work is finished correctly. Sometimes, I can go to the library and look at the view-lex. My teacher will let me be the "messenger" for the day. I will be "down" if I raise my hand before talking.

ESSAY #15

Directions: Copy neatly these questions and answers on your paper.

1. What Did You Do Wrong?

I was fooling around with things instead of doing my work.

2. Why Should You Not Fool Around With Things?

I should not fool around with things during class because if I do, I will have to sit quietly at recess while my friends have fun playing games. I will feel foolish when I give a silly answer in class. My friends will laugh at me and think I'm too stupid to be in the sixth grade. I will have to remain after school while my friends are out playing football.

3. What Should You Have Been Doing?

I should have been paying attention and doing my work.

4. Why Should You Have Been Paying Attention And Doing Your Work?

If I pay attention I will be able to get better grades. My friends will think I'm pretty cool when I flash my jazzy report card. If I pay attention my teacher will select me as messenger or radio man. I will become a four-star general and participate in the officer's ball. If I pay attention, I will make it to seventh grade. My parents will be very proud of me on promotion day. At Junior High I'll be real groovy because I will be able to dig the work.

ESSAY #16

Directions: Copy neatly these questions and answers on your paper.

1. What Were You Doing Wrong?

I was talking out in class without permission.

2. Why Should You Not Talk Out In Class?

When I talk without permission, I can't hear, I can't learn and I may have to repeat the sixth grade. If I repeat the sixth grade, my parents will be ashamed of me and my friends will call me stupid and laugh at me. When I talk, I will have to sit at my desk while my friends play games during recess. By talking during class I make my table or line the last to leave and my friends will be mad at me. When I continue to talk in class, I will have to copy this essay. If I still continue to talk, I will have to stay after school and my parents will be called.

3. What Should You Have Been Doing?

I should be listening and doing my work quietly.

4. Why Should I Be Listening and Working Quietly?

When I listen and do my work quietly, I can be proud of myself because I am learning and will be ready for Junior High School next year. I can be chosen as a "Brewer Booster" and my friends will think I am cool. My teacher will let me help her by correcting papers, washing the boards, or being a room leader. I will be able to help after school and before class. When I do my work quietly, I finish it in time to be able to play with the games in the room or go to the library. My parents will be proud of me because I am doing a good job in school. My friends will think I am with it.

ESSAY #17

Directions: Repeat each sentence 15 times (orally).

1. I will not make NOISE.
2. I will not bother people.
3. I will not disturb my neighbors.
4. I will not get out of my seat without permission.

**Appendix C**

**Some Punishment Essays**

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## PUNISHMENT ESSAY

Directions: Copy this article neatly on your paper.

All of a sudden Bobby said, "Oh, look! Here comes the man who sells iceboxes. He brought our icebox to us yesterday."

Mr. Brown was smiling when he saw the ice water. Then he said, "Oh, Bobby! Your mother called me on the telephone a while ago. She asked me to come and fix the icebox she bought yesterday.

"She said it doesn't make ice, and she doesn't know what's the matter. But I can see what's the matter with it.

"You took the ice out. Then you filled the pans with water again, and it hadn't turned to ice yet when she looked at it."

Then Mother came outside, and when she learned about the ice, she laughed and said, "That's a good joke on me!

"I thought my fine new icebox wouldn't make any ice at all. But it has made ice for almost everybody in the whole town."

On a hot summer afternoon Tom was riding along the road on Sleepy Sam.

The poky old horse stopped often and ate grass beside the road. But today Tom didn't care. He was just out riding and playing a game all alone.

His eyes were shut, and he was trying to guess all the pleasant country sounds.

## PUNISHMENT ESSAY

Directions: Copy this article neatly on your paper.

If your writing is too nearly vertical or too slanting, there is something wrong with position. Either the body position is not right, the paper is being held at the wrong slant, or you are not writing in front of your eyes and pulling the down-strokes toward the center of your body (for the left-hander, pull down-strokes toward the left elbow).

If the bottoms of the letters are shaded, there is too much pressure being put on the pen or pencil at the bottom of each letter. The pen or pencil is being held incorrectly.

Position and slant go hand in hand. If your paper and body are in the correct position, and if you write directly in front of your eyes and pull all of the down-strokes or slant-strokes toward the center of your body, the slant of your writing will be accurate, uniform, and regular.

## PUNISHMENT ESSAY

Directions: Copy this article neatly on your paper.

### MEETING THE THREAT

The United States is the strongest of the free nations. It has therefore played the leading part in checking Communism. The effort has cost billions and billions of dollars.

Never before in time of peace has the United States kept such large and expensive armed forces as those of today. Like the huge forces of the Soviet Union, ours are equipped with the latest weapons. The most destructive are hydrogen bombs (H-bombs), which can be carried by either planes or rockets.

In addition to arming itself, the United States has armed its friends. Wherever a Communist-threatened nation has asked for American weapons, they have been sent. In many cases United States soldiers or airmen have gone with them to train men in their use.

American lives, as well as dollars, have been spent to check Communism. In the early 1950's, the United States and its allies fought a war to save South Korea from Communist invaders. Though the Communist members of the United Nations wanted South Korea conquered, the UN voted to use force in order to save it. The armies fighting to save South Korea were made up principally of Americans. More than once since the Korean War, countries have asked the United States for help in their struggle against Communism. The United States has shown that it will fight, if necessary, to keep Communists from taking a country by force.