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Ninety Day Follow-up of a Boy to Determine the Effects of the Use of Operant Techniques in the Classroom

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NINETY DAY FOLLOW-UP OF A BOY TO DETERMINE THE EFFECTS OF THE USE OF OPERANT TECHNIQUES IN THE CLASSROOM

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CHAPTER I

INTRODUCTION

In considering the application of operant conditioning techniques within the classroom one observes that these principles are already in operation. There are numerous and varied consequences that are applied to deviant behavior such as staying in during recess, removal from class, additional classwork, exclusion from class activities and other techniques. Positive reinforcements are also present for complying behavior in the form of smiles, praise, gold stars, class barometers and numerous other devices. How then does operant conditioning differ from existing classroom management techniques? Operant conditioning appears to be simply "refined common sense". Classroom techniques are primarily group oriented, long term in consequence and rather random in presentation. On the other hand, operant conditioning can be idiographic, immediate to the response and systematically presented.

With operant conditioning, the focus is upon the child's response to his environment. Responses are viewed as operating on the environment because they are followed by environmental events or consequences. The consequences of a particular response determines the probability of

its future occurrence. For example, a child's crying (response) may bring about parent attention (consequence). If crying, which is followed by parental recognition, continues with increasing frequency we can presume that the parental reactions are reinforcing. Or when a child picks up his toys and later is rewarded with milk and cookies, the likelihood is increased he will "pick up" again. His response was followed by food (reinforcement) which as a consequence should increase that response rate.

Reinforcement is usually observed under two conditions. Positive reinforcement refers to the arrangement of stimuli (contingencies) that increase the probability of a response by their presentation. Negative reinforcers refer to contingencies which increase the response rate only by their removal. In the latter for example, the child participates cooperatively with peers and thus removes (avoids) the consequence of social disapproval.

At the University of Washington Preschool Clinic, Harris, Johnston, Kelly and Wolf (1964) significantly reduced the amount of crawling behavior of a three year old girl by making social attention such as smiling and physical proximities contingent upon walking and running. Social consequences were withdrawn (negative reinforcers) when the girl would crawl. After one week normal walking was reportedly established.

In another study, Hart, Allen, Buell, Harris and Wolf (1964) focused on a child's crying behavior which was found related to teacher attention. During the modification phase attention was presented (positive reinforcement) only when the child initiated self-help responses or maintained composure. Crying responses were entirely ignored. Within a two week period crying was eliminated.

Allen, Hart, Buell, Harris and Wolf (1964) reported the increased socialization of an isolated child resulted when his involvement and interaction in peer activities were followed by teacher attention. The operant period noted a 60 per cent ratio of time interacting with peers as compared to a baseline of 10 per cent involvement. Reversing the procedures supported the contention that teacher attendance to this child's social participation was an effective positive reinforcer. Reconditioning re-established a normal percentage of social interaction.

Zimmerman and Zimmerman (1962) found when they ignored the temper tantrums of an 11 year old boy, the child became more adaptive to his environment. At the termination of outbursts the investigator placed the youngster in activities he enjoyed. Engaging in meaningful activities and interacting with the teacher became contingent upon "non-tantrum" behavior. Several weeks later the temper tantrums decreased markedly along with noted improvement

in verbal expression. The researchers were later able to incorporate the child into a classroom utilizing intermittent reinforcement.

Two recent studies by McIver (1967) and Paulson (1967) employing behavior modification with two youngsters, effectively increased desirable behavior by utilizing teacher attention as the reinforcer. Conversely, a time-out procedure used by McIver and the withholding of attention by Paulson, both effectively reduced the amount of undesirable behavior. Both studies support the efficacy and adaptability of operant techniques for behavioral management within a classroom.

To effectively modify a child's behavior, the nature of the classroom and systematic analysis of the response-consequences is essential. According to Haring and Lovitt (1967) the "Exact knowledge of environmental events that increase or decrease responses, together with their arrangements may prove to be the critical factors for the modification of children's response rates."

The present study was undertaken in part to determine the effectiveness of operant conditioning techniques when applied to a virtually ignored child in a regular classroom. However, the main emphasis of the study was on the maintenance of the modified (desirable) behavior in the classroom after the period of summer vacation.

The subject was a white male, aged ten, fourth grader. Eddie was blonde, average in physical size, freckle-faced, with blue eyes and protruding ears. He had one sibling, a brother, who attended the same school as a second grader. Eddie was referred for psychological services due to disruptive classroom behavior and failure to complete assignments.

> "Eddie is making no progress; emotional instability may be the cause. As a teacher, I try to help and understand Eddie, to give him as much individual attention as I can, to arrange his interest in learning, and to make him complete study assignments. I am not making progress with him. He disrupts the class, wanders about as his attention is taken by whatever at the moment may interest him in the classroom. Eddie's short attention span and distractability lessen his ability to achieve. My reaction is often impatience, to put it mildly."[1]

Examination of the teacher's comments revealed Eddie's behavior continued and was maintained despite teacher and peer disapproval. Eddie's random-like behavior appeared more persistent and sustaining than his attention to educational activities (which presumably would offer positive rewards for participation). Eddie's behavior seemed self-perpetuating, and therefore non-adaptive.

Eddie was observed in class and his behavior was operantly defined as either positive, negative or indeterminate. The antecedent and subsequent events to each of

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[1] Information secured by referral form section titled, "reason for referral" completed by teacher for the expressed purpose of enlisting psychological services.

these designations were also recorded. Observations revealed that virtually all of Eddie's behavior, negative and positive, was ignored by his teacher.

The teacher was informed regarding the nature of study and was requested to attend to Eddie's positive responses and ignore his negative behavior. It was hypothesized that: 1. positive responses followed by teacher attention would significantly increase positive behavior; 2. teacher inattention to negative responses would significantly decrease negative behavior; and 3. a follow-up study would reveal that the positive responses were maintained despite the withdrawal of operant procedures.

CHAPTER II

METHOD

Eddie (S) was observed by the experimenter (E) approximately four hours during a one week period, at which time his behavior was designated as either positive (+), negative (-) or indeterminate (i). Operational definitions such as raising hand, eye contact with the teacher (T), completion of assignments, were a few examples of + behavior. Hand play, leaving seat and hitting others were examples of - behavior. The i ratings were essentially responses that included both + and - designations concurrently. If, for example, the S left his desk, it would be rated as -, but if it was to secure materials to execute an assignment, it would qualify as +. Both responses, in effect cancelled each other out and were classified as indeterminate. An independent observer (O) using the operational definitions developed by the investigator, observed Eddie for a two hour period. The O and T then met with E to establish agreement regarding what constituted +, -, and i behavior. At this time, the behaviors were operationally refined to eliminate errors in recording and reporting (Appendix A).

Besides establishing agreement regarding specific responses, some behaviors were discarded as irrelevant or highly inferential to the total behavior pattern; e.g., posture and facial expressions. Classroom requirements during the study were explicitly outlined by T. If S was sitting at his desk working on his math assignment and not interrupting others, this was construed as + behavior. However, if the requirement was correction of spelling papers and S was studying math, his behavior was recorded as negative. The T continually informed the E and O regarding the objectives of the daily class activities and requirements for students. These objectives served as a frame of reference which increased the agreement between E and O of recorded behaviors.

A ten-second interval schedule for rating behavior was employed to establish the frequency of +, -, and i response. Two practice sessions for approximately one hour each, with simultaneous ratings by E and O, were performed. This essentially was a systematic sampling of behavior, Checking the recorded behavior of E and O resulted in correlations sufficiently high to conclude this schedule yielded reliable recordings when utilized by two observers. Reliability checks were determined by dividing each hour's observation period into ten six-minute intervals. This approach was used to check E and O's recordings

on a day-by-day basis.

Baseline

S was observed in the classroom for one week by E and O using the behavior rating schedule. This was done to establish a baseline, or consistent measure of +, -, and i responses. During the time that the baseline was established, T was instructed to respond to S in her usual manner.

After each session E and O met with T for approximately 15 minutes (during recess) to discuss results. This feedback with T was important for gathering additional information about S which could have influenced the observation and might help determine reinforcers. After each response, T and Peer (P) reactions were recorded if they occurred in close proximity. The frequencies of T and P interaction were tallied to determine if either operated to reinforce the S's + or - responses.

Conditioning

At the conclusion of the baseline phase, two sessions were scheduled with T to focus on T interaction with S. She was requested to attend and reinforce + responses immediately as they occurred and ignore - responses completely. The T initially attended to behaviors which appeared to be approximations to the desired (+) behaviors.

Reinforcement was immediate in the initial phase (one week) with an intermittent schedule utilized for the remainder of the conditioning period.

Requirements for + behavior became gradually more demanding, moving through successive approximations to the explicit task required in the classroom at the moment. S was initially reinforced for standing by his desk, then for sitting in his seat, then for performing school work at his desk, and finally, for completing the prescribed assignments in the required period of time.

T reinforcement included praise, smiles, touching of S approvingly, comments to peers regarding S's behavior, special privileges, and numerous others. Negative responses were ignored completely so T attention would become contingent upon + behavior.

After each session of behavior rating, a conference immediately followed with T discussing S's behavior for that day, and T's use of and the effect of reinforcements. This served to insure the consistent application of reinforcement.

Conditioning was continued for four weeks during which time E observed for 13 hours. Observation indicated substantial increase in + rates and consequent decreases in - rates. Conditioning was then discontinued and reversal procedure begun.

Reversal

Since this study was idiographic, i.e. not subject to comparison with other youngsters, the reversal of the operant procedures was necessary to serve as a control measure. If T attention to + responses was withdrawn, a substantial drop in + behavior and increase in - behavior should result.

During the reversal phase, T was instructed to ignore Eddie's - behavior and his + behavior (as she had done previous to the study).

Reconditioning

Intermittent reinforcers were used during the reconditioning phase, since the S responded sufficiently to this type of schedule during the latter stages of conditioning. The E and O rated the S responses one hour daily for one week. Inter-rater data was correlated to determine reliability. Sessions were conducted with the T after each behavior rating phase. The reconditioning phase was terminated after one week. Termination was two weeks prior to the end of the school year.

Follow-Up

Approximately 90 days after the completion of the reconditioning phase, final observations of the S were made. The observations followed the ten second interval

schedule one hour daily, for a period of a week. Observations began after school had been in session for two weeks. During the interim (summer vacation) no conditioning procedures known to the experimenter were operative. The S was promoted to fifth grade and placed with a teacher new to the district. The S's fourth grade teacher did not disclose the nature of the experiment or the follow-up study to the fifth grade teacher until the observations were completed. Follow-up was pursued to determine whether the S's modified behavior would be maintained without the application of operant techniques in the new classroom situation.

CHAPTER III

RESULTS

Table 1 summarizes agreement between E and O for the baseline phase and reconditioning observation schedules. Each observation phase had been divided into ten six-minute intervals. The data obtained was used to determine agreement between E and O. The correlations varied from .83 to .94 for 10 observations. The inter-rater agreement indicated that a consistently reliable sampling of Eddie's classroom behavior had been obtained using the ten-second observation schedule.

Table 2 summarizes the means and standard deviations derived from observational data collected by E. The means vary in the predicted direction for both positive and negative behavior, except for the follow-up phase.

Table 3 summarizes the t values obtained from comparisons among the means for each of the five phases of the study. The values are shown for both positive and negative behavior.

Figure 1 presents the behavioral response rates graphically for the five phases of the experiment. This represents 33 hours of observation data.

TABLE 1

Inter-Rater Comparison of Behavioral Data

Utilizing Interval Observation Schedule

Baseline*			Reconditioning*		
Date of Obs.	+ r	- r	Date of Obs.	+ r	- r
3-26	.89	.85	5-20	.88	.80
3-27	.90	.88	5-21	.93	.89
3-28	.94	.92	5-22	.85	.78
3-29	.90	.86	5-23	.89	.87
4-1	.93	.90	5-24	.91	.93

*Coefficients for each phase significant, $p < .005$

TABLE 2

Means and Standard Deviations for Each Observation Phase

	Positive Behavior		Negative Behavior	
Obs. Phase	Mean	SD	Mean	SD
Baseline	105.20	50.29	208.83	36.70
Conditioning	272.92	36.87	63.69	49.35
Reversal	94.80	106.47	246.00	196.63
Reconditioning	271.20	21.97	78.00	23.28
Follow-Up	149.41	68.41	200.61	66.37

TABLE 3

Summary of *t* Values Obtained from Five Observation Phases

Positive Responses

Obs. Phase	Baseline	Condit.	Reversal	Recondit.
Conditioning	6.22			
Reversal	.32	8.91		
Reconditioning	6.05	.09	8.69	
Follow-Up	1.20	1.04	1.47	3.29

Negative Responses

Obs. Phase	Baseline	Condit.	Reversal	Recondit.
Conditioning	6.27			
Reversal	.89	1.83		
Reconditioning	6.08	.80	1.72	
Follow-Up	.02	6.70	.42	3.43

Note.--Underlined *t* values indicate significant differential was observed, $p < .05$.

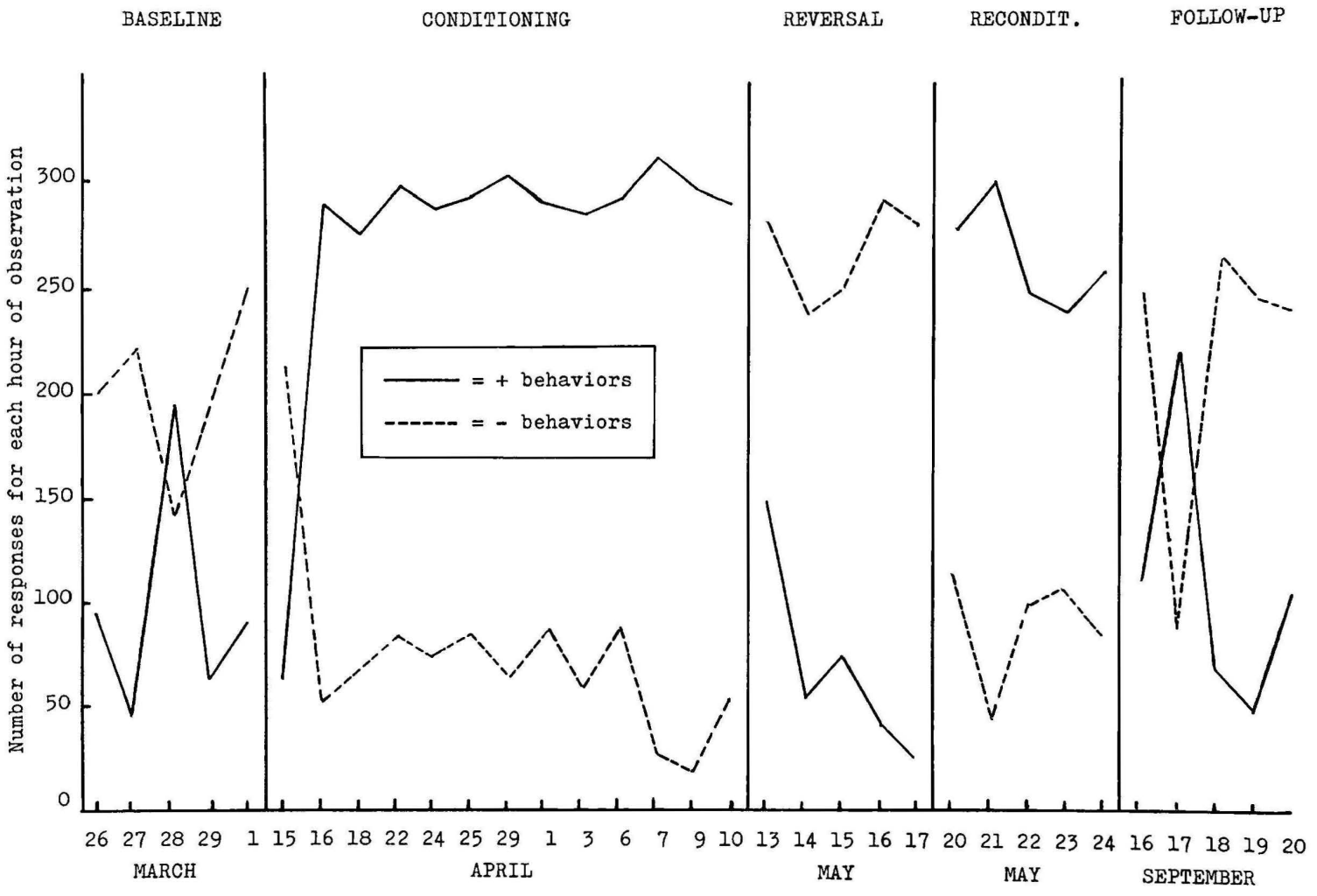

Fig. 1. Responses for each of the five phases.

Baseline

The inter-rater comparisons for + and - responses yield a correlation range between .85 to .94 ($p < .005$). The percentage of + behavior averaged about 29%, while- behavior represented 58% of the total response pattern (Appendix B).

Conditioning

There was a significant gain in + behavior and a significant loss in - behavior over the conditioning phase. Both were in the predicted direction. Positive responses increased significantly, ($t = 6.22$, $df = 17$, $p < .001$), while - responses decreased significantly, ($t = 6.27$, $df = 17$, $p < .001$). This represented an increase from 29% to 75% for + responses and a decrease from 58% to 18% for - responses.

Reversal

The reversal phase showed a significant loss in + behavior in comparison with the conditioning phase, ($t = 8.91$, $df = 17$, $p < .001$). It also showed a significant gain in - behavior in comparison with the conditioning phase, ($t = 1.83$, $df = 17$, $p < .05$). These results were in the predicted direction. Non-significance was noted for +, ($t = .32$, $df = 9$, $p > .05$) and -, ($t = .89$, $df = 9$, $p > .05$) rates in contrast to baseline responses.

This suggested that the reversal procedures effectively recreated, or at least simulated, the classroom conditions of the baseline phase. The average percentage for + responses was 25% and - responses 68% during this phase.

Reconditioning

The resumption of positive intermittent reinforcement by T resulted in a significant gain in + behavior, (t = 8.69, df = 9, $p < .001$) and a significant loss in - behavior (t = 1.72, df = 9, $p < .05$)--again in the predicted direction.

Comparison of baseline data to reconditioning demonstrated a significant increase for positive responses, (t = 6.05, df = 9, $p < .001$) and significant decrease for - responses, (t = 6.08, df = 9, $p < .001$). Equivocal findings were noted between the reconditioning and conditioning phases for both response rates. Positive responses represented 75% and - 21% during this phase. Inter-rater correlations for the five observation phases ranged from .78 to .93 ($p < .005$).

Follow-Up

Two weeks after the beginning of the fall term (approximately 90 days after the completion of the reconditioning phase of the study) the same criteria for positive and negative behavior were used. S was in the fifth

grade in a new classroom and with a new female teacher. There was a significant drop in + behavior, (t = 3.29, df = 9, $p < .05$) in comparison with the reconditioning phase and a significant gain in - behavior, (t = 3.48, df = 17, $p < .001$) in comparison with the reconditioning phase. Increase in - responses was also found significant in contrast to the conditioning phase, (t = 6.70, df = 17, $p < .001$). These findings were not in the predicted direction. The gains in + behavior shown at the end of the reconditioning phase were not reflected in the new classroom.

CHAPTER IV

DISCUSSION

This study investigated two questions: 1.) Will the application of operant techniques within the classroom effectively modify the behavior of a single child; and 2.) If effective modification is achieved, will it be maintained over a three month interval when the child is observed in a different classroom environment.

In response to the first question, the results indicated significant modification in Eddie's behavior was accomplished. The presentation of positive teacher attentions to positive behavior were effective reinforcers. The first hypothesis, that positive responses followed by teacher attention would significantly increase the positive response rate, was confirmed by the completion of the reconditioning phase. Similarly, significant support was obtained for the second hypothesis, which postulated that negative behavior would decrease in rate as a function of teacher inattention. Reinforcements of Eddie's behavior operated to effectively modify and improve his adaptation to the classroom. Operant conditioning offered a consistent and precise approach for the teacher to follow. In-

formal data (teacher reports) suggested that the number of class disruptions, incomplete assignments, fights with peers, tardinesses and episodes of hooky were ostensibly reduced. Cues for appropriate behavior became explicit and pervasive for the subject. Negative acts ceased to operate on the environment.

A noteworthy observation was a reported improvement in the teacher-child relationship. The teacher related that her ineffectiveness in modifying Eddie's deviant behavior resulted from her tentative conclusion that he was either neurologically impaired or emotionally disturbed, and in either case, required professional help beyond her capabilities. Failure to deal with Eddie's behavior, she felt, contributed immeasurably to her decision to retire.

Baseline data revealed that Eddie's positive responses had gone unobserved, or at least were not reinforced by teacher recognition. Contrastingly, the same was noted for negative reactions, with the exception of infrequent admonitions. In other words, the use of negative reinforcement was intermittently, or rather variably, presented, which acted to maintain his negative responses.

During the baseline, the teacher modified her behavior and the classroom arrangement, contrary to instructions. Restatements regarding the need to focus on Eddie's behavior noticeably reduced the amount of teacher variance.

At the conclusion of the reconditioning phase, the teacher reported a favorable relationship had developed with Eddie. Her attitudinal change was further supported by her statement that she was not retiring. Teacher improvement was observed, not only in reported attitudes towards Eddie, but in an apparent increased effectiveness with other students.

Each subsequent feedback session offered the teacher a microscopic view of Eddie's responses for that day. Instead of expecting and demanding marked changes in behavior, she learned to observe, modify, and measure her responses in relation to what was appropriate for Eddie.

The data for the 90 day follow-up phase indicated that neither positive nor negative rates were maintained. In fact, a significant reversal was recorded for negative responses, which increased in comparison to conditioning and reconditioning levels. A significant drop in positive behavior was also found in comparison to reconditioning records. The third hypothesis, that the positive behavior would be maintained, was refuted.

One test of this kind of scientific study is to demonstrate long-term effects. Unexpected reversals in the data suggest Eddie was not sufficiently prepared for the transition into another classroom without the formal application of operant techniques. If the conditioning pro-

cedures had been initiated in January, allowing for the gradual reintroduction of reinforcements usually found in a regular classroom, the results of the follow-up may have reversed. Eddie, by the completion of the reconditioning period, demonstrated significant modification had taken place, but he was essentially still responding to a rather elementary or simple intermittent schedule. If Eddie had been presented with a fixed-ratio schedule, i.e. one that consistently required the same total number of responses for every reinforced response, and then later moved to a variable-ratio schedule, i.e. one that is irregular but where reinforcements are given in a repeated fashion, the extension of his modified behavior may have been maintained (Reynolds, 1968).

Eddie's placement in fifth grade found him in a dramatically different educational setting. His teacher attended to negative behavior, which acted to increase its rate over the five-day observation period. The frequency of disruptive behavior, incomplete assignments, time spent in principal's office or in hall, and tardinesses, as reported by his teacher, seemingly increased. The consequences for Eddie's behavior were clearly incompatible with the conditioning procedures used in this study. It appeared that negative responses responded to by his new teacher increased their occurrence, while positive reac-

tions went unobserved, or were so infrequently reinforced that Eddie was perhaps unable to make the connection between his actions and their consequences.

Eddie was later transferred to another school district where an informal follow-up interview was conducted with his teacher. When questioned about Eddie's classroom adjustment, he indicated that Eddie was not a disruptive child, but was rather conscientious about his school work, which was regarded below grade level. Later in the school year, the teacher referred another child for psychological services. A sociometric device was utilized to study this child. The device provided information regarding Eddie's social adjustment. Eddie's adjustment appeared reasonably good, as noted by his classmate's selections and perceptions of him. Generally, he attracted an equal number of positive and negative responses, which, in comparison to the class data, suggested he was not viewed as evidencing pronounced behavioral problems when evaluated by peers. The teacher comments and peer evaluations can not serve as testimonial to Eddie's improvement in managing his classroom behavior, but they strongly suggest that the follow-up observations may have been unduly influenced by the nature of the classroom environment.

The contrasting descriptions of Eddie, though obtained by different methods, seem worthy of note. Eddie

was described statistically as manifesting significantly higher rates of deviant behavior during the follow-up, yet when he was placed with a different teacher, empirically, his behavior indicated improvement. Conceivably, teacher personalities and management techniques may have influenced Eddie's adjustment. Studies which have compared the effects of different teacher control methods upon their students have consistently shown higher rates of non-conformity for children of dominating teachers (Anderson and Brewer, 1946). Eddie's teacher, during the follow-up, was dominating in her approach to other children. She frequently used force, commands, threats, shame and blame as classroom motivaters. This seems rather significant, since a recent study by O'Leary and Becker (1968) suggested that certain types of admonitions for deviant behavior (negative reinforcement) can be as equally effective as praise (positive reinforcement) in a classroom. They found that when a child was reprimanded in a way which would only be audible to him, his percentage of deviant behavior (39%) was not significantly different from a praise condition (deviant response --32%). Furthermore, when the admonitions reached a level audible to the whole classroom, "a significant increase in deviant behavior (53%) resulted." This cited study, may partly explain why Eddie responded differently to the two classrooms. One teacher may have surpassed the intimate

level of admonishments, while the other was perhaps more discreet in his control of Eddie.

Behavioral information during and after the follow-up period seemed, at best, shrouded by a number of influences which did not lend themselves to direct study. Placements in two different classroom settings, contrasting teacher styles, different methods of assessing Eddie's behavior, peer readjustment demands and the alleged declining health of Eddie's grandmother (she was responsible for his care) were presumably influencing factors. Evaluation of Eddie's adaptation to a number of situations and events would be a necessary consideration for future studies assessing the long-term effects of operant conditioning. Haring and Lovitt's (1967) contention that the knowledge of the environmental events which act to increase or decrease a child's responses, seems applicable. The attempt to modify Eddie's behavior only within the school environment may point out the myopic nature of this study. In other words, operant procedures should have been applied to other areas of Eddie's behavior. If the application is pervasive the extraneous variables are more readily controlled. Eddie's grandmother reported she found it difficult to be consistent and confident in her management decisions. She felt her physical condition, which she described as restricting, seriously altered her ability to

follow through with her demands. The experimenter submits that if the grandparents had been provided with the rationale and principles of operant conditioning, Eddie's behavior may have been more easily controlled at home and additionally would have supported the operant conditioning at school. The confinement of behavior modification to Eddie's school behavior, in light of the reported faulty management techniques at home, seems short-sighted. If operant techniques are to be systematic, they must be totally inclusive if behavioral goals are to be realized. If a child exhibits deviant responses to a number of situations, can we limit our interest to the classroom?

In many respects this study may have been too peripheral in design. Reinforcement of Eddie's positive responses, without question, enabled him to become more responsive to classroom activities, but was this accomplishment a central and meaningful consequence for him? Reinforcement by teacher attention was effective in the operant period, but the latter stages suggest that the reinforcers "may have run out." (Breland and Breland, 1961.) Reinforcers are relative to a subject's response and therefore can become less potent if the subject does not maintain the same value towards it. However, operant conditioning studies have demonstrated that their approach works. The desired behavior can be increased, while non-adaptive re-

sponses are reduced or eliminated. This study accomplished this to a point.

Can we assume that the behavior modified by the reinforcers will enhance and sustain a child's self-worth? Our study has focused on the establishment of high rates of attending behavior. When Eddie did respond appropriately to teacher demands and decreased the amount of disruptive behavior, could we then assume that this was sufficient, that the reinforcements were appropriate? Eddie developed a conforming response to the classroom as a result of the study, but was still underachieving in his school work. Paulson (1967) in her study of operant conditioning, noted that her subject seemed ready to learn and demonstrated average tested intelligence, but after six years of failing, was incapable of learning in his teacher's classroom. She concluded, "He needed to be in a special education class geared to his present academic abilities, in addition to arriving at learning readiness." Focus could, in addition, have been on Eddie's specific areas of academic underachievement. If his responses could have been broken down into small steps utilizing programmed instructions, Premack's (1965) principle of high probability behavior or other operant techniques, the pay-off for "attending" would have taken on considerably more value than the peripheral reinforcers. A systematic strategy which minimized

Eddie's academic deficiencies would have more likely produced intrinsic motivation rather than the structuring of his responses by external stimulation (e.g., teacher praise). It would seem that if Eddie's scholastic work had improved, its effect would have far outweighed other forms of reinforcement. One might conclude that the reinforcement of Eddie's responses became peripheral as he demanded more of a consequence for his "attending".

In conclusion, this study has demonstrated the short term effects of operant conditioning, but failed to demonstrate the long term effects of behavioral results. Researchers should be cautious in interpreting short term results of operant procedures as automatically indicative of a long term forecast. The experimenter feels that operant techniques can be applied to the classroom, but suggests the following steps: 1) Extension of the operant conditioning periods; 2) Inclusion of intermittent, fixed-ratio variable reinforcement schedules which simulate normal environmental conditions; 3) Use of reinforcers which provide subject with meaningful consequence and the flexibility to recalibrate reinforcers as demanded; 4) Extension of operant procedures to other areas of subject's life space where desired; and 5) Follow-up assessment of subject's behavior in pertinent life space areas.

CHAPTER V

SUMMARY

Operant conditioning techniques were applied to an acting out and disruptive ten year old boy within a classroom setting. He was observed during a one-week period during which time his responses were operationally defined as positive, negative, or indeterminate by the teacher, an observer, and the experimenter. The frequency of the behavioral rate was recorded by utilizing a ten-second interval observation schedule. Data showed that the child was virtually ignored by his teacher, no matter what behavior was displayed. The use of teacher attention to the child's positive responses was applied, while negative responses were ignored by the teacher. Conditioning procedures effectively modified the child's behavior, demonstrating that a significant increase in positive behavior had occurred.

A 90-day follow-up observation of the child in a different classroom indicated that the rate of positive behavior was not maintained. In fact, a significant reversal was noted. This study raised questions about abbreviated experimental designs frequently used for behav-

ior modification pruposes. Suggestions were provided for future studies concerned with the long term effect of operant conditioning techniques.

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APPENDIX A

APPENDIX A

NEGATIVE BEHAVIORS

Plays with hands and face

Hand play with objects

Touching, grabbing or hitting other children

Works on assignment not requested

Sharpens pencil during spelling

Makes clicking noise with mouth

Makes distracting gestures to neighbors

Rests his knees on the floor

Verbally responds for another child

Gets out of seat during teacher direction

Moves seat back and forth

Pounds hands on desk

Bounces head on hands

Slides down in chair and lays head on neighbors desk

Makes critical remarks of another student's performance

Claps hands

Remains standing by his desk while others are seated

Places fingers in his mouth

Shakes head back and forth

Asks peers to find his page

Plays with classroom materials

Looks out windown

APPENDIX A

NEGATIVE BEHAVIORS

Hand play with another boy

Spontaneous verbal outbursts

Walks around room interrupting others while working

Relates irrelevant stories during reading group

Interrupts teacher when she directs another group

APPENDIX A

POSITIVE BEHAVIORS

Follow teacher direction

Raises hand

Responds to spelling assignment

Recites in accordance with demands

Listens to teacher discussion

Recites appropriately

Attentive to others who are reciting

Works on materials

Sits in seat

Has material available for work

Reads in group

Comes to group willingly

Volunteers to bring material from home

Maintains eye contact with teacher

Sustains work in workbook

Completes assignments

Volunteers his help

Requests help from teacher appropriately

APPENDIX B

APPENDIX B

PERCENTAGE OF RESPONSE RATES FOR EACH PHASE

Phase	Positive		Negative		Indeterminate	
Baseline	526	29%	1044	58%	230	13%
Conditioning	3548	75%	828	18%	304	7%
Reversal	474	26%	1230	68%	96	5%
Reconditioning	1356	75%	390	21%	54	4%
Follow-Up	747	42%	1003	55%	50	3%