EFFECTS OF A BEHAVIORAL MANAGEMENT PROGRAM USING RECREATIONAL ACTIVITIES AS REWARDS ON BEHAVIORAL PROBLEM STUDENTS

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CHAPTER I

INTRODUCTION

> For most people, behavior management means "discipline." Kids who are defiant, aggressive, tardy, messy, disruptive, hostile, annoying, unreliable and irresponsible are problems not only to themselves and to school personnel, but they also frequently inhibit or interfere with the rights of others to learn. These are the students that hurt, hassle, and baffle teachers (Harvey, 1980).

Discipline is universally viewed as an issue of major importance at all levels of education (Zelie, 1980). Public school teachers are expected to structure a positive learning environment in spite of an ever increasing number of students. Today's students are the products of a society that is feeling the effects of the disintegration of the family as the primary social-learning environment (Spaulding, 1978). These students bring to school a unique set of concerns, worries and attitudes that frequently manifest themselves as behavioral problems. Problems with behavior and classroom discipline are identified as factors leading to teacher burn-out. "Classroom management is a more complex problem for the contemporary teacher than for his predecessors" (Sapp, Clough, Pittman, and Toben, 1973, p. 276).

Classroom management techniques abound in the literature available to teachers (Spaulding, 1978). Review of the literature reveals the widespread use of operant conditioning as the basis of classroom/behavior management. Behavior management programs using operant conditioning generally follow the following five-step process: identification of desired behavior, assessment of present behavior, management methods, assessment of managed behavior and reassessment of behavior (Brewer, 1975; Sapp et al., 1973). Most often management methods employ token economies. Since many undesirable student behaviors are minor but frequent, token economies allow for immediate reinforcement without the disruption that would accompany a larger tangible reward.

Token economies, allowing the clients to save small reinforcers to "purchase" larger rewards, were first employed in clinical psychology. The public schools' largest exposure to these methods came about as a result of the burgeoning special education field of the 1960's. Traditional classroom teachers watched as special educators shaped students' behavior; and of particular interest was the success of behavior management with behaviorally disordered students. School teachers had knowingly or unknowingly been using behavior management, but the exposure to special education methodologies heightened their interest and served to further define the role that behavior management could serve in classroom discipline. Although students

with behavioral problems have always existed in the public schools, the passage of P.L. 94-142, Education for All Handicapped Children Act in 1974 opened the door for provision of physical education services for all special education students (Dunn and French, 1982). This includes all Emotionally/Behaviorally Disordered students and while an irritation in most settings, these students pose a special problem for physical educators. The unique nature of traditional physical education classes presents an environment with some inherent but generally controllable hazards. Dynamic bodies and moving projectiles may move in predictable patterns, but the behavioral problem student may move randomly or unpredictably. A more dangerous situation may occur when the problem pupil initiates motion at an inappropriate time, thereby endangering other students. A less hazardous, but nonetheless problematic situation arises when a particular student disrupts the physical education class with diversions, verbal outbursts or a pronounced lack of motivation to participate in planned activities.

It has been estimated that 30% of the school-aged population present some behavioral problem (Dunn and French, 1982). If the trend toward increased class size continues, it is likely that the number of behavior problems in each class will correspondingly grow. Conceivably, about four of twelve students wielding floor-hockey sticks in a match may be prone to behavior problems, or perhaps seven of the twenty-two students playing football may be prone to unpre-

dictable behavior. These notions are quite likely disquieting to physical educators who have already been bombarded with horror stories concerning liability and lawsuits stemming from student's injuries in physical education classes.

According to Spaulding (1978):

> ...it is the specific responsibility of classroom teachers to know how to manage classrooms of normal youngsters and instruct them in such a manner that deviancy and antisocial behaviors are not produced or reinforced (p. 39).

Behavior management using operant conditioning has trickled down to physical education, although other areas of education have used the techniques to a greater extent and for a longer period of time (Presbie and Brown, 1977). Dunn and French (1982) state that:

> The use of operant conditioning, therefore, should be one of the major focuses of special physical education teacher trainers in developing appropriate competencies in the area of behavioral management (p. 44).

The literature is replete with examples of operant conditioning programs for classroom teachers. The amount of management material specifically designed to address the unique setting in physical education is markedly smaller. Physical education by its very nature offers a unique educational experience via sports activities, movement experiences, and even recreational activities. Such activities could be incorporated into a behavioral management program. There is a need to investigate the use of recreational

rewards in a behavioral management program for behaviorally disordered students in a traditional physical education setting. Carlson, MacLean, Deppe and Peterson (1979) list physical well-being, emotional health, quest for identity, learning, self-image/esteem/fulfillment, personality development, social interaction, and integration as being potential benefits of recreation experiences. Shivers and Fait (1985) believe that mentally healthy people use recreational activities to satisfy needs and that mentally ill individuals may also satisfy needs through recreational activities. Positive psychological, physical and social aspects of recreation are documented by Weiskopf (1982). In addition, Weiskopf claims a close and significant interrelationship between recreation and work, education, health and social welfare. Behaviorally disturbed students may be functioning below acceptable levels in one or typically more of the previously listed areas. Recreational activities may serve as powerful motivators for changing students' negative behaviors. These same activities also have the potential to serve as an introduction to leisure skills that may be undertaken by the student either outside of the school day or after the school experience is completed. In addition, the documented inherent qualities of recreation may be beneficial to the unique personality of a Behaviorally Disturbed student.

Statement of the Problem

The purpose of this investigation was to test a program of behavior management using recreational activities as rewards with behavioral problem students. The program was used as a behavior management tool in a traditional physical education class for one subject and in academic settings for two additional subjects.

State of the Hypothesis

The purpose of the proposed study was to test the following hypothesis:

H_0: There will be no improvement in the rate of response of problem behaviors by a behavioral problem student in a tradition physical education class and no improvement in the rate of response of problem behaviors by two behavioral problem students in academic settings as a result of implementation of a behavior management plan.

Significance of the Study

Data generated by this study represents the first investigation to link recreational activities as rewards for proper classroom behavior in a traditional physical education setting with a behavioral problem student. Additionally this will be the first study to coordinate choice of recreational activities as rewards for students' self management of behaviors in academic settings. As society is increas-

ingly aware of lifetime sports and related life skill components, it seems appropriate to present these as options for students. Since behavioral problem students may be unsuccessfully experiencing physical education or academic classes, recreational pursuits may serve to be large motivators as they foster to a great extent the pupil's ego-enhancement through their individualistic, non-competitive nature. The flexibility of the proposed system will offer many alternatives to the physical education teacher who is wise enough to use the program's tenets in his/her own unique situation.

Limitations of the Study

The study was conducted within the guidelines of single-case experimental methodology, multiple baseline change across subjects. As such, it might have been affected by the following limitations:

1. Problem behaviors and acceptable alternatives might have been unique to the individuals under study.

2. Rates and types of reinforcement used in the study were chosen by and, hence, were unique to the students under investigation.

3. Reward sessions were conducted and, thus, might have been more or less effective with certain students as a result of pupils' personalities.

4. Use of the program by, and reward sessions conducted by other investigators may prove to be more or less effective with other students.

Delimitations of the Study

The study was confined to three students identified by the investigator, special education personnel and classroom teachers as chronic behavioral problem students.

Assumptions of the Study

In the investigation the following assumptions were made:

1. The students were able to identify present problem behaviors.

2. The students were able to identify desirable alternative behaviors.

3. The students were able to choose desired reward activities from a comprehensive list.

4. The students were able to exhibit desirable alternative behaviors.

5. The students would enjoy the reward activities enough to continue to exhibit desirable behaviors in hopes of earning additional rewards.

6. Recreational rewards had two positive attributes:

    a. they were a tangible reward for improving behavior in class.

b. they had an inherent ego-enhancing, thus therapeutic quality.

Functional Definitions

1. Behavioral Problem Student - Mutually agreed upon as such by the investigator, special education personnel and the classroom teacher.

2. Behavioral Problems - Exhibited actions by a student deemed inappropriate to the point of disruption or unmanageable by the investigator, special education personnel and the classroom teacher.

3. Traditional Physical Education - Mainstream physical education class, single-sex or coed, with pupils engaged in standard curricular pursuits with no behavioral management techniques in use prior to the initiation of the investigation.

4. Academic Settings - Traditional academic classes. In this study academic classes consisted of social studies, science, and english.

5. Recreational Activities - Activities of a non-competitive, self-paced nature. These may be conducted indoors or outdoors appropriate to the activity and are assumed to have inherent ego-enhancing properties.

6. Behavior Management Plan - A system using rewards for voluntarily student-emitted appropriate behaviors.

7. Lifesports/Lifeskills - Recreational Activities (definition #3 above) that may be practiced throughout one's lifetime with a minimum investment of time and equipment.

8. Desirable Alternative Behaviors - Behaviors agreed upon by student and teacher which will take the place of Behavioral Problems (definition #1 above) in subsequent investigations.

CHAPTER II

REVIEW OF LITERATURE

The review of related literature in this chapter consists of six sections. The sections are: a) origin of operant conditioning; b) classroom behavior management; c) behavior management in physical education classes; d) inherent qualities of recreational experiences; e) history and overview of single-case research; and f) a summary.

Origin of Operant Conditioning

Pavlov was the first researcher to demonstrate the principle of operant conditioning with his famous experiments using dogs. However, it was John B. Watson that furthered operant conditioning research during the behaviorist movement in psychology. The school of structuralism preceeded behaviorism and the tenets of structuralism held that consciousness was the key to all responses (Morris, 1973). Watson believed that the objective methods of investigation were able to document research and that speculation on consciousness did not suffice (Schiltz, 1975). Watson expanded the ideas of stimulus/response through animal research. B.F. Skinner was a later behaviorist who further researched operant conditioning on animals and humans.

Behavior therapy expanded the concepts and uses of operant conditioning during the 1950's and 1960's, reflecting a trend in clinical psychology (Rakita-Leon, 1977).

Educators were exposed to operant conditioning methodologies during the expansion of special education in the late 1960's. Modifications and applications of operant conditioning methods for use with special education and mainstream education may be found in classroom management literature.

Classroom Behavior Management

Literature concerning classroom management through behavior modification and operant conditioning exists in two groups; one being implementation guides and the other being short journal articles reporting on behavior management experiments.

The implementation guides typically deal with suggestions for the classroom and the teacher, while the research offerings report on methods used with groups of five to twenty students usually labelled as behavioral problems or low in academic performance. Of the former group, Brewer's Mini-Guide For Planning Instructional and Behavioral Classroom Management (Brewer, 1975) is a model complete with assessment forms, goal sheets and management methods. Part One of the guide deals with modifying student's behavior when not actively engaged in academic

tasks such as following directions and moving about the room in an appropriate manner. Part Two defines the area of instruction management as the student's interaction with the learning task as presented by the teacher. Brewer feels that it is the teacher's responsibility to arrange and manage the instructional process to insure the greatest achievement possible for each student. As in Part One, the second part of the guide is replete with sequential forms and checksheets.

Much of the literature on management uses the goal of increasing opportunities for student learning as the underlying reason for managing the classroom environment. Wickersham and VanNagel's (1976) Behavior Management: For the Identified Exceptional Student in Your Classroom. 9 out of 10 Kids Need It, was developed as a basis for workshops involving teachers of exceptional children in regular classroom settings. The document is organized into four main sections: assessment, instruction, motivation and reward. However, each section includes checklists and test forms that are designed to evaluate and serve as the foundation for individualizing the teaching of academic skills. Wickersham and VanNagel's (1976) document is more comprehensive in regards to academic achievement than Brewer's (1975) Mini-Guide. Brewer's approach is to introduce the reader to the possible uses of behavior management, while Wickersham and VanNagel's is a complete package designed for the Jacksonville, Florida Public School System.

T.C. Lovitts' (1978) Managing Inappropriate Behaviors in the Classroom is a summation of "What Research and Experience Say to the Teacher of Exceptional Children." This document refers only incidently to academic achievement. It is for the most part a practical tool for managing individual and group behaviors. A glossary follows the preface which defines nine terms used throughout the book. Chapter One is an overview of the behavior change procedure with an emphasis on motivation. Chapters Two and Three deal with individual and group management systems respectively. Each chapter lists several programs and variations while the final chapter sums up the management programs with suggestions that apply to individuals and groups. Only one page is devoted to the uses of behavior management to increase academic achievement. Therefore, the purpose for this document was fulfilled in the sense that it was written to help teachers to manage disruptive behaviors.

A document that bridges the gap between the implementation guides and the research articles is K.D. Harvey's (1980) Classroom Management: An Annotated Bibliography. This bibliography has three parts: 1) Instructional Management; 2) Behavior Management; and 3) Physical Management (organization, teacher self-discipline and classroom environment and logistics). Each section has an introduction by the author giving a definition of the problem and a general rationale for the selection of sources. This U.S. Department of Education booklet lists books and booklets that

range from the philosophical (Blooms's Human Characteristics and School Learning) to the pragmatic (Dunn and Dunn's Educator's Self-Teaching Guide to Individualizing Instructional Programs). The author maintains that the collection is offered to assist the classroom teacher in conceptualizing a comprehensive approach to classroom management.

Finally, W.E. Ferinden's (1970) Classroom Management Through the Application of Behavior Modification Techniques is a practical guide designed to enhance classroom management of student's academic and social behaviors. Techniques, guidelines and suggestions for programmed instruction are included. A comprehensive list of negative behaviors and accompanying extinction programs are included. The booklet is thorough, yet concise.

The selection of research articles dealing with classroom behavior management using behavior modification and operant conditioning is small. Stetter (1971), a high-school counselor, successfully introduced eleven students to a simple token economy with music, early dismissal or late arrival situations as rewards. He concluded that grades on report cards generally improved. Main and Munro (1977) used a token economy in a A-B-A-B design with six older students (mean age = 16.2 years) labelled as behavior problems and potential dropouts. With backup reinforcers readily available in the school setting, inappropriate responses declined dramatically. Blanchard and Johnson (1973) compared tangible rewards and teacher attention using two

groups of five behavioral problem seventh grade boys. Significant generalizations of improvement resulting from rewards were made while no significant improvement was found as a result of teacher attention.

Sapp, Clough, Pittman and Toben (1973) reported three studies in one article. Each situation was characterized by underachieving students exhibiting low levels of on-task behavior. They used methodical application of the Premack Principle, that students will participate in a low-interest event (e.g., studying) if a high-interest event (e.g., talking with a friend) is used as a reward. Results indicated greatly increased levels of completion, attention to task and improved grades.

Reiss, Klein and Reiss (1974) used a hierarchy of recess activities as rewards for systematic improvement on mathematics assignments with a classroom (N = 22) of low-average third grade students. Arithmetic achievement was found to increase using the recess rewards. The study is unique in that it was shown that it is possible to implement successful programs of contingency management involving cost-free reinforcers in natural classroom settings. Hundert, Bucher and Henderson (1976) found that a token economy that reinforced correct work had the additional effect of increased appropriate behavior on five disruptive boys aged nine to twelve. During the experiment, a change in reinforcement increased appropriate behavior with no accompanying change in correct work.

Spaulding's (1978) comprehensive work on behavior management outlines many studies which show behavior management using rewards for responsible classroom behavior as being ego-enhancing for problem students. Spaulding proposes using behavior management as an integral part of classroom management and using personalized instruction not merely as a response to inappropriate behaviors. Citations from prior studies and Spaulding's four experiments indicate that regular classroom teachers could ameliorate behavior problems through application of behavior modification with social reinforcers. Punishment was viewed as less powerful, as ego-enhancement occurred at a higher rate when only positive reinforcement was used alone.

Behavior Management in Physical Education Classes

One of the earliest, and at the same time, most comprehensive works in this area is Presbie and Brown's (1977) booklet Physical Education: The Behavior Modification Approach. This work contains techniques for behavior management and improvement, ideas relating behavior management to skill acquisition and physical fitness, and contains a section concerning behavior management as a tool for general health improvement.

Currently, articles on behavior management applied to physical education are few. French's (1978) presentation on behavioral management techniques outlines behavioral contracts, consequences and extinction. Additionally, Dunn

and French (1982) explore the uses of operant conditioning in physical education. They present an argument documenting the increased need for behavior management in physical education. The increase of average class size, the number of special education students and the rising number of students with behavioral problems are listed as reasons for behavior management training for physical education teachers. Uses of behavior management are suggested, including improvement of instruction, decreasing the likelihood of accidents, and reinforcing selected behaviors. Another overview of behavior management techniques applied to physical education is Loovis' (1980) article on children with special needs. He proposes that behavior management can be used for developing and modifying motor behavior, modificatiions in therapeutic settings (e.g., learning to use crutches), and in adapted physical education classes. Vogler (1981) used a "good behavior game" with a token economy in a physical education class of 26 behaviorally-disordered students. The game included high-desire activities as rewards for an on-task behavior. It was felt that the system's controls also increased the likelihood of student participation. Results evidenced a significant increase in on-task behavior. Conclusions were; 1) that behaviorally-disordered students should participate in physical education because their behaviors are controllable, and; 2) a means of control increases the likelihood of participation and consequent learning.

Lavay (1983a) developed a bibliography of documents pertaining to behavior management in physical education, recreation and sport. Sections include: Behavior Management, Overview, Reinforcement Systems, Motor Performance, Physical Fitness, Recreation, and Sport. In addition Lavay (1983b) documents the use of physical activity as a reinforcer in physical education. The thrust of the presentation was similar to French's (1978) in that basic tenets of operant conditioning were presented for use in physical education environments.

Jansma (1978) presents four case studies using operant conditioning on disturbed students by a physical educator. ABAB (reversal design) experiments were conducted with four adolescent males. Jansma based treatment on the Premack Principle, which postulates that participation in a highly desirable activity can be made contingent upon exhibition of behaviors that are characterized by a low probability of occurrence. Low probability behaviors are typically desirable and not frequently spontaneously emitted by subjects. Jansma concluded that operant conditioning was a powerful tool for behavior change and was very cost-effective.

Jeltma and Vogler (1985) reported the effects of individual contingencies on behaviorally disordered students in physical education using an ABAB time series design. Response cost procedures (loss of free time) were used for individuals exhibiting inappropriate behavior. Results

showed that individual contingency can increase on-task behavior.

Inherent Qualities of Recreational Experiences

It is apparent that recreational experiences are beneficial to individuals in many different ways. Of particular interest to the nature of this study is the supposition that positive affective development may be a result of recreation participation. Carlson, MacLean, Deppe and Peterson (1979) feel that participation in recreational activities may foster affective growth similar to Maslow's self-actualization. They list emotional health, quest for identity, self-image, self-esteem, self-fulfillment and personality development as being potential benefits of recreation. Weiskopf (1982) claims positive psychological state of mind as a benefit of recreational experiences.

Glavin and Witt (1969) used wrestling, soccer, crafts, remedial physical skill sessions, drama and music as recreational experiences. They suggest that:

> From our experience it appears that the positive payoff of recreational participation is so great that a sociorecreation program can not only provide an excellent medium for the development of physical and social skills but can also be a major program area for rechanneling deviant behavior (p. 791).

History and Overview of Single-Case Research

Single case research often is viewed as a radical departure from tradition in psychological research. How-

ever, key figures in psychology (e.g., Freud, Pavlov, Wundt, and Skinner) have used investigation of individuals as their primary methodology (Kazdin, 1982). In Kazdin (1982) Allport, 1961, recommends study of the individual as a supplement to the study of groups to provide information about the uniqueness of the person. Kazdin (1982) also reports that Freud used single case methodology to change dysfunctional behaviors in Little Hans, 1933, and Anna O., 1957. As single case methodologies improved, Kazdin (1982) reported that Cook and Campbell, 1979, designed systematic procedures to rule out extraneous factors that became commonplace in the designs. The practitioner who elevated the single case approach with prominent experimentation was B.F. Skinner. Skinner used frequency of behavior in individuals to discover lawful processes thought to be inherent in groups. Effects could be seen directly with no need for statistical analysis (Kazdin, 1982).

In the 1950's and 1960's single-case design became associated with operant conditioning. Kazdin (1982) notes that a shift occurred during the late 1960's from the clinical to the applied setting as documented by Ullman and Krasner, 1965. Currently, clinical psychology is not research oriented, but directed toward clinical service. The clinician is not concerned with presenting a standardized technique but providing treatment that is individualized to optimally meet the patient's needs (Kazdin, 1982).

Watkins and Wasson (1984) address the use of single-subject time-series designs in adapted physical activity. This article combines single case and multiple baseline designs with practical concerns regarding acquisition, maintainance, and the generalization of motor skills for atypical research using a limited number of subjects.

Generalizability

The practicing clinician is confronted with the individual case and empirical evaluations of treatment need to be made at this level. The subject to be selected must be emitting characteristic actions representative of the diagnosis, or label. The researcher must study what is available and generalization may only proceed as far as characteristics of the sample resemble other potential clients (Herson and Barlow, 1976). Edgington (1966) points out that one can make statements of generality based on logical, nonstatistical considerations. Stake (1978) uses the term "naturalistic generalization" to describe the recog nizing of similarities and natural covariations of happenings.

> As readers recognize essential similarities to cases of interest to them, they establish the basis for naturalistic generalization...the characteristics of the method (single-case) are usually more suited to expansionist than reductionist pursuits. Theory building is the search for essences, pervasive and determining ingredients, and the makings of laws. One is left with more to pay attention to than less (1978, p. 7).

Data Analysis for Time Series Analysis

The clinical criterion refers to the importance of the change achieved in single case methodology, and the level of change required for the client's adequate functioning in society (Risley, 1970). As an ideal, applied interventions strive for changes that ordinarily surpass statistical significance. Experimental manipulations that may be barely statistically significant may be interesting, but not substantial enough to allow the client to function in society. Findings in single case methodology frequently include dramatic effects across extended baselines, no treatment and treatment phases (Kazdin, 1978). Hence, it is unlikely that the results occurred by chance; the underlying reason for statistical analysis.

Presentation of Data

In single-case research, the judgement is made by examining the effects of intervention over time. Visual inspection can be used because of the source of effects that are investigated (Kazdin, 1982). Substantial changes are evident visually and do not warrent statistical analysis. Marginal statistical significance would not pass visual or practical-application inspection. When intervention effects are potent, the need for statistical analysis is obviated and graphic displays will allow efficiency of treatment.

Baseline results and client-directed omission results are charted under single case methodology procedures outlined by Kazdin (1982). Visual representations of results are arranged as multiple baselines across behaviors. Frequency of behaviors are plotted against time, with baseline, treatment and no-treatment phases identified. Changes in trend, level and, mean are of primary interest and most often diagrammed and discussed (Kazdin, 1982).

Summary

After reviewing the literature the following conclusions seem warranted: a) the most predominant and effective method for behavior management is operant conditioning, using a token economy, b) behavior management using operant conditioning has been documented in academic settings and may prove effective in a physical education setting if guidelines are followed similar to those found in the classroom behavior management literature, c) recreational experiences are thought to have inherent qualities that may lead to positive affective development, and d) single-case research has been used by key figures in psychology, may be generalizable to similar clients, and has a rationale for visual presentation of data.

CHAPTER III

PROCEDURES

Three treatments were conducted using three different subjects each with unique strengths and weaknesses. As a result of these individual circumstances and in keeping with single-case reporting techniques, each will be presented individually. In keeping with privacy considerations intrinsic to professional standards, pseudonyms will be used for each of the subjects.

Investigations with Matt and Jason (Cases One and Three, respectively) were conducted under the auspices of the St. Cloud, Minnesota school system; department of special education. Kevin's treatment (Case Two) was carried out within the guidelines mandated by his elementary school principal. Background information detailing all prerequisite procedures for cases one and two will be presented prior to those respective reports. Background information for case three will immediately precede that case.

Background Information: Cases One and Three

School Administrators and Site Selection

The investigator contacted the St. Cloud public schools and was introduced to the assistant director of special

education in charge of research and development. An appointment was arranged that would allow the investigator the opportunity to propose a behavior management program. At that meeting, the investigator submitted a proposal outlining the tenets of the program to the assistant director. A favorable response allowed the investigator the opportunity to present the proposal to the director of special education. The assistant director who had already reacted positively to the proposal also attended the meeting.

The meeting concluded with permission granted to investigate students in one of the mainstream high schools. The author contacted the principal of that building and again explained the program. Permission was given to approach the physical education instructors in that school. The program was outlined to the instructors and a list was compiled of students that the instructors felt were behavioral problems.

The investigator observed each of the instructors' classes and observed the behaviors of the students in question. The investigator felt that the students in question did not exhibit behaviors excessively dissimiliar to that of other students in the same class. The investigator also felt that the students in question did not fit the pattern of behavioral disturbance (BD) characterized by inability to respond appropriately to instructors, peers or situations that required self-control.

As a result, the investigator made contact with the Area Learning Center (ALC). The investigator presented the

behavior management program to the director of the ALC. A favorable response led to a meeting with the center's physical education instructor. The investigator explained the program and the instructor felt that there were very few behavioral problems in his classes. The investigator observed the classes and confirmed the accuracy of the instructor's statement. The investigator later discovered that the physical education instructor had attained certification at an advanced level of Karate and that this fact was known by students. The physical education instructor suggested that a meeting with the center's social worker might lead to identification of students exhibiting inappropriate behaviors in academic settings. The social worker constantly monitors students' progress. After a thorough review of the proposal, the social worker suggested the names of two students that he felt might possibly benefit from participation in the investigator's program. The social worker said that he would like the program to run past the end of the investigator's data collection, through the end of the school year so as not to discontinue a possibly successful tool prior to the end of school. The investigator agreed to that condition.

Area Learning Center and Policies. The ALC is a secondary special education facility totally under the direction of the St. Cloud public schools' special education department. The center has 55 students in grades

seven through ten enrolled in the Under Sixteen Alternative Placement (USAP). There are another 175-200 students in grades 11 and 12. Attendance is not mandatory after the age of 16 in Minnesota. As a result, the older students choose when to attend, with approximately 70 to 85 in attendance on any given day. Additionally, there are approximately 25 eleventh and twelfth grade students involved in the work-experience program. These students attend classes for one half of the school day and then leave the building for their place of employment.

Many students are recommended for placement at the ALC after losing their right to attend their home-area junior or senior high school due to repeated offenses of truancy, tardiness, misconduct, insubordination, violence to teachers or peers, or any combination thereof. Many of the ALC students have had numerous encounters with the law, and subsequently, the court system. Some of the students enroll in the ALC for a transitional period between more structured placements and reenrollment in their home area school. Although the St. Cloud public schools do not officially recognize any of the students as being bd, many of the students enrolled at the ALC exhibit bd tendencies. These behaviors are frequently noted as being among the primary reasons that the students qualified for alternative placement or lost the right to attend their neighborhood school.

Students that have established themselves as having chronic behavioral problems are placed on a behavior-

monitoring program. (See Appendix A) This program requires the student to be rated in several areas felt to be intrinsic to proper classroom behavior. A number system is used to rate each separate behavior in every class in which the student is enrolled. The student is rated from 0 to 9 (lowest to highest), with a 7 being considered as the minimal level of acceptable behavior. Each class period ends with the student presenting his/her score sheet to the instructor. The instructor then rates the student in each of the six possible behavior areas and computes the average score of the six subscores. A score of 8 or 9 connotes an appreciable increase in desired behavior and, consequently, is a rare score for a new student or a student exhibiting chronic behavior problems. The student is required to have the scoresheet signed by a parent before submitting it to the social worker the next morning. The social worker keeps the sheets and computes weekly subscore averages.

Background Information: Case Two

Subject Selection and Site Information

Kevin was a 12-year-old sixth-grade student at an elementary school in a small town fifteen miles out into the farmland surrounding St. Cloud, Minnesota. The 159 elementary school students are from the town and the surrounding area. The school has one classroom for each grade level. Kevin had a history of behavioral problems and was referred

to the investigator by an emotional/behavioral disturbance resource person with a cooperative that the Rockville schools subscribed to for special education services.

The investigator was contacted by an emotional/ behavioral disturbance resource person who had been asked to observe Kevin's behaviors and suggest alternative management strategies to Kevin's classroom teacher. The resource person and teacher felt that Kevin's behaviors in physical education were inappropriate. The investigator agreed to observe Kevin in the physical education setting and gauge the likelihood of altering Kevin's behaviors through participation in a behavior management program.

The investigator contacted the principal and explained the program and potential benefits to Kevin and the teacher. The principal required that the teacher give approval for the program. The principal was also concerned that the teacher might be asked to constantly evaluate Kevin's behavior. The investigator explained that all data collection would be conducted by the investigator or an assistant. The principal gave approval to the program provided that the teacher and Kevin's mother approved. The teacher approved the program. A phone call was made to Kevin's mother and she offered approval.

Observation of Kevin during physical education led the investigator to believe that the student had average ability and an acceptable level of fitness. The investigator felt that average ability might have been a confounding factor in

this case, as the majority of the class appeared to possess above average physical skills. The teacher's methods were such that students with above average ability reaped the fruits of physical education. Students with lesser ability were rarely allowed the benefit of insightful teaching that would allow them to participate in activities and situations that had success for all as a hidden curriculum. A result of the teacher's programming was that behavior was not well regulated. Many students would repeatedly misbehave during the course of any particular physical education class.

Research Design

A multiple baseline design across individuals was used for this study. Collection of data on baseline behaviors was gathered using a multiple-probe technique.

Multiple-Probe Design

Kazdin (1982) defines a probe design as:

> ...the assessment of behavior on selected occasions when no contingencies are in effect for that behavior (p. 209).

Baseline data was collected using a multiple-probe technique. Horner and Baer (1978) state that the multiple probe method may be used when an assumption can be made regarding stability of behaviors. Special education personnel and teachers felt that each of the subjects were emitting high levels of inappropriate behaviors on a regular basis. As a result, the intermittent probes documenting baseline perfor-

mance are believed to be representative of the subjects' rates of response.

Multiple Baseline Design For Individuals. A multiple baseline design across individuals was selected to illustrate that the treatment alone was responsible for the change in each subject's behavior. To prove the worth of the treatment, each subject would improve behaviors only after the introduction of treatment and irrespective of other subjects and their particular interventions. The multiple baseline design across individuals requires evidence of stability of targeted behaviors in all subjects during baseline data collection. Treatment is then initiated on one subject. The treatment would be expected to cause a decrease in that subject's inappropriate behaviors. The other subjects' inappropriate behaviors should remain stabilized as they are not being treated. When the first subject's behaviors have stabilized at the desired level the treatment is introduced to another subject. This process is repeated for all three subjects. The effect of the treatment is evidenced in each case by a change in behavior after the initiation of treatment and not before. Stability of the other subjects' behaviors, whether treated or untreated, serve as controls over each subsequent introduction of treatment on other subjects.

Successful effects of treatment with all subjects is evidenced by data evaluation at six reference points during

the investigation. Three reference points are the levels of response to treatment by each of the three subjects. Successful treatment in subjects one and three would be established by an increase above baseline levels. Subject two would decrease behaviors to below baseline level. The other three reference points in the experiment would indicate success if each subject's behavior, whether treated or untreated, would show stability during all subsequent treatments of other subjects. If all six reference points could be evaluated as occurring, the significance of the treatment would be demonstrated. The chance of all six reference points illustrating positive change as a result of chance occurrences would be so low as to be insignificant. Stability across subjects' behaviors would have served as the experiment's controls.

Internal and External Validity

Internal validity is a measure of the extent to which the results of an experiment are free from influences that might have assisted or impeded the treatment. Of particular interest to this single-case design were the threats of history, maturation and instrumentation. In each case, the investigator maintained constant communication with each subject's teacher(s). The investigator wanted to note any additional changes in subjects' school or home life that would undermine conclusions regarding the efficacy of treatment.

The threat of history was ruled out through the investigator's communication with teachers. No other events were found that could have led to a spontaneous behavior change coincidental with initiation of treatment. The threat of maturation was disregarded in each case, as reports on each subject in other classes not within the reinforcement treatment showed that each subject's behavior in those environments was not improving, and in the case of subject three, was almost a cause for expulsion. Finally, the threat of instrumentation was reduced through blind reporting in cases one and two, and multiple reporting in case three.

Threats to external validity reduce the generalizability of results to increasingly dissimilar subjects and environments. The very nature of the single-case research design across three separate subjects is a tool used to exhibit the strength of a treatment. Of particular interest to this design, however, was the threat of the interaction of treatment with the student and the time and the environment of the study. By selecting three students who were felt by teachers and school administrators to be problems of the largest magnitude, it was believed that successful treatments would be proven to be effective by the intervention's merits rather than by the extremely small possibility of each subject ameliorating his behaviors because of some unknown interraction with the treatment schema.

CHAPTER IV

CASE #1 - MATT

Background

Matt was a 13-year-old seventh-grade student at the Area Learning Center (ALC). He was placed in the ALC on December 10th, 1984 after being removed from Tech Junior High School in St. Cloud, Minnesota. Matt is an interracial adolescent and is living with his mother who is Caucasian. His father is Black, divorced from Matt's mother and is living on the west coast. Special education personnel felt that Matt's visible Afro-American heritage, along with an asthmatic and an obesity condition, had been contributing factors to his behavioral problems. Additionally, Matt had spent time with his father over the preceeding summer and returned to St. Cloud apparently confused about his mixed lineage.

Matt had a history of inappropriate behavior at Tech and had been preidentified as a Learning-Disabled (LD) student. He had undergone comprehensive evaluation at the University of Minnesota Diagnostic Center. The psychiatrist in charge of Matt's case diagnosed Matt as E/BD and not LD as a result of his scores on the Woodcock-Johnson Psycho-educational Battery. Matt had also been under medication

for some time although the psychiatrist recommended that the medication be discontinued upon enrollment at the ALC. The psychiatrist had tried to interest Matt in attending group sessions for adolescents but Matt had shown no interest.

Matt was placed on the behavior reporting system when he became a chronic behavioral problem. The social worker who monitors students' progress brought up Matt's name when asked for possible subjects for the investigator's behavior management program. Matt had been displaying inappropriate behaviors in a number of settings and the social worker believed that Matt might respond to the rewards within the program.

Matt's behavior was poorest in science class as evidenced by numbers on the behavior reporting system. The investigator and social worker agreed that Matt needed to remediate his language, attitude and work behaviors as his subscores were lowest in those three areas.

Baseline and Treatment

The following diary of Matt's behavior contains comments from team staffing logs and a misconduct file. Any staff member may bring up student's name during a team staffing session and concerns are noted and incidents are chronicled. Comments are entered into the misconduct file if, and when, a student misbehaves to a degree that an instructor or staff member feels compelled to report the

incident. Additional comments come from the investigator's interactions with Matt.

The social worker suggested that the ALC's number rating system be used in place of the investigator's proposed system. The investigator noted that the use of the existing number system would let the program proceed without the science teacher's knowledge thereby avoiding any potential Hawthorne effect. The investigator asked for secrecy concerning the project and baseline data as it was felt that the instructor's objectivity may be compromised if he knew that treatment was in place. The investigator also acknowledged his own uneasiness with not informing the science teacher. Ethically, the instructor should be informed of any therapeutic program or extenuating circumstance that affects a behavioral problem student. However, the social worker expressed the feeling that the control needed to validate the program superceded the teacher's need to know of the program. He also felt that given the teacher's personality, the discovery of the program at a later time would be accepted in the light of proving the treatment's worth. Matt was not informed that he was a subject or that data was being collected from his number sheets.

(Baseline data collection began on March fourth. Point totals were collected from scoresheets on attitude, work and language in science class.)

On March sixth, Matt entered into an argument with another student concerning handcuffs that led to in-school

suspension. If Matt ever brings them again or, speaks of them, additional suspension time will be given. On March seventh, Matt responded to low rating numbers by threatening his science teacher (MF). Matt had been disruptive and walked out of science. The social worker checked into the possibility of conflict at home. On March 18th, Matt hit another student. Matt threatened to hit a teacher on March 20th after the teacher said that a misconduct notice was forthcoming. Also on March 20th the social worker noted that Matt's behavior in the preceeding report caused his dismissal from science class. As a result of premature departure and poor score, Matt "lost" his sheet and was unable to turn it in the following morning.

On March 21st, Matt again threatened his science teacher and was placed in school suspension. His next misconduct will result in out of school suspension and a required parent conference. Matt's behavior on March 21st resulted in early removal from science and he subsequently failed to turn in his behavior sheet the following morning. xatt again failed to turn in a score sheet for his day's behavior on March 22nd. At this point, the treatment was initiated. The investigator was formally introduced to Matt by the social worker as having been a teacher in a school similar to the ALC. In order to put the student at ease, Matt and the investigator left the office to sit in a neutral area. The investigator told Matt that a program in Duluth, Minnesota had been designed to help students to

change behaviors and earn recreational rewards in the process. The investigator proposed that Matt could earn recreational rewards for managing his attitude in science class. Matt was asked to fill out the Recreation Interest Survey (Appendix A). Upon completion, he was asked to list the six most desirable activities from the Recreation Interest Survey on the left side of a Reward Menu (Appendix A). He then ranked his top four choices in order of desirability in the blanks on the right side of the Reward Menu. The most desirable activity was entered into the space requiring the most points earned. Each successive choice required fewer points. It was explained that a score of seven in the attitude column in science class was worth one point, a score of seven in the work column was worth one point and a score of seven in the language column was worth one point. An eight in any column was worth one and one half points and a nine was worth two points. Points could be spent or saved for higher cost rewards. Points could never be taken away for poor behavior, but points unearned delayed possible rewards. It was also explained that when an activity commenced, the points spent for the activity were used up, although extra points not used to purchase the activity would remain in the student's possession. Matt appeared to relish the idea of the reward system and said that he felt that the desired behavior change was possible. The investigator told Matt that the investigator would be coming to the ALC whenever time permitted to check up on

point totals and visit with him. The investigator told Matt that the science teacher shouldn't be told about the program, as that could adversely affect the scores on the behavior sheet. Also, if other students were aware of the program, they might try to engage Matt in some incidents to delay his earning of points. Matt said that he understood and would keep the program between the social worker, the investigator and himself. The investigator reported to principal, explaining that treatment had begun. The principal mentioned that Matt's behavior as of late had been very troublesome. The principal wished the investigator and Matt good luck with the program.

On March 26th, the investigator visited with Matt to check the previous day's scores. Matt talked about school, and the rewards chosen for activities. A team staffing report of March 26th noted that Matt was placed on a behavioral modification program. His science teacher reports that Matt has had outstanding behavior and work habits as a result of the program. Obviously, the director destroyed the control in the program now that the teacher was informed of the treatment. The possibility of a Hawthorne effect existed. On March 29th, the investigator again visited with Matt. Both were very pleased with the results. The investigator began a discussion of how intrinsically rewarding good behavior can be. Matt agreed. More discussion of the program ensued. Matt said he would save for reward #1, shooting a BB gun. The possibility of a novelty effect was

noted although data for all three behaviors had been good. The investigator spoke to the science teacher and apologized for not informing him as to initiation of treatment. He explained that control was needed and the results would have been unbiased if he was unaware of treatment. The science teacher understood and had no problem with the procedure. He was very happy that Matt was meeting success under the program.

On April first Matt threatened another student and was insolent to a female teacher. On April second, Matt did not turn in a scoresheet for the previous day. Additionally, the social worker felt that Matt should not be allowed to leave the building for a reward session due to severity of misconduct over the past two days. The investigator felt that rewards should be available whenever points were sufficient since the treatment was independent of other school programs. However, the investigator felt it best to heed the social worker's feelings. A new policy was added to the program: Matt may only participate in a reward out of the building if the prior day's behavior was misconduct-free and behaviors up to the moment of departure were acceptable.

When the investigator informed Matt of the postponement of the reward due to the previous days' misconduct, Matt reacted in a very mature manner. The investigator reiterated that points were not lost and subsequent points earned would be stockpiled. Matt's reception of the post-

ponement was shared with the social worker, who was pleasantly surprised.

It was reported that Matt was calling another student names on April third. Matt was again ineligible for a reward as a result of the violation. The investigator's visit with Matt was pleasant, with Matt sheepishly admitting his mistake. A poor attitude in physical education was noted on April fourth. Matt refused to participate or talk with the teacher. Matt threw away his points sheet in anger and mutterings under his breath during class were heard. Matt was again ineligible for a reward on April ninth. His math teacher felt that behavior was poor although no misconduct form was written up. The investigator felt compelled to abide by the school's wishes but was concerned about further postponement of the reward session. Fortunately, Matt again took the news well, but expressed mild displeasure. The investigator initiated a discussion regarding swallowing one's feelings occassionally to please others. Matt understood, but expressed mild negative statements. Matt was told to call the investigator if he was ready to go the following day. Matt did not call the following day.

Matt met his goal and participated in a reward session on April 11th. The reward session was very positive. Matt chose to shoot a BB gun. Matt had a good working knowledge of firearms and firearms safety much to the investigator's relief. The investigator reminded Matt that points were

still available as he had been earning them during the period that he was ineligible for a reward.

On April 17th, Matt was caught throwing paper clips at another student. However a team staffing that day noted that Matt had been doing well on the behavior modification program. His science teacher wanted to take Matt out of school for a reward. On April 22nd, Matt was again eligible for a reward. The investigator was not able to meet Matt as work prohibited. Matt was receptive to postponement until the following day. However, Matt swore at his teacher during math class the following day and was ineligible for a reward. On April 23rd, he threatened to blow up a teacher's car. Matt was again ineligible for a reward as a result of those two misconducts. The investigator and social worker felt that Matt should not collect any misconducts for two days to be eligible for another reward. Matt took the news in a responsible manner, but was having a bad day. The investigator cut the meeting short to avoid a possible negative confrontation.

On April 25th, Matt was again ineligible. The reward was postponed until the following day. The investigator congratulated Matt on the fact that points were still being earned for good behavior in science. On April 26th, the English teacher was unhappy with Matt's behavior. The reward was postponed. Matt took the news well. The investigator reported the events and the general success of the program to the principal. The principal acknowledged Matt's

success and felt that Matt was a severely troubled adolescent and that any success in remediating his behavior was significant in the ALC setting.

Matt upset a female student by sexist remarks directed toward her on April 29th. As a result of the above misconduct, Matt was unable to participate in a reward. On April 30th, the investigator was unable to break an important appointment and plans were made for a reward session for the next day.

However, Matt had been involved in an incident with another student at a shopping mall the previous evening and it was continued at school on May first. The principal spoke with Matt, and expressed doubt as to Matt's eligibility to leave for the reward session. The principal and the investigator discussed Matt's inability to dissociate himself from conflicts with peers and teachers. The principal stated that if the investigator could get a satisfactory discussion from Matt concerning his responsibility to not respond to unpleasant verbal remarks, then the reward session could proceed. Matt and the investigator retired to a quiet area and talked about the two incidents. Matt's hindsight proved satisfactory and was able to participate in a reward session. Matt had more than enough points for the highest cost reward, but chose to go fishing instead, which was a lower cost reward.

During fishing the investigator initiated a conversation regarding delaying reactions to teachers' criticisms.

Prior to leaving for fishing, the math teacher had expressed doubts as to whether Matt should be allowed to go. Matt immediately became very disturbed. Reconcilliation was made with an understanding that Matt would do required work and some additional work at home. The investigator proposed that the teacher was not attacking Matt as a person, but commenting on the amount of work finished. Matt acknowledged that and acknowledged that procedure as a good way to deal with similar matters.

On May second, a team staffing report noted that Matt is continually on the edge of conflict with peers and staff. Behavior in science is good but not stable in all other classes. He had been evidencing continuing conflict with other students. On May third, the investigator visited with Matt regarding his point total. The total was high enough for a reward session, and a date was set for the following week. The social worker and principal expressed their satisfaction with program.

Matt's physical education teacher related an incident while visiting with the investigator in the teacher's lounge. Two of Matt's teachers were unhappy with his behavior and hoped that he would earn suspension for the remainder of the school year. Matt's science teacher commented that Matt was a changed student and was very eager to perform well in science. The teacher credited the behavioral management program, as the reason for Matt's change.

Discussion of Case, Matt. The science teacher reported that Matt's targeted behaviors improved. Evidence of the instructor's evaluation are the scores he gave Matt on the behavior reports each day which are displayed in Figure 1. The teacher verbally reported to other staff that Matt's behavior had improved dramatically. During the period of treatment, Matt's behavior in other classes was felt by the staff to be getting worse, leading one instructor to predict that Matt would be suspended soon for the remainder of the school year.

The results of this single-case investigation will not support a conclusion that the treatment was solely responsible for the improvement in Matt's behavior. The instructor was not blind to the treatment; he was informed relatively early that the program was in existence. The possibility exists that Matt's behaviors did not change as dramatically as the teacher reported. The teacher may have unwittingly inflated Matt's scores under the impression that Matt's involvement in the program was beneficial (an example of a Hawthorne effect).

Perhaps the perceived improvement was the catalyst for actual behavioral improvement and an improvement in the student/teacher relationship. Matt had taken an interest in falconry and computer use during the treatment phase. He had been staying after science class for instruction in computer use and building a closer relationship with the teacher. His interest in birds of prey was fueled by some

information passed along by the science teacher. These interactions probably would not have occurred before the treatment, due to Matt's misbehaviors in science. These misbehaviors negatively influenced the student/teacher relationship with Matt frequently expressing displeasure that the instructor rated his behaviors so low.

The investigator felt that Matt's behavior had improved as a result of the program, for the following reasons:

1. Matt had the ability to exhibit the desired behaviors. He apparently did not feel compelled to produce them during science class before the program began.

2. The investigator was able to establish a non-threatening, supportive relationship with Matt. This may be partially attributed to the fact that the investigator was not a staff member at the ALC and was not viewed as a possible adversary.

3. The science teacher welcomed the improvement (real or imagined by him) in Matt's behavior and in turn modified his behavior to be more supportive of Matt.

Without the treatment, spontaneous improvement of behaviors by Matt probably would not have occurred. This assumption is based on reports of Matt's behavior in other classes during his improvement in science class. Additionally, Matt kept earning points within the program even when he was repeatedly not allowed to leave the building for reward sessions. Matt's dramatic change in scores and subsequent improvement in relationship with the instructor

could be used as a reason to implement a similar program for a student with characteristics similar to Matt's.

The investigator felt that the program may have been proved as the impetus solely responsible for Matt's behavior change if the treatment had been removed for a period; in essence changing the research design to an ABAB format. However, given the severity of Matt's behavior and a comment from several staff members that Matt's excellent behavior in science was the only reason that he had not received a long-term suspension it was felt that removing the treatment could impede Matt's successful completion of the academic year. This ethical consideration suggested uninterrupted treatment rather than proving the efficacy of the program and risking an expulsion from school.

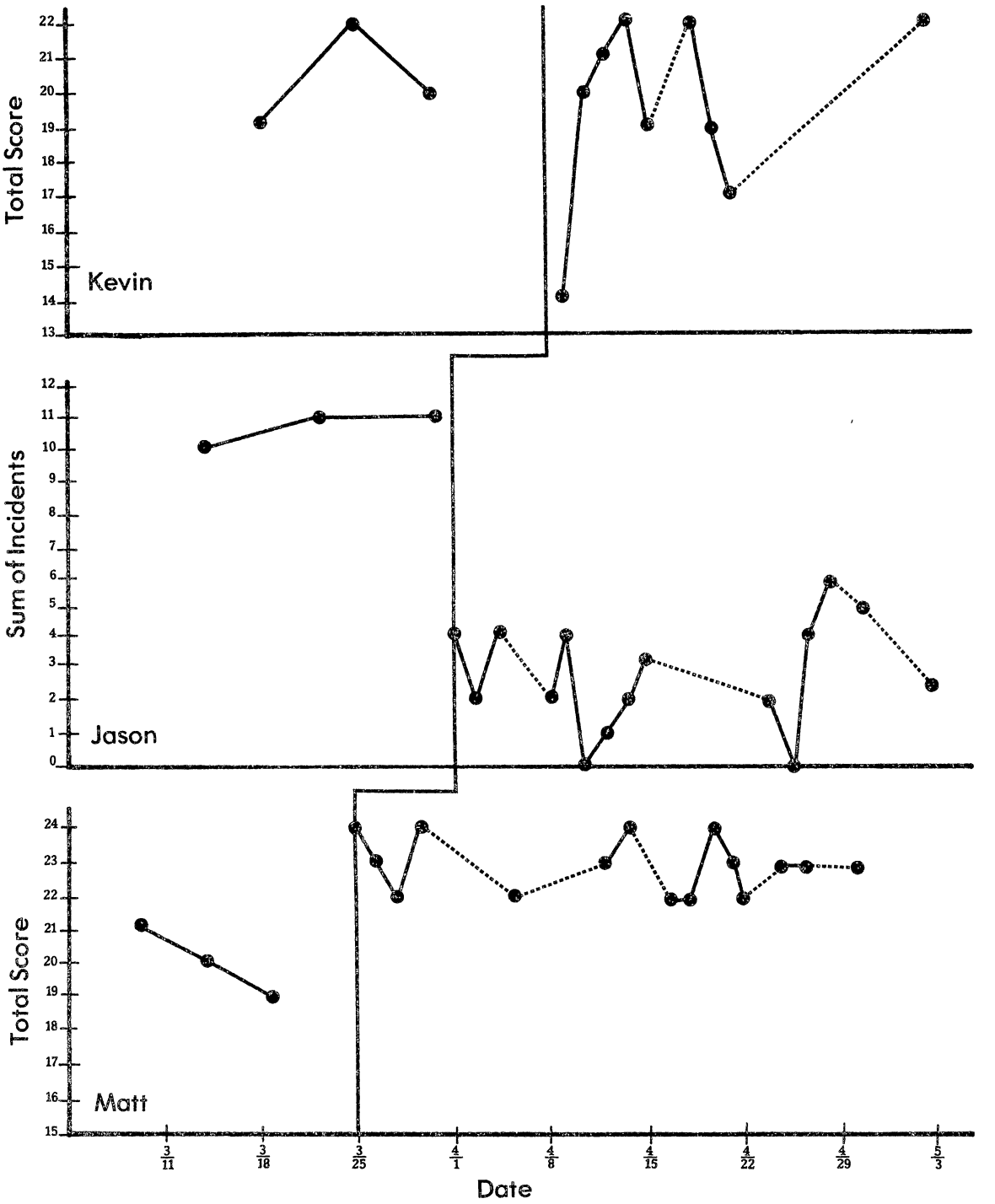

Figure 1. Display of Results

CASE #2 - KEVIN

Background

Kevin had been the subject of behavioral consultation processes at three years of age with the Mental Health Center in St. Cloud, Minnesota. Kevin and his mother underwent mutual counseling when Kevin was six. The family's history was marked by a divorce when Kevin was very young with the natural father showing little interest in Kevin as he grew older. The boy apparently had some difficulty in coming to terms with his father's behavior. The father's rejection coupled with the mother's admitted inability to consistently discipline were felt by the therapist to be contributing factors in Kevin's continued inappropriate behaviors. Kevin's stepfather may have unwittingly added to the confusion by not legally adopting Kevin. Additionally, it was noted that Kevin had voiced suicide threats; although the therapist at the time felt that Kevin actually had no intention of harming himself.

Kevin's school history contained many incidents that led to staffings and intervention sessions usually attended by the classroom teacher, principal, social worker and occassionally his mother. Specific areas of concern about Kevin included his anger, sorrow, defiance and disorganization. These behaviors tended to manifest themselves in less structured independent settings on what was felt to be an all too frequent basis. It was felt that Kevin had at least

average intelligence with no indication of any learning disability. It was also noted that the mother's attitude regarding the school's concerns had turned negative to the point that she responded with hostility to proposed changes in Kevin's education and attended fewer of the meetings regarding Kevin's misbehavior.

Prebaseline Procedures

The investigator observed Kevin's physical education class for two sessions prior to documenting any baseline data. The investigator felt that Kevin possessed appropriate behaviors but was not choosing to emit them with any regularity in physical education. Kevin's problem behaviors appeared to be triggered by interactions with other students. All earned reward sessions would be conducted away from other students. Therefore, the investigator believed that Kevin might respond to recreational activities as rewards in the behavior management program.

The investigator felt that Kevin's inappropriate conduct in physical education was largely comprised of three separate behaviors.

1. Talking out. Operationally defined as talking when the teacher was talking or loud inappropriate comments directed toward other students.

2. Off-Task Behavior. Operationally defined as any behavior not needed to pursue the class activity.

3. Inappropriate actions. Any uncalled for action or any gesture or movement that is directed toward another student.

Baseline Procedures

Collection of baseline data began on March 11, 1985. Each physical education class began with a warmup period that consisted of stretching and running done to music. This was typically followed by an introduction or review of a skill. The remainder of the class period was spent engaged in a game or activity related to the skill previously introduced or reviewed. The investigator sat on the stage in the gymnasium and did not communicate with any of the class members. Care was taken not to be noticed watching the subject. Baseline data was collected by the investigator through March 29, 1985.

The investigator felt that Kevin's behaviors must be recorded as discrete events. The noxious events were rarely prolonged; the teacher usually intervened with a command or by calling his name. Kevin's behaviors were for the most part short, but nonetheless inappropriate. The policy for behavior collection was that an occurrence of a negative behavior was a discrete event, even if other behaviors under investigation occurred. That is to say, yelling an insult and immediately thereafter pushing another student would be recorded as one talking out episode, as that behavior (talking out) precipatated the second behavior.

During the last week of baseline collection, the investigator contacted an undergraduate student at Saint Cloud State University who was pursuing a major in adapted physical education. The student had been recommended by her advisor as a possible candidate for being a data assistant for the investigator. She had been recommended as a good student and a person who was very dependable. A meeting was arranged and the student expressed interest in data collection for the experiment. The investigator provided the student with a copy of the operational definitions of Kevin's behavior and an explanation of the recording of discrete events. Some time was spent in explaining the definitions to insure accuracy. The student was instructed not to interact with the class members. On the first day she was to introduce herself to the teacher, explain her purpose and have the teacher unobtrusively identify Kevin. The student was given directions to the school and money to cover expenses. The undergraduate was to begin data collection on the following Monday, April 1.

The investigator felt that reducing the frequency of misbehaviors to a level of two apiece for each of the three behaviors was a desirable goal for the program. The classes' behavior as a whole was not exemplary and to request total extinction of behaviors by Kevin was felt to be an unrealistic expectation given the amount of stimuli present at any given time. The reward program was designed so that each day Kevin brought each of his problem behaviors

down to a level of two or less, a point would be earned. When Kevin had earned five points, the investigator would come to the school and allow Kevin to have one-half hour of free time in the gymnasium. Kevin's classroom teacher had specified that 9:00 to 9:30 A.M. was the best period to remove Kevin from the class as he would miss the least amount of academic time.

Treatment. Before Kevin's physical education class met on April first, the investigator met with Kevin. It was explained that a program had been set up to allow him to earn free time in the gym as a reward for changing behaviors in physical education. He then asked Kevin to name his favorite interests in physical education class. (See Appendix B) Kevin then chose his four most-desired activities to be used for rewards and entered them in the Reward List on the bottom of that same page. The investigator then explained that he had been observing Kevin's class and thought Kevin had some habits that might be improved upon. After some prodding, Kevin suggested that his talking could be reduced. The investigator asked if that meant talking when the teacher was talking or shouting out loud.

The investigator asked Kevin if he had any other behaviors that could be changed. Kevin said that he sometimes "goofed off." The investigator commended Kevin for his honesty and asked if that meant not strictly participating in the activity. Kevin reiterrated that his "goofing off"

was a problem. The investigator asked if Kevin could change that behavior and Kevin agreed. The investigator then asked Kevin if he thought he could refrain from gestures or touching other students during class. Kevin said that he probably could. The investigator then explained the reward system. He also told Kevin that a female college student would be keeping track of his behaviors and that Kevin was not to talk to her. She would inform the investigator and then he would arrive when the point total reached five. Kevin would then select a reward from his Reward List. The investigator was aware that Kevin's school district would not be in session the following Thursday or Friday. He told Kevin that points would be given as "freebies" for those two days. All Kevin had to do was to earn a point each day for Monday, Tuesday and Wednesday.

The investigator allowed the data assistant to chart Kevin's behavior by herself the first day. The investigator arrived on the second day to chart Kevin's behaviors for comparison to the data assistant's data collection. The investigator sat approximately ten yards away and there was no communication between the two raters. The results were the same for each evaluator. The data assistant verbally reviewed each incident that was recorded. The investigator had noticed and marked the identical actions. It was felt that a suitable degree of inter-rater reliability was evidenced.

Kevin managed his behavior so that he was eligible for a reward on April 8 after the first week of the program. The investigator allowed Kevin to choose an activity and table tennis was selected. As Kevin's ability was low, the investigator suggested that no score be kept. Conversation ranged from television shows to the past weekend's activities. A discussion was initiated by the investigator about behaving appropriately in physical education. Kevin did not share much during this discussion. He apparently enjoyed the experience as he said he would try to earn another one.

Kevin earned a second reward on April 15. This was the earliest date possible and he chose floor hockey as an activity. Later in the session Kevin asked if badminton could be played. The investigator agreed and Kevin displayed great aptitude for the sport. Some discussion was initiated by the investigator concerning Kevin's success with the program. Praise was given by the investigator but Kevin did not seem to accept it comfortably.

The investigator shared with the principal the incidents during the two reward sessions. The principal was happy that Kevin had changed behaviors and earned rewards.

Kevin's teacher cancelled physical education class Tuesday through Friday of that week. The investigator received that report from the data taker and decided to give Kevin a positive in the guise of "freebies" for those missed days. It was felt that some additional time spent developing a friendship should not be delayed as a result of the

teacher's cancellation of class. Hopefully, the additional reward time would be reinforcing enough to convince Kevin to correct his behaviors when class was held. Kevin's behavior was sufficient to earn the third reward session was held on April 22. Kevin appreciated the "freebies" and chose to play badminton and hockey again.

It should be noted here, that Kevin had a score near the unacceptable level on April 25th and April 26. The data assistant reported that a student teacher was given the responsibility of conducting physical education class on that day. She had been trained as an elementary classroom teacher and had very little training in physical education. The data assistant went on to mention that in her opinion the whole class was misbehaving. The regular teacher had left the area with the students then exhibiting typical substitute teacher misbehavior. Given that the potential for exhibiting poor behaviors was exceedingly high, it was commendable that Kevin earned points for controlling his identified behaviors.

Kevin earned a fourth reward session that was conducted on April 29th. Kevin asked to play tennis. Although that was not listed on the original interest sheet, the investigator felt that Kevin's performance under the program's guidelines was meritorious and deserving of any reward that would fit within the loose parameters of the system. Kevin's high level of badminton skills transferred successfully to tennis.

Discussion of Case, Kevin. Kevin reduced the frequency of all three behaviors suggested by the investigator as evidenced in Figure 1. His teacher reported that she was pleased with Kevin's performance since the implementation of the program. The data assistant felt that Kevin was frequently the best behaved student in the class and often restrained himself from joining in the confusion and subsequent bad behavior around him. The investigator refrained from mentioning anything about Kevin's behavior in the baseline phase to the data assistant. However, she apparently assumed that Kevin's behavior was under investigation for being undesirable.

Kevin responded immediately to treatment and reduced all behaviors to preset levels by the investigator. Kevin earned rewards just as quickly as possible under the constraints of the system. An improved research design would include a removal of the treatment; essentially setting up an ABAB research design. It was felt by the investigator that removal of treatment was not an ethical procedure given Kevin's history of rejection by his father. The emotional/behavioral resource person (who made the referral) felt that Kevin might benefit from adult-male time. The investigator believed that exiting and re-entering Kevin's life after Kevin exhibited appropriate behavior under the program's constraints was not ethically acceptable and could set Kevin up for an unsuccessful end to the academic year. As a result the program was left in place.

CASE #3 - JASON

Background

Jason was a 12-year-old seventh-grade student. He attended the Area Learning Center (ALC) and was a classmate of subject #1; Matt. He had been removed from Tech Junior High School, his home-area school. He had been dismissed for major behavioral problems including hyperactivity, impulsiveness, immaturity and inappropriate attention-seeking incidents. He had been taking medication for hyperactivity.

One faculty member at Tech characterized Jason as "Mr. Pest, USA." It was felt that his small physical stature and his visible Native-American heritage may have played a part in his being teased by peers; in all probability compounding his behavioral problems. Jason was adopted by Caucasian foster parents. It was also noted that Jason had few friends and tended to be a loner. His scores on the Woodcock-Johnson Psychoeducational Battery showed that his ability was above average for his age. When removed from Tech he was failing two classes.

Jason was enrolled at the ALC on February 20th, 1985 and was considered to be at "significant risk." That term was used to indicate that concern for a probable lack of success was paramount among special education personnel. His scores on the ALC's behavior rating program led the social worker to suggest that Jason might benefit from participation in the investigator's treatment program. The

investigator and the social worker determined that Jason's lowest scores were in the "work" category in social, science and language classes. It should be noted that other behaviors were noted as needing remediation, but it was felt that improving the amount of work completed was a more desirable goal than any other. It was also felt that improvement in three different classes might foster improved relations with three separate instructors.

Baseline and Treatment

Data collection began on March 18th, 1985. On March 21st, Jason was written up on a misconduct form for throwing objects around the room and swearing. On March 28th, a team staffing report noted that Jason did not come home after school the previous day. He was placed in school suspension and had left the building. He was evaluated as a compulsive liar. Staff members were instructed not to trust him and to keep him under close supervision ot all times. A personality evaluation by a school psychologist was recommended. The social worker was to follow up the evaluation with counseling for Jason. Also on March 28th, Jason was given a misconduct notice for misbehavior and not working in classes.

On March 29th, Jason was reported as being insubordinate to teachers. He was reported later that day as fooling around, talking out and not working in classes. He also had an obscene magazine in class and made vulgar com-

ments to a teacher. On April fourth Jason refused to study for a test. He also disrupted a class by swearing, banging a chair and again refusing to work. He finally kicked a chair across the classroom.

The treatment was initiated on April eighth. The social worker introduced the investigator to Jason explaining that the investigator had been a teacher at a school similar to the ALC. The investigator and Jason left the social worker's office for a less threatening area of the building. The investigator explained that a program had been developed in Duluth, Minnesota to assist students in changing behaviors. The investigator suggested that Jason could earn recreational rewards if he could increase the amount of work finished in his science, social and language classes. Jason was then asked to complete the Recreational Interest Survey. (See Appendix C) He then selected the six most desirable activities from the survey and entered them into the Reward Menu. He then ranked his top four choices in order of desirability. The most desirable activity was entered into the line on the right-hand side of the Reward Menu that required the greatest number of points. Each successive choice was entered into the next lower line, labelled with successively fewer point totals. It was explained to Jason that a score of seven in the "work" category in science, social or language class would be worth one point. A score of eight would be worth one and one-half points and a score of nine would be worth two points. Ac-

cumulated points could be used to buy lower-cost rewards or saved for more expensive rewards. Points could never be taken away for poor behavior. However, poor behavior would not earn any points and delay rewards.

It was also explained that points used to purchase an activity were used up. Points left over after the purchase would be saved and remain in the student's possession. Jason said that he believed he could improve his work some of the time but not all of the time. The investigator suggested that better communication with the teacher might assist Jason in understanding how much work was expected of him. The investigator also told Jason that the investigator would be coming to the ALC whenever it was possible to check on Jason's point totals and schedule reward sessions. The investigator cautioned Jason that it might be unwise to inform other students about the program as they might try to bother Jason and interfere with points being earned.

Jason received two misconducts on April ninth for talking about drinking, chemical abuse and threatening to kill himself. He also pretended that his fingers formed a gun and pretended to shoot a teacher. On March 10th he called a female student a wench and pushed her books onto the floor. A team staffing report of March 11th reported that Jason had sworn in science class and refused to leave when told. He had been late to school for two days and had left a note in a class stating he would kill himself. The

school psychologist reported that an evaluation on Jason was underway.

Jason swore at another student and pushed him off of a set of stairs on April 15th. On April 18th Jason was cited for being off-task, and talking inappropriately regarding partying. A team staffing report chronicled running in the halls, not doing well in math or science, being late, doing nothing and lying. The psychologist reported that Jason was emotionally unstable, angry and cannot accept life. He is considered likely to run away and a strong recommendation was made for further evaluation. The investigator noticed that in spite of all his other problems Jason had earned sufficient points for a reward session. The social worker suggested that if Jason's behavior was good prior to leaving school for the reward that Jason be allowed to go. The next day's behavior was satisfactory and Jason went bowling. The investigator praised Jason for earning points and suggested that better behavior in all school areas might allow the rest of the academic year to pass more quickly. Jason was receptive and pledged to work harder at controlling inappropriate behavior. Upon returning to school he was caught in the hall without permission by a staff member and given a misconduct notice.

On April 22nd, Jason was caught kicking another student. He had also yelled in the hall calling a female student a vulgar term and identifying her by name. Jason evidenced inappropriate behaviors on April 23rd in four

separate occassions. He took another student's sunglasses, was verbally hostile to a teacher, was disrupting a class by swearing and punched, kicked and hit another student in the eye by throwing a magazine. On April 25th he knocked a student's hat off and later threatened the same student. In spite of these incidents Jason earned enough points to obtain a reward sesson on April 29th. Jason used his points for fishing and caught a two pound walleyed pike. The reward session went well and included some discussion of future reward sessions. The investigator praised Jason's efforts in obtaining the desired scores and mentioned that faster accumulation of points would hasten further reward sessions.

Discussion of Case, Jason. As evidenced by the results graphed in Figure 1, Jason did not choose to remediate all behaviors to the level deemed acceptable by the investigator and social worker. However, some exceptional circumstances occurred simultaneously with treatment. A very close relative of Jason's died immediately prior to the initiation of treatment. This apparently was devastating to Jason as it triggered enough undesirable behaviors to culminate with a staff recommendation for psychiatric evaluation on an in-patient basis. His grief over the death was compounded when his parents refused to let Jason accompany them to the funeral. Jason was unmanageable in class and around peers as evidenced by entries in the baseline text.

It should be noted that Jason's behavior with the investigator during reward sessions was good and that any underlying tensions were not apparent. He responded well in conversations regarding behavior. It should also be noted that he had a reputation as a liar and manipulator. The investigator felt that Jason possessed appropriate behaviors but due to extenuating circumstances that severely taxed his coping abilities, surrounding stimuli elicited noxious behavior that Jason might normally have chosen to suppress.

Given the extraneous circumstances surrounding Jason's treatment, the investigator and social worker felt that Jason was responding to the program in a fairly positive manner. In light of all his misconduct scores in classes not under treatment and staff comments, Jason's behaviors appeared somewhat better in the treatment classes than in the non-treatment classes.

During a meeting to discuss the treatment program, the director of the ALC asked the investigator if he would consent to see Jason on a twice a week basis, irrespective of the behavior scores. The director felt that the program was successful in that Jason had semiacceptable behavior in some classes as a result of the treatment. The director felt the program's tenets of recreational time away from the building coupled with discussions regarding self-awareness of stimuli and behavior were beneficial to Jason. The director felt that those sessions should be increased in regularity to increase Jason's chances of success at the center.

CHAPTER V

SUMMARY, FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

In the preceeding chapters the problem was introduced, the related literature was reviewed, the procedures were discussed and the data was presented. This chapter includes a summary of the study, the findings derived from an analysis of the data collected, conclusions and recommendations for further study.

Summary

Students' chronic behavioral problems interfere with performance in school. The purpose of this study was to test a program of behavior management using recreational activities as rewards with behavioral problem students.

The investigator was given referrals on three students exhibiting behavioral disorders. Two students were behaving inappropriately in special education academic settings and the other was a behavioral problem in a traditional physical education class. A multiple baseline across individuals design was employed in the treatment phase. A multiple-probe design was used to record frequency of behaviors of each student during the baseline phase.

Each introduction of the treatment phase began with the investigator meeting with each student on an individual basis. Each student was allowed to select four recreational activities from a master list. Each of the four activities was entered into a reward menu.

A cost was assigned to each activity on the menu. The reward costs escalated; with the most desirable reward having the highest cost.

Each student was then told that he could earn points to purchase the rewards by displaying appropriate behaviors in his particular problem class(es). Points could be spent more often for lower cost rewards or saved for higher cost rewards. This allowed each student to determine his own schedule of reinforcement.

Each treatment was initiated separately, while each other subjects' behaviors evidenced stability of response. The data showed evidence of treatment success at five out of a possible six points of reference. It was felt that subjects one and two remediated their behavior to desired levels. Subject three's behaviors were kept near baseline levels. As a result of incidents occurring simultaneously with subject three's treatment, the investigator and staff felt that keeping behaviors at or near baseline levels could be considered a qualified success.

Findings

The data collected in this study was analyzed and yielded the following findings:

1. Subjects one and two remediated their inappropriate behaviors to desired levels mutually designed by the investigator, special education personnel and classroom teachers.

2. Subject three did not remediate inappropriate behaviors to desired levels, but the investigator, special education personnel and classroom teachers felt that the subject benefited positively from the treatment.

Conclusion

Based upon the findings and limitations of this study, it was concluded that students with behavioral problems similar to those of this investigation's subjects may self-remediate problem behaviors in exchange for points used to purchase recreational activities for rewards.

Recommendations

The results of this study suggests the following recommendation for further study:

1. Replications of this study should be conducted with a wider range of inappropriate behaviors.

2. Replications of this study should be designed and conducted across other academic and institutional settings.

3. Replications of this study should be conducted with other therapists to factor out the effect of a particular investigator/therapist.

4. Replications of this study should be carried out with subjects of various age group/sex combinations to increase the generalizability of results.

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APPENDIXES

APPENDIX A

MATT

Client MATT

Behavior #1 - ATTITUDE

Behavior #2 - WORK

Behavior #3 - LANGUAGE

Behavior #4 -

		Monday		Tuesday		Wednesday		Thursday		Friday	
WEEK #1	#1										
	#2										
	#3										
	#4										
WEEK #2	#1										
	#2										
	#3										
	#4										

Behavior Frequency Chart

NAME Matt

	HIGH INTEREST 1	SOME INTEREST 2	NO INTEREST 3	WOULD YOU LIKE TO TRY THIS ACTIVITY ?	HAVE TRIED THIS ACTIVITY BEFORE ?
SHOOTING BASKETS		x		No	Yes
LIFTING WEIGHTS		x		Yes	No
TENNIS			x	No	Yes
RACKETBALL		x		Yes	No
FISHING	x			Yes	Yes
CANOEING		x		Yes	Yes
HIKING			x	No	No
ARCHERY	x			Yes	Yes
RIFLERY (BB GUN)		x		No	Yes
BOWLING	x			Yes	Yes
FRISBEE			x	No	Yes
BADMINTON	x			Yes	Yes
JOGGING	x			No	Yes

RECREATION INTEREST SURVEY

NAME Matt

Riflery

Archery

Fishing

Shooting Baskets

Badminton

Hiking

1.) Riflery 24 pts.

2.) Archery 18 pts.

3.) Fishing 12 pts.

4.) Shooting Baskets 6 pts.

REWARD MENU

DAILY BEHAVIOR SHEET
USAP/WE/CEP PROGRAM
Area Learning Center
District 742 Community Schools
251-4963

Student's Name_____ Date_____

This daily rating sheet is to be completed by each of your teachers - the numbers are identical to those on the regular form that teachers use each week to determine eligibility for breaks and honor roll. The purpose in havign you use this sheet each day is to give you and your parent(s) information about your daily performance.

	C	L	A	W	P		A
1. Social							
2. Math							
3. Lang.							
4. Science							
5. Health							
6. Phy Ed							
7.							

Numerical Ratings

1. Refusal
2. Disruptive|unacceptable behavior
3. Acting
4. Needs and accepts correction
5. Needs constand reminders
6. Borderline testing
7. Average (minimal)
8. Above average
9. Adult (ultimate)

C Conflict L Language A Attitude W Work P Promptness A Average

Staff are encouraged to cite specific examples of behaviors rated above and/or below 7. Make up work or specific assignments for tomorrow are listed after the subject area.

1. Social - Steve Donabauer _____
2. Math - Nancy Huber _____
3. Language - Mary Michaud _____
4. Science - Bill Ness _____
5. Health - Doug Bronson/Bonnie Schwinghammer_____
6. Phy Ed - Dave Olsen _____
7. Elective - _____

Parent and/or student reactions/comments to ratings and/or examples:

This Sheet is to brought home to be signed by a parent and returned to your homeroom teacher the following school day.

Parent's Signature_____ Date_____

DAILY BEHAVIOR SHEET

APPENDIX B

KEVIN

Client Kevin

Behavior #1 - TALING OUT

Behavior #2 - OFF TASK

Behavior #3 - INNAPPROPRIATE ACTIONS

Behavior #4 -

		Monday	ttl.	Tuesday	ttl.	Wednesday	ttl.	Thursday	ttl.	Friday	ttl.
WEEK #1	#1										
	#2										
	#3										
	#4										
WEEK #2	#1										
	#2										
	#3										
	#4										

Behavior Frequency Chart

NAME KEVIN

INTERESTS

1. HOCKEY
2. ARCHERY
3. BASEBALL
4. BADMINTON
5. PING-PONG
6. KICKBALL
7. FRISBEE
8. SOFTBALL
9. VOLLEYBALL
10. FOOTBALL
11. SHOOTING BASKETS
12. SHUFFLEBOARD

SELECTED REWARDS

1.) HOCKEY

2.) PING-PONG

3.) TABLE TENNIS

4.) SHUFFLEBOARD

APPENDIX C

JASON

Client JASON

Behavior #1 - WORK: SOCIAL STUDIES

Behavior #2 - WORK: SCIENCE

Behavior #3 - WORK: LANGUAGE

Behavior #4 -

		Monday		Tuesday		Wednesday		Thursday		Friday	
WEEK #1	#1										
	#2										
	#3										
	#4										
WEEK #2	#1										
	#2										
	#3										
	#4										

Behavior Frequency Chart

NAME Jason

	HIGH INTEREST 1	SOME INTEREST 2	NO INTEREST 3	WOULD YOU LIKE TO TRY THIS ACTIVITY ?	HAVE TRIED THIS ACTIVITY BEFORE ?
SHOOTING BASKETS		x		No	Yes
LIFTING WEIGHTS		x		Yes	No
TENNIS			x	No	Yes
RACKETBALL		x		Yes	No
FISHING	x			Yes	Yes
CANOEING		x		Yes	Yes
HIKING			x	No	No
ARCHERY	x			Yes	Yes
RIFLERY (BB GUN)		x		No	Yes
BOWLING	x			Yes	Yes
FRISBEE			x	No	Yes
BADMINTON	x			Yes	Yes
JOGGING	x			No	Yes

RECREATION INTEREST SURVEY

NAME Jason

Fishing		
Bowling	1.) Riflery (BB Gun)	24 pts.
Lifting Weights	2.) Lifting Weights	18 pts.
Riflery (BB Gun)	3.) Bowling	12 pts.
Archery	4.) Fishing	6 pts.
Racketball		

REWARD MENU

DAILY BEHAVIOR SHEET
USAP/WE/CEP PROGRAM
Area Learning Center
District 742 Community Schools
251-4963

Student's Name_____ Date_____

This daily rating sheet is to be completed by each of your teachers - the numbers are identical to those on the regular form that teachers use each week to determine eligibility for breaks and honor roll. The purpose in havign you use this sheet each day is to give you and your parent(s) information about your daily performance.

	C	L	A	W	P		A
1. Social							
2. Math							
3. Lang.							
4. Science							
5. Health							
6. Phy Ed							
7.							

Numerical Ratings

1. Refusal
2. Disruptive|unacceptable behavior
3. Acting
4. Needs and accepts correction
5. Needs constand reminders
6. Borderline testing
7. Average (minimal)
8. Above average
9. Adult (ultimate)

C Conflict L Language A Attitude W Work P Promptness A Average

Staff are encouraged to cite specific examples of behaviors rated above and/or below 7. Make up work or specific assignments for tomorrow are listed after the subject area.

1. Social - Steve Donabauer _____
2. Math - Nancy Huber _____
3. Language - Mary Michaud _____
4. Science - Bill Ness _____
5. Health - Doug Bronson/Bonnie Schwinghammer_____
6. Phy Ed - Dave Olsen _____
7. Elective - _____

Parent and/or student reactions/comments to ratings and/or examples:

This Sheet is to brought home to be signed by a parent and returned to your homeroom teacher the following school day.

Parent's Signature_____ Date_____

DAILY BEHAVIOR SHEET

VITA 2

Bruce Harwood Miles

Candidate for the Degree of

Doctor of Education

Thesis: EFFECTS OF A BEHAVIORAL MANAGEMENT PROGRAM USING RECREATIONAL ACTIVITIES AS REWARDS ON BEHAVIORAL PROBLEM STUDENTS

Major Field: Higher Education

Minor Field: Health, Physical Education and Recreation

Biographical:

Personal Data: Born in Grand Rapids, Michigan, May 27, 1955, the son of Robert E. and Norma A. Miles.

Education: Graduated from Abraham Lincoln Senior High School, Bloomington, Minnesota in June, 1973; received Bachelor of Arts degree in Physical Education from University of Minnesota-Duluth in June, 1978; enrolled in doctoral program at Oklahoma State University, 1982-1985; received Master of Science degree in Physical Education from Oklahoma State University in May, 1984; completed requirements for Doctor of Education degree at Oklahoma State University in July, 1985.

Professional Experience: Special Education Assistant, Duluth, Minnesota Public Schools, 1978-1979; Adapted/Elementary Physical Education Instructor and Coach, Cloquet, Minnesota Public Schools, 1979-1981; Recreation Therapist for Emotionally Disturbed Adolescents, Duluth, Minnesota Public Schoools, 1981-1982; Graduate Research Assistant, Oklahoma State University, 1982-1983; Graduate Teaching Assistant, Oklahoma State University, 1983-1984; Adapted Physical Education Coordinator, Benton-Stearns Special Education Cooperative, St. Cloud, Minnesota, 1984-1985.

Professional Organizations: Former member of Oklahoma Association for Health, Physical Education, Recreation and Dance, 1982-1984; member of American Alliance of Health, Physical Education, Recreation and Dance, 1982-1985; member of Research Consortium, 1985; Board of Directors, Minnesota State Special Olympics, 1985.