ABSTRACT

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The association between reading disability and inappropriate classroom behavior has been reiterated in the literature. One hypothesis concerning the joint occurrence of reading and behavior problems is that the behavior problem is secondary to the learning difficulty. Classroom conditions may be such that behaviors incompatible with successful academic functioning are being reinforced and/or appropriate classroom behaviors are not being reinforced. If poor academic achievement and inappropriate behavior are related, then remediation of the reading problem should improve classroom behavior.

The present study examined classroom behavior of teachers and problem readers who were provided with remedial programmed instruction for ten weeks. It was hypothesized that children with reading disabilities would demonstrate a higher rate of inappropriate behavior than normal children. In addition, the inappropriate behavior of children in the remedial program was expected to decrease as instruction progressed. Finally, positive teacher attention was expected to increase toward children included in the remedial program.

Thirty-six fourth grade students served as subjects in the present study. Twenty-seven subjects were identified as reading disabled and were included in a remedial reading program outside the classroom. Nine subjects served as a normal control group. Data were collected by two observers in the classroom setting. Eleven classroom

behaviors were observed for ten weeks of remedial instruction. A multivariate analysis of variance was performed on the eleven dependent measures. A univariate analysis of variance was performed on each dependent measure.

The present study indicated little support for the hypothesis that disabled readers exhibit a significantly higher frequency of inappropriate behavior than normal children. The results suggested that behavioral improvements observed in the remedial program may generalize to the classroom setting. Three of the child and teacher behaviors (Off-task, Student Initiations, No Response) showed a significant treatment effect. Only one behavior (Out of seat) showed a significant interaction effect. Generally, all experimental groups improved behavior over time with minimal differentiation according to treatment received.

THE EFFECT OF REMEDIAL READING PROGRAMS ON THE CLASSROOM BEHAVIOR OF CHILDREN WITH READING DISABILITIES

by

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CHAPTER I

INTRODUCTION

There is a lack of agreement in the literature on the definition of reading disability (RD) due to variation in diagnostic techniques and hypothesized etiological factors. Perhaps the most widely quoted definition is that of Eisenberg (1966) which states that reading disability is "the failure to learn to read with normal proficiency despite conventional instruction, a culturally adequate home, proper motivation, intact senses, normal intelligence and freedom from gross neurological defects". Recent estimates have indicated that reading disabled children constitute a serious problem in the schools. Between 5 and 25% of school children have been designated as reading disabled (Bond and Tinker, 1974; Austin, Bush and Huebner, 1961; Tarnopol, 1971).

The link between reading disability and inappropriate classroom behavior has been reiterated in the clinical and research literature (Holt and Kicklighter, 1967; Johnson and Myklebust, 1967; Tarnopol, 1969). In a review of research studies, Bond and Tinker (1967) concluded that there is a greater incidence of behavior problems among poor readers in comparison to normal readers. Clinical descriptions of RD children have indicated a high incidence of "emotional" problems. Gates (1947) determined that 75% of severe RD children exhibited "personality maladjustment", while results of 41% and 40% were reported by Robinson (1946) and Frost (1965), respectively.

Hyperactivity is probably one of teachers' most frequent complaints of children with reading disabilities. Hyperactivity usually refers to the child as being in constant motion or being unable to sit at his desk without shuffling or twisting in his seat. He is also more likely to be inattentive and engage in inappropriate talking during class (Myers, 1969). Bender (1959) collected the following complaints about learning disabled children from parents and teachers: (1) bright and obedient but daydreams; (2) short attention span; (3) frequent temper outbursts without apparent reason; (4) jumps from one activity to another and minds everyone else's business; (5) no self-control and uncooperative with other children. Johnson and Myklebust (1971) described attentional disorders either as attention being deficient (unable to attend to a task for a specified amount of time) or excessive (unable to change focus of attention to a new task at the appropriate time). Ross (1967) similarly described children who exhibit "secondary psychological stress reactions" produced by learning problems. Behavioral descriptions of such children cut across most categories of inappropriate classroom behavior including aggression, non-attending, inappropriate talking, negative self-verbalizations, and perseveration.

Psychotherapy has been the traditional approach in treating the child with both academic and behavior problems. Historically, reading disability has been considered to be the result of some underlying emotional problem. Within the psychodynamic frame of reference, play therapy and family therapy have been utilized to assess and alleviate personality disturbances which produced "emotional blocks" to learning.

The goal of traditional treatment has been to remove the "emotional block", thus freeing the child to learn. Several investigators have questioned the appropriateness of psychotherapy for RD children and have generally reported unsatisfactory results with such treatment (Tarnopol, 1971).

Ashcraft (1970) reported no change in the school performance of children given psychotherapy for "emotional" disorders. Review of the psychodynamic formulation suggests that behaviors incompatible with successful academic functioning are being labelled "emotional disturbance". Circular reasoning has been involved in that a description of the behavior is used as an explanation and as the basis for inferring emotional disturbance (Thomas, Nielson, Kuypers and Becker, 1968). Rather than attributing academic difficulty to emotional disturbance, an alternative hypothesis might be that the learning problem is primary and the behavior problem secondary. The high frequency of inappropriate behavior in RD children may be the result of antecedent and consequent stimuli in the environment. Classroom conditions may be such that behaviors incompatible with successful academic functioning are being reinforced and/or appropriate classroom behaviors are not being reinforced. In essence, disruptive behavior may be under the control of stimuli in the classroom. For example, Staats (1971) has suggested that poor reading performance may be the result of sparse, noncontingent, or absent reinforcement. In addition, reading may also be an occasion for receiving aversive stimuli. Inappropriate behaviors may provide an escape from the aversive situation. Consequently, disabled readers may develop avoidance responses to reading, become withdrawn, daydream excessively, or display antisocial behavior (Bond and Tinker, 1974).

Ayllon, Layman and Burke (1972) included academic as well as social objectives in defining appropriate classroom behavior. Successful academic behavior may be divided into two classifications: (1) educational survival skills and (2) academic responses. Educational survival skills include a repertoire of behaviors serving to increase the probability of successful academic functioning, e.g., positive social interactions, attending to the task, volunteering information. Academic responses refer to the rate of correct responding to curriculum materials (Hops and Cobb, 1972).

Hops and Cobb (1972) have proposed that both educational survival skills and academic responses are necessary for success in the school setting. They pointed out that high academic response rates presuppose a minimal level of survival skills. Furthermore, an ongoing interactive process may be described such that teacher behaviors influence and are influenced by the student's level of survival skills and his level of academic responding. Therefore, consideration of the child's social agents, especially the teacher, may be fundamental to the success of remedial efforts.

If inappropriate behavior and poor academic achievement are related, then remediation of the reading problem may improve classroom behavior. However, it is possible that a third variable is determining the observed rates of both inappropriate behavior and reading difficulty. That is, reading disability and inappropriate behavior may not be causally related. Thus, the possible relationships between inappropriate classroom behavior and reading problems may be conceptualized as follows: (1) the behavior problem may directly cause the learning disability --

interference with the learning process comes directly from the child's behavior; (2) the inability to learn successfully and obtain reinforcement will be obtained for inappropriate behavior; (3) reading problems and inappropriate behavior may be a function of a third unknown variable.

Previous literature has suggested that inappropriate classroom behavior is correlated with reading disability. The literature questions the appropriateness of treating the emotional or behavioral problem by traditional psychotherapy in attempting to improve academic performance. The lack of information on the hypothesis that behavior problems are a function of a specific learning disability warrants further attention. This line of investigation should be pursued before attempting to examine possible factors which may be causing both academic and behavior problems.

The present study was designed to examine the classroom behavior of teachers and RD children who were provided with remedial programmed instruction for ten weeks. Children identified as RD were expected to show an initially higher rate of inappropriate behavior than normal readers. The inappropriate behavior of subjects in the remedial program was expected to decrease during the course of the remedial program. As RD subjects improved their academic skills and received more reinforcement for academic behaviors, inappropriate classroom behavior was expected to decrease in comparison to an RD control group. Teacher behavior was expected to change as a result of actual changes in the classroom behavior of the RD children or the expectancy that behavior would improve. That is, positive teacher attention was expected to increase toward subjects in the remedial program as a function of:

(1) actual behavioral gains demonstrated in the classroom or (2) the expectancy of behavioral gains due to the subject's inclusion in the remedial program. A series of studies in the classroom setting have demonstrated the expectancy effect with teachers, whereby teachers' expectancy functions as a self-fulfilling prophecy for student behavior (Rosenthal and Jacobson, 1968; Rosenthal, 1966; Meichenbaum, Bowers and Ross, 1969).

CHAPTER II

METHOD

Design

The twenty-seven RD subjects were randomly assigned to one of three groups. The Accuracy group received programmed reading instruction with reinforcement contingent upon correct performance. The On-task group received programmed reading instruction with reinforcement contingent upon on-task behavior. The third group was a no-treatment RD control group. A fourth group of nine children was a no-treatment normal control group.

Subjects

Thirty-six subjects were chosen from two elementary schools in the Guilford County school system. All fourth grade students in these two schools were given the Slosson Intelligence Test and the Slosson Oral Reading Test. Twenty percent of the children (n=27) with the lowest scores on the Slosson Oral Reading Test, but whose Slosson IQ test scores were 79 or above, within each school were designated as reading disabled. An additional nine children, matched in sex and IQ score with nine randomly selected RD children, served as a normal control group.

The mean Slosson IQ scores for the experimental groups were as follows: Accuracy group, 93.2; On-task group, 95.3; RD control group, 92.3; Normal control group, 98.8. The mean Slosson Oral Reading Test score for the experimental groups were as follows: Accuracy group, grade 2.8; On-task group, 3.0; RD control group, 2.5; Normal control group, 4.6. There were four females and five males in the Accuracy and

On-task groups. There were two females and seven males in the RD control group and five females and four males in the Normal control group.

Subjects were drawn from seven different classrooms in two schools. From the first school, one subject was observed in classroom #1; three subjects in classroom #2, eight subjects in classroom #3. From the second school, five subjects were observed in classroom #4, six subjects in classroom #5, seven subjects in classroom #6, and six subjects in classroom #7. A total of seven teachers participated in the study.

Observers, Observer Training and Observer Reliability

The author and one undergraduate psychology major served as observers; the author collected 60% of the data (three days a week), and the second observer collected 40% of the data (two days a week).

Prior to the initiation of the study, observer training was conducted until at least an 85% agreement criterion was reached on the behavior code for three consecutive sessions. Observer agreement was calculated according to the following formula: number of agreements divided by number of agreements plus disagreements. Within each interval, one agreement was defined as a category coded by both observers. When one category was marked by an observer it must have been matched by the second observer for an agreement to occur. One disagreement was defined as an interval in which a behavior was coded by only one observer.

Reliability measures were taken twice weekly for a total of 360 minutes throughout the study. In addition, observers participated in

regular sessions for discussion of the behavior code and accuracy feedback.

Observers were present in the classroom three weeks prior to the initiation of treatment. During the first week, observers practiced using the behavior code to establish adequate reliability. Preliminary observations were taken two weeks prior to the initiation of treatment. This two week period was designed to familiarize the subjects with the observers and to establish a stable baseline rate. Data collected during the first three weeks were not included in the final data analysis.

Data were collected by two observers. Observer 1 served as a reliability checker for observer 2. Reliability checks were made twice per week except for occasions when the second observer was unavailable. At that time, observer 1 collected the data.

Observers were not informed of the subjects' assignments to the experimental conditions. Teachers were notified of subject's assignment to either Accuracy or On-task groups. They were not informed of the subjects' assignments to RD control and Normal control groups.

Remedial Program

Children in the remediation program received instruction in groups of three children for 20 minutes per day outside of the classroom with a "special" (Psychology graduate student) teacher. Remediation was conducted in four preliminary and 48 treatment sessions for the two treatment groups. Instructional materials were Programmed Reading (third edition) by C. D. Buchanan (Webster/McGraw-Hill, 1973). Reinforcement and instructional procedures were introduced in the preliminary sessions. Each child began programmed instruction at his

ability level. Two treatment groups were differentiated. Children in the Accuracy group received reinforcement contingent on percent of accurate responses. The teacher reviewed answers each day with every subject with social praise and points contingent on correct answers. Children in the On-task group received reinforcement contingent upon percent of time engaged in on-task behavior during the session. Each subject reviewed his own work for correction, while the teacher computed points earned for time on-task. Back-up reinforcement was time in a "Fun Room" stocked with games, blackboard, table and chairs, writing and drawing materials, radio, cassette recorder and reading material.

Behavior Code

The behavior code included both pupil and teacher behavior and was a modification of codes developed by Hops and Cobb (1972) and O'Leary and O'Leary (1972). The behavior categories were not exclusive, more than one behavior could be coded during the same interval.

1. Off-task: This category was coded when the behavior was detrimental to the child's own learning. The subject looked at things in the environment other than those aspects that had to do with the current academic activity. This category included situations when the child did not write or read when so assigned, the child worked on inappropriate material, daydreamed as reflected in not working, or the child did not ask the teacher for additional work or help when finished with the assigned task, and merely sat at his desk.

2. Noise: The child created any audible noise or vocalization, without permission. Any audible sound was to be recorded, even though it did not "seem" disruptive. This category included moaning, calling

out an answer without permission, any vocalization made in response to the behavior of another child, if the child had not received permission from the teacher to speak, whispering, crying, shouting, and operant coughs. Also included were turning pages in an exaggerated manner producing noise, moving the desk around, pencil tapping, banging objects, or shuffling feet more than once each way.

3. Playing: The child used his hands to play with his own or community property so that such behavior was incompatible with learning. This category included playing with a toy when an assignment was given, picking holes in a workbook, cleaning nails with a pencil, drawing on self, manipulating a pencil in a manner incompatible with learning, and looking into the desk but not obtaining a task-oriented object.

4. Out of Seat: The child moved from his chair when not permitted or requested by the teacher. None of the child's weight was supported by the chair, although he may have been in physical contact with the chair. The subject left his seat to get a reading book during a math lesson. The subject stood with the back of his legs or hands touching the chair. The subject went to the teacher's desk without permission.

5. Inappropriate Talking with Teacher: This category was used whenever the content of conversation with the teacher was negative or nonacademically oriented or when classroom rules did not allow interaction with the teacher. Examples are "I don't want to finish the work", I won't go to the principal's office". As a response from the teacher, the same definition held, i.e., if the teacher talked about nonacademic material as a response to the student's behavior.

6. Appropriate Talking with Teacher: This category was checked when the pupil talked with the teacher about academic material whether in private as in independent work situations or answered questions in other situations. If the teacher interacted with the child when the child talked appropriately, this category was rated. The reason for coding the subject's behavior and the response in the same category was the difficulty of differentiating other responses in rapid verbal exchanges.

7. Student Initiated Interaction: The student initiated or attempted to initiate an interaction with the teacher. The student may have gone to the teacher's desk during independent study or raised his hand for assistance in solving a problem. If there was a verbal exchange then the content was coded as either appropriate or inappropriate talking with the teacher. For example, if the student asked the teacher for help with a reading assignment then the code was Appropriate Talking with Teacher. If the student asked what the lunch menu is the code was Inappropriate Talking with Teacher.

8. Teacher Initiated Interaction: The teacher initiated or attempted to initiate an interaction with the subject. The teacher may have approached the student's desk during independent study or called the student to her desk. If there was a verbal interchange, then the content of the interchange determined the coding category which was either Appropriate Talking with Teacher or Inappropriate Talking with Teacher.

9. No Response: This category was marked only when the teacher made no verbal or physical response to an attempted interaction: if the child raised his hand and was not called on to answer, or if the child asked a question and was not answered by the teacher.

10. Negative Feedback: The teacher gave clear verbal, gestural or physical disapproval of the student's behavior or characteristics during the observation interval. The verbal cues included statements containing dislike, disgust, dismay, or perturbation over the student's work, attitudes or appearance; it included simple feedback as to the incorrectness of an academic response, e.g., "That's wrong". Examples of statements that fulfilled the criteria were: "I don't like that tone of voice", "You didn't pass in your homework on time", "Your work is sloppy". Gestural behaviors included frowns and shaking the head. Physical cues included hitting, spanking, pulling hair, and tugging at the arm.

11. Positive Feedback: The teacher gave clear verbal, gestural or physical approval to the student. The verbal cues included statements containing praise for the student's work, attitudes, appearance and conduct; it included simple feedback as to the correctness of an academic response, e.g., "That answer is right". Gestural behaviors included smiles, nodding of the head and clapping hands. Physical approval included hugs, pats on the back, and other physical contact of a positive nature.

Preliminary Observations

To familiarize the children with the observer's presence, preliminary observations were conducted daily for two weeks on all thirty-six children. Observers were not informed about any child's group assignment throughout the study. Following the preliminary observations, teachers were given the names of children assigned to the Accuracy group and the On-task group. Teachers were not given the identity of children assigned to RD control and Normal control groups.

The order of observation for both classrooms and subjects within classrooms was randomized each day. Each day, observers were given the order of classrooms and subjects.

Observation Procedure

Observers were introduced to the class as student teachers who were present to observe the classroom teacher. Teachers were told observers were present to observe children in the remedial program. Observers were seated in the back of the room and were in the classroom one week prior to the preliminary observations. During this one week time period, observers practiced using the behavioral code. The class was instructed not to interact with the observers.

Each observer was given an observation package containing a description of appropriate observer behavior, coded data sheets, a key to the code, summary data sheets and a seating chart for each classroom. Each subject was observed daily for two minutes over a ten week period, with time intervals divided into ten seconds for observation and five seconds for recording. Eight observations were taken for each subject daily.

CHAPTER III

RESULTS

Interobserver Agreement

Observer agreement was calculated according to the formula: number of agreement divided by the number of agreements plus disagreements. Reliability data were collected for 13 sessions during the 10-week remediation period. The 13 reliability sessions were distributed throughout the observation sessions with a minimum of one per week and depended on the availability of a second observer.

Overall reliability for all variables across all sessions ranged from 69% to 92%. Mean reliability for each dependent variable across all sessions was as follows: Off-task, 88%; Noise, 68%; Playing, 75%; Out of Seat, 92%; Inappropriate Talking with Teacher, 95%; Appropriate Talking with Teacher, 97%; Student Initiated Interactions, 95%; Teacher Initiated Interactions, 93%; No Response, 100%; Negative Feedback, 92%; Positive Feedback, 95%. The low reliability for Noise suggests that the perception of sound or noise may be more difficult than the perception of visual events.

Data Analysis

Table 1 presents the mean number of intervals in which each behavior occurred for the Accuracy, On-task, RD control and Normal control groups. In terms of overall frequency, the Accuracy group tended to display more inappropriate behavior (Off-task, Noise, Playing, Out of Seat, Inappropriate Talking) than the remaining three groups. However, the On-task group tended to present fewer inappropriate behaviors

TABLE 1

Mean number of intervals per day for ten weeks in which each behavior occurred for Accuracy, On-task, RD control and Normal control groups (maximum of 8 intervals)

Child Behavior	Treatment Group			
	Accuracy	On-task	RD control	Normal Control
Off-task	4.10	3.09	3.76	3.25
Noise	1.15	0.67	0.90	0.89
Playing	1.78	1.46	1.98	1.80
Out of Seat	1.49	0.87	1.08	1.07
Inappropriate Talking	0.22	0.33	0.17	0.10
Appropriate Talking	0.06	0.01	0.13	0.03
Student Initiations	0.14	0.33	0.09	0.14
Teacher Behavior				
Teacher Initiations	0.08	0.09	0.09	0.04
No Response	0.06	0.25	0.05	0.11
Negative Feedback	0.11	0.09	0.06	0.03
Positive Feedback	1.10	0.13	0.08	0.05

than the Accuracy, RD control and Normal control groups. Teacher behaviors were very infrequent; only one teacher behavior, No Response, appeared to vary across the experimental groups.

A repeated measures multivariate analysis of variance, including the seven child behaviors and four teacher behaviors, indicated that the main effect of Type of Treatment was significant ($F = 3.05$, $df = 36,819$, $p < .01$) as was the effect of Sessions ($F = 2.60$, $df = 108,2029$, $p < .01$). The interaction effect was not significant ($F = 1.03$, $df = 324,3083$).

Child Behavior

Figure 1 presents the mean number of intervals for Off-task per session for Accuracy, On-task, RD control and Normal control groups. A repeated measures univariate analysis of variance for Off-task revealed a significant difference among treatment groups ($F = 3.88$, $df = 3,32$, $p < .05$). Newman-Keuls post hoc tests indicated that the Accuracy group scored significantly higher in Off-task than the On-task and Normal control groups ($p < .05$). The effect of Sessions was also significant ($F = 2.55$, $df = 9,288$, $p < .01$). There was a significant increase in Off-task for all groups from week 3 as compared to week 6. Table 2 presents mean frequency of intervals for each behavior across groups for each week. The interaction effect was not significant ($F = 1.21$, $df = 27,288$).

The univariate analysis of variance for Noise indicated no differences among Types of Treatment ($F = 1.45$, $df = 3,32$). The effect of Sessions was significant ($F = 5.43$, $df = 9,288$, $p < .01$). Post hoc tests showed a significant increase in noise from weeks 1 through 4 as compared to weeks 5 and 8 (see Table 2). There was no interaction effect ($F = .92$, $df = 27,288$).

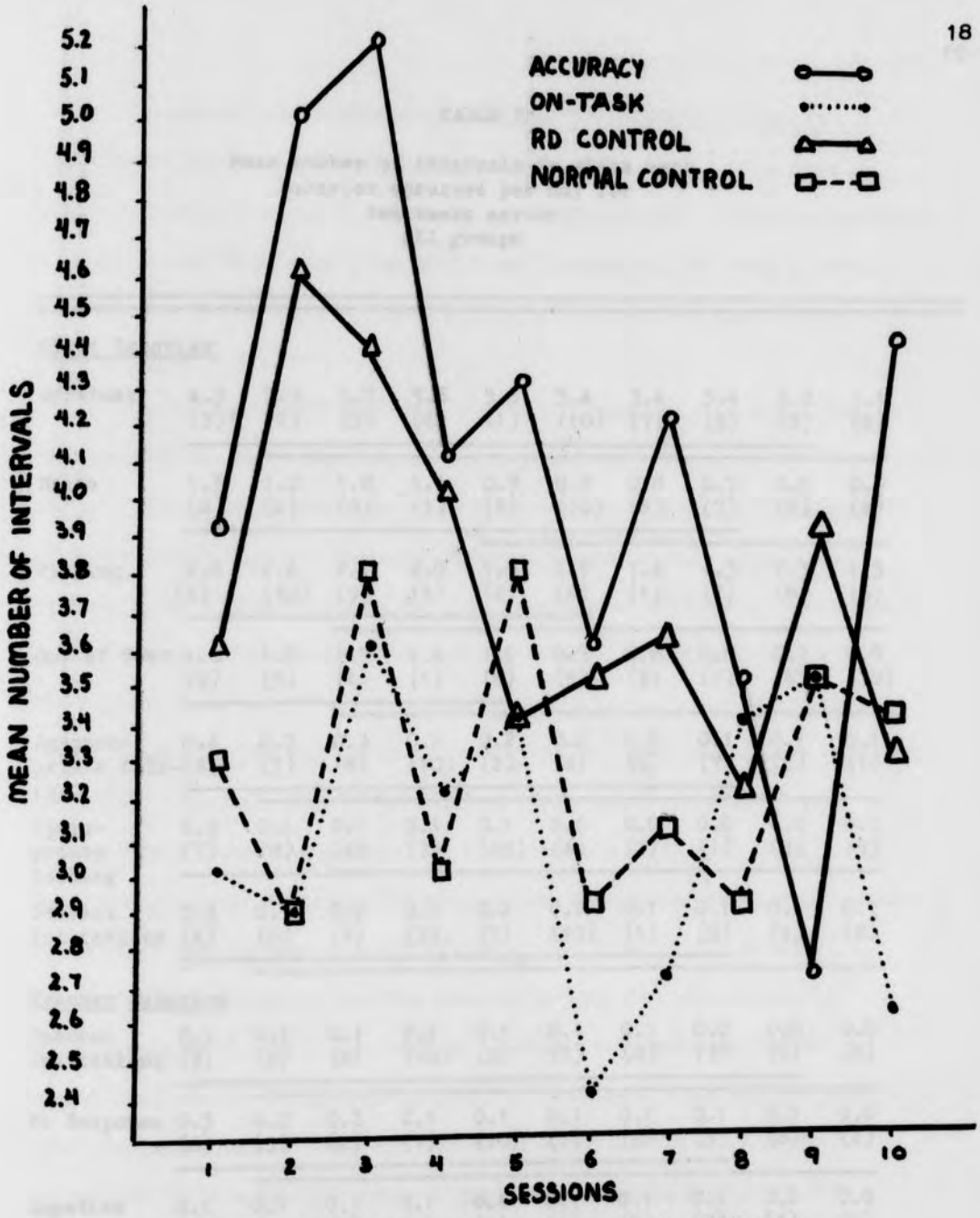

Figure 1. The mean number of intervals for Off-task per session for Accuracy, On-task, RD control and Normal control groups

TABLE 2

Mean number of intervals in which each behavior occurred per day for ten weeks across all groups

Child Behavior										
Off-task	4.3 (3)*	3.9 (2)	3.7 (5)	3.6 (4)	3.5 (1)	3.4 (10)	3.4 (7)	3.4 (9)	3.2 (8)	3.1 (6)
Noise	1.3 (2)	1.2 (4)	1.2 (3)	1.1 (1)	0.9 (9)	0.9 (10)	0.8 (6)	0.7 (7)	0.5 (5)	0.5 (8)
Playing	2.6 (3)	2.4 (10)	2.1 (9)	2.0 (2)	1.9 (4)	1.5 (6)	1.4 (1)	1.3 (7)	1.3 (8)	1.3 (5)
Out of Seat	1.8 (2)	1.8 (3)	1.5 (4)	1.4 (1)	1.0 (6)	0.8 (8)	0.8 (9)	0.8 (7)	0.7 (5)	0.7 (10)
Inappropriate talking	0.4 (6)	0.3 (3)	0.3 (8)	0.2 (10)	0.2 (2)	0.2 (4)	0.2 (9)	0.1 (7)	0.1 (5)	0.1 (1)
Appropriate talking	0.2 (7)	0.1 (8)	0.1 (4)	0.1 (3)	0.1 (10)	0.0 (6)	0.0 (2)	0.0 (1)	0.0 (5)	0.0 (9)
Student Initiations	0.4 (6)	0.3 (5)	0.2 (2)	0.2 (3)	0.2 (7)	0.2 (10)	0.1 (1)	0.1 (9)	0.1 (4)	0.1 (8)
Teacher Behavior										
Teacher Initiations	0.1 (3)	0.1 (6)	0.1 (4)	0.1 (10)	0.1 (9)	0.1 (2)	0.1 (8)	0.0 (7)	0.0 (1)	0.0 (5)
No Response	0.3 (6)	0.2 (5)	0.2 (2)	0.1 (7)	0.1 (10)	0.1 (1)	0.1 (9)	0.1 (3)	0.1 (8)	0.0 (4)
Negative Feedback	0.1 (10)	0.1 (2)	0.1 (3)	0.1 (4)	0.1 (6)	0.1 (4)	0.1 (7)	0.1 (8)	0.0 (1)	0.0 (5)
Positive Feedback	0.2 (6)	0.1 (10)	0.1 (3)	0.1 (4)	0.1 (8)	0.1 (1)	0.1 (7)	0.1 (9)	0.1 (2)	0.0 (5)

* number in parentheses refers to the week in which data were collected.

The univariate analysis of variance for Playing showed no differences for Type of Treatment ($F = .89$, $df = 3,32$). The Sessions effect was significant ($F = 6.53$, $df = 9,288$, $p < .01$). Playing increased for all groups from week 3 to week 5 and increased from week 5 through week 10 (see Table 2). The interaction effect was not significant ($F = 1.19$, $df = 27,288$).

Figure 2 presents the mean number of intervals for Out of Seat per session for the treatment and control groups. The analysis for Out of Seat behavior revealed no differences as to Type of Treatment ($F = 1.55$, $df = 3,32$). The main effect of Sessions was significant ($F = 6.11$, $df = 9,288$, $p < .01$). The interaction of Type of Treatment X Sessions was significant ($F = 1.61$, $df = 27,288$, $p < .05$). Newman-Keuls tests indicated that during Week 1, the On-task and RD control groups scored higher on Out of Seat than the Accuracy and Normal groups ($p < .05$). For Week 2, the Accuracy groups engaged in Out of Seat behavior at a higher rate than the other three groups ($p < .05$). For Weeks 3 and 4, the Accuracy, RD control and Normal control groups scored higher than the On-task group ($p < .05$). For Week 5, Out of Seat occurred more frequently for the Accuracy group than the remaining three groups ($p < .05$). For Week 6, the Accuracy group was rated higher than the On-task group ($p < .05$). For Weeks 7 and 8, the Accuracy group was rated higher than the remaining three groups ($p < .05$). During Week 9, the On-task group scored significantly higher on Out of Seat than Accuracy and both control groups ($p < .05$). There were no differences for Week 10. In summary, the Accuracy group tended to maintain a high rate of Out of Seat across Sessions, while the remaining three groups showed reductions in rate following an initial high rate.

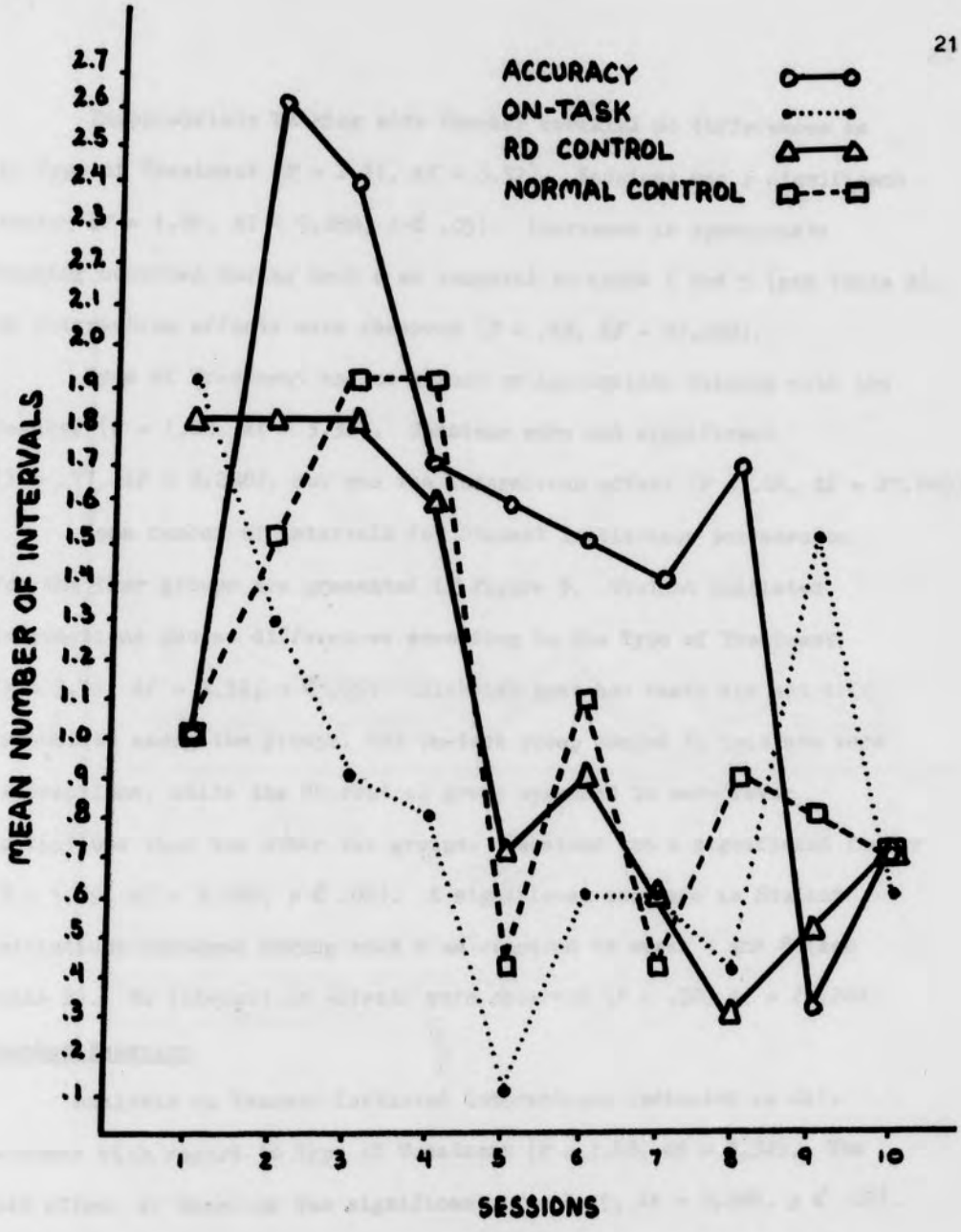

Figure 2. The mean number of intervals for Out of Seat per session for the Accuracy, On-task, RD control and Normal control groups.

Inappropriate Talking with Teacher revealed no differences as to Type of Treatment ($F = 2.21$, $df = 3,32$). Sessions was a significant factor ($F = 1.95$, $df = 9,288$, $p < .05$). Increases in Appropriate Talking occurred during week 6 as compared to weeks 1 and 5 (see Table 2). No interaction effects were observed ($F = .68$, $df = 27,288$).

Type of Treatment had no effect on Appropriate Talking with the Teacher ($F = 1.88$, $df = 3,32$). Sessions were not significant ($F = .77$, $df = 9,288$), nor was the interaction effect ($F = .88$, $df = 27,288$).

Mean number of intervals for Student Initiations per session for the four groups are presented in Figure 3. Student Initiated Interactions showed differences according to the Type of Treatment ($F = 3.31$, $df = 3,32$, $p < .05$). Although post hoc tests did not differentiate among the groups, the On-task group tended to initiate more interactions, while the RD control group appeared to make fewer initiations than the other two groups. Sessions was a significant factor ($F = 1.99$, $df = 9,288$, $p < .05$). A significant increase in Student Initiations occurred during week 6 as compared to weeks 4 and 8 (see Table 2). No interaction effects were observed ($F = .90$, $df = 27,288$).

Teacher Behavior

Analysis on Teacher Initiated Interactions indicated no differences with regard to Type of Treatment ($F = 1.08$, $df = 3,32$). The main effect of Sessions was significant ($F = 2.45$, $df = 9,288$, $p < .05$). Teacher Initiations increased during week 3 as compared to week 5 (see Table 2). No interaction effects were observed ($F = .03$, $df = 27,288$).

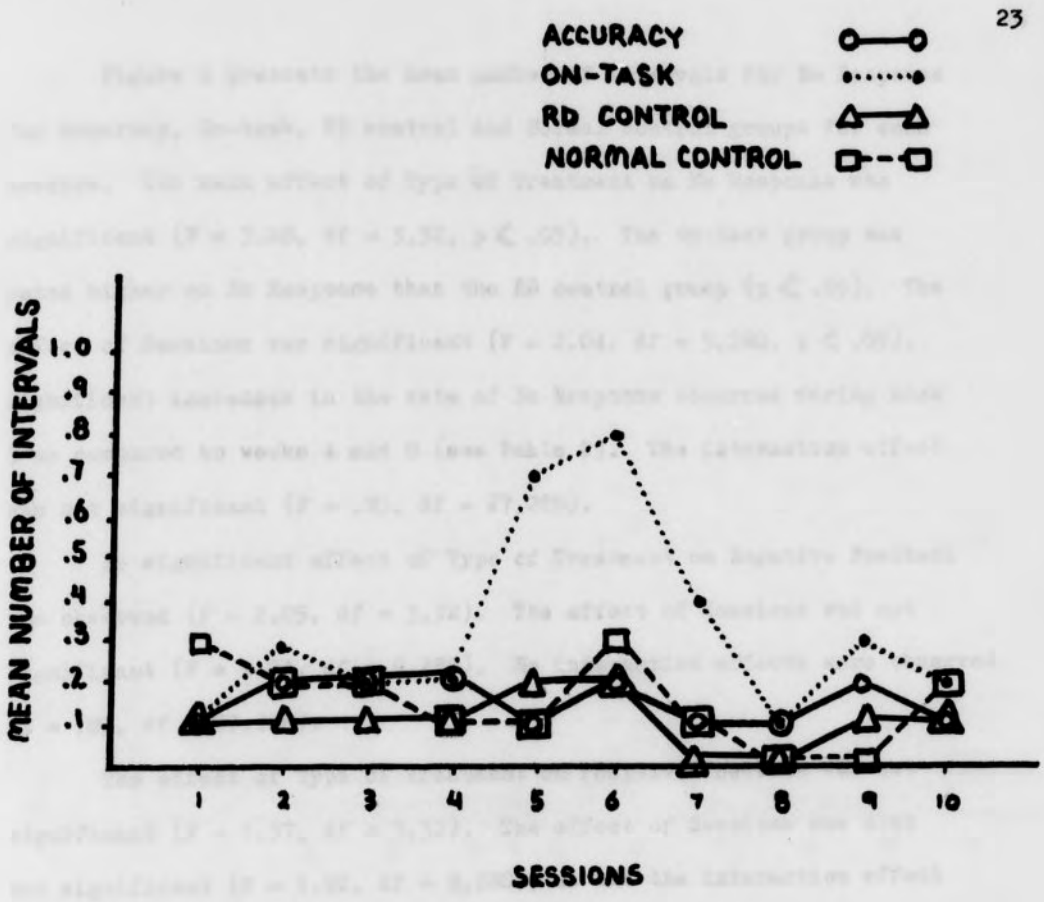

Figure 3. The mean number of intervals for Student Initiations for the Accuracy, On-task, RD control and Normal control groups.

Figure 4 presents the mean number of intervals for No Response for Accuracy, On-task, RD control and Normal control groups for each session. The main effect of Type of Treatment on No Response was significant ($F = 3.28$, $df = 3,32$, $p < .05$). The On-task group was rated higher on No Response than the RD control group ($p < .05$). The effect of Sessions was significant ($F = 2.04$, $df = 9,288$, $p < .05$). Significant increases in the rate of No Response occurred during week 6 as compared to weeks 4 and 8 (see Table 2). The interaction effect was not significant ($F = .85$, $df = 27,288$).

No significant effect of Type of Treatment on Negative Feedback was observed ($F = 2.05$, $df = 3,32$). The effect of Sessions was not significant ($F = 1.24$, $df = 9,288$). No interaction effects were observed ($F = .86$, $df = 27,288$).

The effect of Type of Treatment on Positive Feedback was not significant ($F = 1.37$, $df = 3,32$). The effect of Sessions was also not significant ($F = 1.92$, $df = 9,288$), as was the interaction effect ($F = .73$, $df = 27,288$).

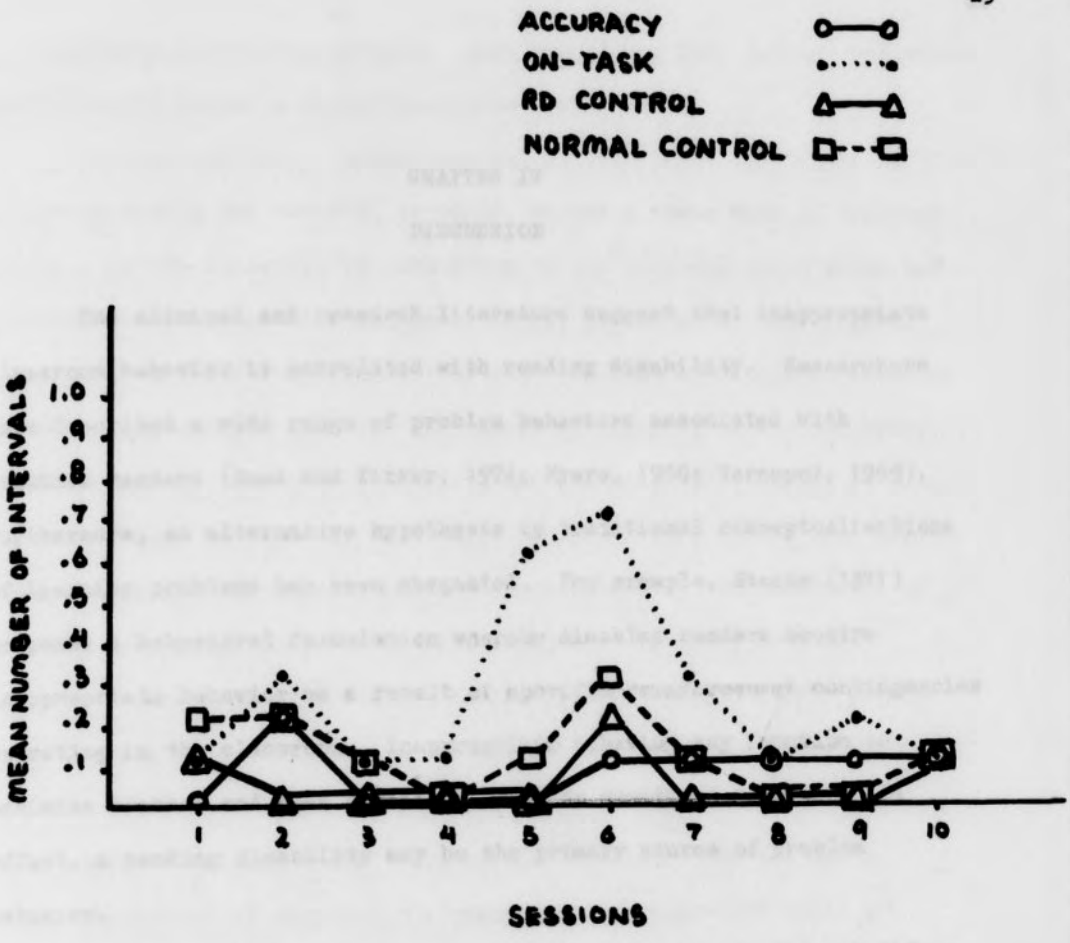

Figure 4. The mean number of intervals for No Response for the Accuracy, On-task, RD control and Normal control groups.

CHAPTER IV

DISCUSSION

The clinical and research literature suggest that inappropriate classroom behavior is correlated with reading disability. Researchers have described a wide range of problem behaviors associated with disabled readers (Bond and Tinker, 1974; Myers, 1969; Tarnopol, 1969). Furthermore, an alternative hypothesis to traditional conceptualizations of learning problems has been suggested. For example, Staats (1971) proposed a behavioral formulation whereby disabled readers acquire inappropriate behavior as a result of specific reinforcement contingencies operating in the classroom. Inappropriate behavior may function to maximize teacher and peer attention or as an avoidance response. In effect, a reading disability may be the primary source of problem behavior.

In the present study, however, RD control subjects did not differ significantly from the Normal group on measures of teacher and child behavior. The results provide little support for the hypothesis that disabled readers exhibit a significantly higher frequency of inappropriate behavior than their normal classmates.

The present study did provide some suggestion that remedial programs outside of the classroom may affect classroom behavior. Two of the seven child behaviors (Off-task, Student Initiations) showed a significant treatment effect. One child behavior (Out of Seat) showed

a significant interaction effect. Only one of the four teacher behaviors (No Response) showed a significant treatment effect.

The On-task group, which received reinforcement contingent on attending during the remedial sessions, showed a lower rate of Off-task behavior in the classroom in comparison to the Accuracy group which had received reinforcement for correct academic performance. One logical expectation in improving accuracy is that parallel increases in rates of attending may occur. A series of studies by (Allyon, Layman and Burke, 1972; Allyon and Roberts, 1974; Kirby and Shields, 1972; Sulzer et al., 1971; Hay, Hay, and Nelson, 1974) have demonstrated a direct relationship between academic performance and classroom behavior. Reinforcement of accurate responding produces an acceleration of accuracy rate and collateral increases in attending behavior. The results of the present study suggest that increases in On-task behavior obtained by reinforcing On-task outside the classroom may generalize to the classroom setting. Since there was no measure of accuracy in the classroom, the extent of generalization of accurate performance to the classroom could not be examined in this study.

Evidence for generalization of behavior from one classroom setting to another is sparse. Programs designed to maintain effectiveness or demonstrate generalization from one setting to another are rare (O'Leary, Becker, Evans and Saudargas, 1969; Santogrossi, O'Leary, Romanozyk and Kaufman, 1973). Generalization of behavior across settings may not be expected unless it is specifically programmed in remedial efforts.

It was hypothesized that inappropriate behavior of RD treatment groups would decrease as remediation progressed. However, only one inappropriate behavior: Out of Seat, showed differential changes over

time as a function of remediation group. The Accuracy group tended to spend more time out of their seats than other groups. In comparison to the On-task group, the Accuracy groups spent considerably more time out of their seats in the classroom for seven out of ten weeks. It appeared that reinforcing on-task behavior produced more desirable results in the classroom, in that lowered rates of Out of Seat occurred for the On-task group in comparison to Accuracy subjects. Since Out of Seat behavior is largely incompatible with on-task behavior, decreased rates of Off-task may predict lower rates of Out of Seat behavior.

All four groups appeared to show improved behavior over time with only minimal differentiation according to the type of treatment received. The general decreases in inappropriate behavior across groups may have been the result of improved teacher control over classroom behavior. As the academic year progressed, teachers may have acquired more effective management strategies with the class as a whole. In addition, the experimental children who made gains in appropriate behavior may have served as models for those not included in treatment.

The improvements observed in the RD control group may have also resulted from a number of subjects being included in a special reading program without the knowledge of the experimenter. Eight out of nine of the RD control subjects received extra tutoring in addition to regular classroom instruction.

The results could also have been related to the selection criteria utilized to identify RD children in the present study. The selection procedure did identify many children who are more appropriately described

as slow learners. The slow learner may present a constellation of problems that is qualitatively different from those presented by RD children identified by other procedures. Future research might use one of the other RD selection methods which identify children with higher IQ's.

In summary, the findings of the present study suggest that remediation of specific reading skills may not be sufficient to reduce the disruptive classroom behaviors of RD children. Future research should evaluate the effect of longer term remediation programs. Should remediation programs fail to improve classroom behavior, then some consideration should be given to the child's social agents. Hops and Cobb (1972) proposed a classification system of survival skills and academic responses necessary for successful academic performance. As well as exerting an influence of their own, these behaviors are influenced by the teacher. Consistent with a behavioral formulation, the teacher might be considered a basic element in successful remedial programs. The present study suggests that educational skills may be more effectively acquired when a program of generalization is built into remediation. The acquisition of skilled reading responses in itself may not guarantee improvement in classroom behavior. Teachers may need to be trained in effective teaching strategies in order to observe improvement in the classroom. Although the lack of successful academic performance may inhibit the development of appropriate classroom behavior, the latter does not occur as a direct result of remediation of academic difficulties.

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