THE EFFECTS OF CLASSROOM INSTRUCTION IN BEHAVIORAL PRINCIPLES
UPON STUDENT TARDINESS BEHAVIOR

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
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By

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** ** ** **

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INTRODUCTION

There is an increasing interest in applied behavioral analysis in the behavioral sciences, as evidenced by the rapidly expanding body of literature in this area. Examples of this literature are: 1) Journals, such as the Journal of Applied Behavior Analysis and the Journal of Applied Behavioral Science; 2) Books dealing with behavior analysis and modification, by authors such as Hall (1971) and Becker (1971); and 3) A vast array of reported behavioral research.

Educators are becoming particularly interested in the application of principles of behavior in the clinic and classroom with an applied analysis of social and academic skills.
CHAPTER I

REVIEW OF THE LITERATURE

The purpose of the review of literature is: 1) To provide a rationale for the application of principles of behavior, by reviewing research concerned with the experimental analysis of behavior. 2) To review studies that report change of behavior when subjects have administered their own treatment programs while under indirect supervision of someone knowledgeable in behavioral science. 3) To provide a rationale for classroom instruction in behavioral techniques and their application.

Rationale for the Use of Behavioral Techniques

The literature reviewed was selected to demonstrate effectiveness of various types of behavioral techniques in changing student's behavior. These studies represent a cross section of behavioral techniques which have been successful, such as verbal and material reinforcement, shaping, peer reinforcement, and modeling or imitation. Only a very limited sample of studies was presented in this review.

O'Leary and Becker (1969) reported that praising appropriate behavior and ignoring disruptive behavior reduced the student's average disruptive time from 54 to 32 per cent. Chadwick and Day (1970), also made contributions to this area. Their use of material incentives concurrently with other types incentive, demonstrated improvement in
both social behavior and academic performance of students with severe behavior problems.

Zimmerman and Zimmerman (1962) decelerated unproductive classroom behavior in two emotionally disturbed boys by removing attention and other reinforcements as consequences of behavior considered undesirable. Only adequate behavior with respect to social and scholastic adjustment was acquisitioned and maintained with social reinforcers.

In a study directed by Schwitzgebel (1965), thirty-five male adolescent delinquents were informally recruited from street corners to participate in a series of tape recorded interviews. Experimental subjects were differentially reinforced for hostile statements, positive statements, prompt arrival at work, and general employability during the course of twenty interviews.

Schwitzgebel's general conclusion was that certain typical behaviors of delinquents are alterable by contingent application of reinforcement. The fact that prompt attendance at interviews could be obtained among selected nonincarcerated delinquents is felt to have rather broad therapeutic implications, for changing delinquent behavior through the contingent application of reinforcement.

Peer reinforcement was manipulated to change individual student's behavior in a study by Schmidt and Ulrich (1969). They employed a sound level meter and a kitchen timer to monitor the intensity and duration of noise in the classroom. Recess time
was earned by students by maintaining a noise level below 42
decibels for the length of time pre set on the timer. Peer
consequences such as threatening gestures, facial expressions,
and arm moving were directed at the more noisy class members,
according to the authors.

In a similar experiment, Packard (1970) used a Cramer
1/100-second timer to control attending behavior of kinder-
garten, third fifth, and sixth grade classrooms in a small
rural school. The timer was started only when all students
attended to their learning activities. Therefore, all stud-
ents earned rewards based upon the amount of time recorded
when all students were attending. A red light on the timer
visually indicated that good behavior time was being recorded.

Packard found that adding group contingencies (conting-
gencies dependent upon the attention of every student in the
class) and token reinforcement to class achievement of a
gradually increasing attention criterion, raised group mea-
ures to a 70 to 85 per cent level of time attending to task
as instructed, and raised individual measures to a stable
90 to 100 per cent level. This study illustrates how teachers
can use peer influence to maximize the attending behavior of
the class as a whole.

Modeling (often called imitation) of desired behavior was
used in an experiment conducted by McMains (1969). Third and
fourth grade children in summer camp were told to reward them-

selves for achieving a performance standard. Without their
knowledge, their behavior was recorded while playing a bowling game. Some children were given verbal instructions before they played the game as to the score they should earn before they helped themselves to tokens exchangeable for toys. Another group of children observed an adult play the game and reward himself. A third group was given both verbal and modeled conditions, and a fourth group was given neither. The combined verbalization-model condition produced higher standards for self-reward than any other group. Verbalization and modeling had about equal effects, and both produced greater performance increments than the fourth group (control condition).

A similar study was done by Bandura and Perloff (1967), using lower level elementary children from a lower middle-class area. They either set the standard required for reinforcement for a subject, or allowed him to set it for himself. Subjects either reinforced themselves, or were reinforced by machines, and control received either noncontingent rewards or none.

An unexpected finding was that children imposed such high standards on themselves that their work-to-reinforcement ratio was extremely unfavorable. The results also indicated that self-monitored and externally applied reinforcement were about equal in sustaining voluntary responses, and both were superior to control conditions.

The effects of self-recording on the classroom behavior of two eighth grade students were investigated in two related studies by Broden, Hall, and Mitts (1971). The study behavior of an eighth grade girl was the focus of the first experiment. Following
baseline observations, she was provided slips to record whether or not she studied in class. This resulted in an increase in study. Slips were later withdrawn, and study decreased; however, it increased again once self-recording was reinstated. Self-recording was discontinued without significant losses in study behavior, after teacher praise for study was increased. Increased praise was withdrawn in the final phase, and study remained at a high level.

In the second study, the frequency of talk-outs by an eighth grade boy were recorded during math period. Following baseline observation, slips for recording talk-outs were issued for the first half of the period, for the second half, and then for the entire period. The talk-outs decreased while self-recording was in effect, and increased again when self-recording was discontinued. When self-recording was reinstated in the final phase, there was a slight but not significant decrease in talking out behavior, when compared to the Baseline2 condition.

These two studies indicate that self-recording procedures were sufficient to modify behaviors of pupils in secondary level public school classrooms.

Perhaps a very promising feature of self-recording of behavior will be its use as a procedure for initiating desirable levels of appropriate behavior to a point which can be easily reinforced by the teacher or by the student himself.

Subjects were permitted to set their own goals in a study by Kennedy (1968). Arithmetic performance was used as a criterion in
comparing third and fourth graders from a low socio-economic area, after one group was told to set their goals for a week, and the two other groups were given goals by the teacher, told to do their best, or given no goal setting instructions. Those students who were given specific goals by the teacher, and those who set their own goals, did better than students only told to do their best.

A study by Lovitt and Curtis (1969) tested the performance consequences of contracts in which reward contingencies were specified by the student as compared to contracts where the teacher specified reward contingencies.

The subject was a 12-year-old from a class for children with behavior disorders. He earned points for work satisfactorily completed in all academic areas, which could be exchanged for time in a "high interest" room, containing many activities desired and valued by the subject. The results indicated that more satisfactory work was performed when the student specified contingencies, than when they were specified by the teacher.

Although the student generally rewarded himself at a higher rate than the teacher usually did, even when the teacher specified reward contingencies as high as the students, the rate of performance was not as high as it had been under the student-specified contingencies.

Several of the preceding studies have had direct subject manipulation of variables leading to an improvement in a behavioral or academic performance or to the maintenance of a voluntary response. This type of subject involvement in manipulating variables
to a direct change in the subject's behavior or academic performance, logically leads to the next area of literature in this review. Most of the research in the following section consists of studies where subjects have played a major part in changing their own behavior, through self-administered behavioral change programs.

**Subject control of the behavioral change treatment**

Goldiamond (1965) presented a rationale for the use of a self-control procedures in counseling, citing illustrative material from several case studies. Self-control, as defined in these case studies, involved specification of the behavioral deficit or desired behaviors which were lacking, and having the subject himself set up or program the conditions which might produce the desired behavior modification. The procedures selected were extensions from laboratory research in operant modification of behavior, and the counseling sessions included training the subject in behavior analysis, using his own behaviors as the experimental data.

Migler and Wolpe (1967) reported a case study in which the patient administered automated desensitization treatment to himself through the use of a tape recorder, using his own voice. Following this self-administered desensitization, the patient was able to overcome a fear of attending important staff meetings at his office, caused by his fear of public speaking.

An important aspect of this case report is the successful treatment of a phobia by the patient himself, allowing him to behave in a desired manner, which the phobia had previously prevented.
These results have the implication that patients can be instructed to carry out their own treatment (leading to a behavioral change), under the indirect supervision of an individual competent in the treatment's administration.

A study by Winter, Griffith, and Kolb (1968) dealt with the attainment of self-directed behavior-change goals. A content analysis of self-descriptive essays written by students who were subsequently successful and unsuccessful in attaining self-directed behavior-change goals revealed the following: 1) Low change subjects more frequently described themselves with little recognition of alternative possibilities; 2) Low-change subjects showed more tenativeness and uncertainty about themselves; and 3) High-change subjects more frequently stated goals with implicit recognition that the goal had not yet been attained.

The results suggest that successful self-directed change is motivated by awareness of the cognitive dissonance created when an individual commits himself to a valued goal that he sees as different from his present behavior.

Kolb, Winter, and Berlew (1968) gave business-school students the responsibility for diagnosing their own problems, setting their own goals, and accomplishing change by their own efforts. The students used this method to change themselves as part of their participation in self-analytic groups. Two factors were found which predicted their success in changing. Change was found to be related to the individual's commitment to his change goal, as well
as to the amount of feedback he received from other group members. Improving the change method in order to increase goal commitment and feedback, increased the percentage of students who were successfully attaining their goals from 5 to 61 per cent.

Rationale for classroom instruction in behavioral techniques

Studies reported in the first part of this review demonstrated effects of behavioral techniques such as verbal and peer reinforcement and modeling, in generating behavioral changes. In many studies, behavioral techniques were administered by a teacher or an experimenter. Others reported student involvement in the manipulation of variables effecting a behavioral change, such as self-monitored reinforcement, setting of goals, and student-specified reward contingencies. Similarly, studies in the latter part of this review have emphasized that a subject can be instructed to successfully carry out his own behavioral change treatment.

Thus, the literature review indicates that: 1) Student manipulation of variables such as reward contingencies, self-monitored reinforcement, and goal setting, has reportedly led to behavior change by these students in a classroom environment: 2) In settings outside the classroom, subjects are capable of carrying out their own behavioral change treatment. Therefore, this hypothetical question logically follows: If students were to receive classroom instruction in behavioral techniques and their application, would they then be able to effect behavioral changes in themselves?
None of the studies reported in this review, nor any other studies uncovered in the literature, have investigated this particular question. The importance of this question lies in the many implications for future educational practice, such as classroom control procedures generating academic performance.
CHAPTER II

STATEMENT OF THE PROBLEM

The focus of this study was to investigate the probability of behavioral changes occurring in high school students as a result of classroom instruction in behavioral principles and their application. A criterion of the students' responses to the first three units of the behavioral instruction program was obtained by giving each student quizzes over the behavioral principles in these three units. Students who did not obtain an accuracy level of 90 per cent of better on each quiz, were recycled through the instructional material on that quiz.

The general hypothesis tested in this design was that a student's tardiness behavior will decrease as a result of instruction in behavioral principles and the student's self-application of these principles on his own tardiness behavior.

A unique problem in testing this hypothesis was that students were in direct control of their treatment. This meant that students had to be closely monitored in their application of the treatment to prevent the introduction of any outside variables. A criterion level was set for measuring agreement between inter-observer data. A percentage of agreement of .85
between inter-observer data was criterion level set. This type of research study raised several important theoretical questions: 1) Could students be persuaded to make use of behavioral principles to change their own behavior? 2) Could students be instructed to make effective use of behavioral techniques in manipulating their own behavior? This question seems especially important since a current trend in education is to afford the student an opportunity to accept more responsibility for both his own education and behavior.

In addition, there were several procedural questions: 1) What system of instruction should be used? 2) What behavioral principles should be included in the instruction? 3) What criterion should be met before initiating behavioral instruction with each group of students?

Changes in subject behavior as a result of instruction in behavioral principles and their application, was measured by direct observation of the tardiness behavior of all subjects.
CHAPTER III

THE DESIGN

The design was based upon the premise that data collected in a high school on twelve students selected for tardiness behavior, should yield valuable information concerning a decrease in this behavior as a result of classroom instruction in the use of behavioral principles.

An attempt to control against the introduction of any unwanted or extraneous variables was made by using the same experimenter-teacher for all behavioral instruction. An effort was also made to control against the possibility of experimenter bias influencing the control conditions of all three groups toward a high frequency of tardiness behavior, before their behavioral instruction began. Such an effected increase in tardiness would have counteracted any decrease in tardiness behavior which might have occurred as a result of the three groups being given special attention through general psychology instruction. Therefore, any increase in student tardiness behavior during the control conditions, induced by experimenter bias, would have defeated the purpose for which the control condition was established.

In order to control against the introduction of experimenter bias, a graduate student who was unfamiliar with this research design instructed Groups 2 and 3 in general psychology during
their control condition, while the experimenter gave this type of instruction to Group 1.

An effort was also made to standardize the method of general psychology instruction, by using the same text, course outline, assignments, and student activities, for all control conditions. Content included in the control curriculum was carefully selected to exclude anything related to behavioral psychology, or any other material thought to have an effect upon behavior change.

**Selection of the Sample**

The total subject group, consisting of twelve students referred for tardiness behavior, were selected from a Columbus area public high school. This sample of twelve male and female students were selected from a pool of names referred for chronic tardiness behavior by the school psychologist, teachers, and counselors at Westland High School in Southwestern City School District. Selection was made on the basis of the highest reported frequency of tardiness behavior.

Following selection of the twelve names, each of these students was approached individually and told his name had been selected because he had a third or a fifth period study hall. The student was then asked to participate during one of these study periods in a four week class, in which he was told he would study general psychology and behavioral science and later be asked to compare them. Only one subject refused to participate, and he
was replaced by another student exhibiting high tardiness behavior.

The final sample included one male freshman, four male and one female sophomores, two male and one female juniors, and three male seniors. All subjects were white, from approximately middle class socioeconomic background.

**Incentives**

Each student was offered one-eighth credit of independent study for participating in this four week class, and was told that the only course requirement would be daily class attendance. Students were also told they would receive incentive coupons for attending each class, as well as for turning in assignments, and that these coupons could be turned in at the end of each week for a reward they selected. The rewards which they selected and received during the four weeks of their class participation, included going out to lunch, a field trip to Ohio State University, and going bowling. The experimenter and the graduate student who assisted with instruction of the control condition, participated in and supervised all reward activities.

**Methods and Procedures**

The following procedures were chosen to investigate the effect classroom instruction in behavioral principles and their application would have toward enabling a student to change his own tardiness behavior.

During the initial phase of this design, the Baseline I period, the twelve subjects were assigned to three groups, four
subjects to each group. Groups 1 and 2 received a control treatment consisting of classroom instruction in general psychology, during the Baseline period, while Group 3 only had their tardiness behavior observed. During the Baseline period, observation was also made on the tardiness behavior of Groups 1 and 2, both to school and class.

The Baseline period lasted five days, and was terminated as soon as a stable or an upward trend was noted in the tardiness behavior of all three groups. Immediately following the Baseline period, the four students in Group 1 began receiving behavioral instruction treatment, consisting of classroom instruction in behavioral principles and their application. Group 2 continued receiving classroom instruction in general psychology, and Group 3 began receiving general psychology instruction. When a decelerating trend in Group 1's tardiness behavior was noted, following instruction in behavioral principles, then Group 2 began receiving instruction in behavioral principles, and no longer received instruction in general psychology. When a decelerating trend in Group 2's tardiness behavior was noted, general psychology instruction was terminated with Group 3, and they began receiving instruction in behavioral principles. Groups 1 and 2 continued receiving behavioral instruction throughout the remainder of the four week class.

Data was analyzed through the use of a multiple baseline design to demonstrate the effectiveness of the group instruction
in behavioral principles (independent variable) on decelerating tardiness behavior (dependent variable). The multiple baseline design used for analysis of data is illustrated in Figure 1. Further information concerning the use of this type of design can be obtained by reference to Baer, et. al. (1968); Hall, et. al. (1970); and Hall, (1971, Pt. I).

The General Psychology Control Curriculum

Traditional methods of presentation were used for control group instruction. Students were asked to participate in discussion, listen to lecture, conduct a simple experiment, read, and complete short written and oral assignments each day. Activities such as self-observation and recording of behavior were carefully avoided, since some research findings have indicated that such activities may effect behavioral change (as cited earlier in the literature reviewed).

Students were given a brief introduction to general psychology. The following areas of content were covered: psychology as a science, practical applications of psychology, basic constructs, theories of personality, and Freudian theory. Learning theory was avoided, as it was felt that it might contain material too closely related to the behavioral instruction program.

The content of both the teacher's daily lesson plans and the course outline, was taken from the general psychology text (Engle and Snellgrove, (1969)) which students received during
control instruction. This control curriculum may be further operationalized by reference to Appendix B, which includes the teacher's daily lesson plan, as well as the course outline which each student received.

A sample of the incentive coupons given for daily class attendance and the satisfactory completion of quizzes and assignments during both control and behavioral instruction, has also been included at the end of Appendix B.

The Behavioral Instruction Program

The behavioral instruction program used in this design was a modification of Hall's book (1971), describing the basic principles of behavior modification. Since it was felt that this book was too advanced in psychological terminology for high school students, it was rewritten by the experimenter for high school age youths.

The basic principles discussed in this modified program were the same as those covered by Hall, however, the vocabulary was greatly simplified by replacing the difficult psychological terminology with familiar words. The examples used to illustrate these basic principles were also changed to reflect high school students' activities and interests.

The content of the material was slightly altered to focus upon decreasing tardiness behavior to school and class. For example, assignment sheets were added to the content to guide the students toward the creation of a behavioral plan to decrease their own tardiness behavior.
The organization of the content was also altered to inculde the most basic and immediately useful concepts for making a behavioral plan, such as punishment, earlier in the curriculum. More advanced concepts such as schedules of reinforcement, which were felt to be less useful in making up a behavioral plan to decrease tardiness behavior, were moved toward the end of the curriculum.

Quizes were rewritten in an attempt to make them less difficult. However, all students reported that the quizes were still too difficult, therefore only the quizes over the first three units were given to the three groups of students.

The behavioral instruction curriculum may be further operationalized by reference to Appendix A, which includes this curriculum in its entirety.

Data Collection

Data on the tardiness behavior of the twelve students participating in this study was collected from the following sources: by teachers, two observers, the high school attendance secretary, and by the experimenter.

On the first day of the study, teachers who had any of the twelve students in this study during morning homeroom or in any class throughout the day, were asked to keep a daily record of these student's tardiness behavior for a four week period. Each teacher who collected this data was given a new data sheet each
week for each student whose tardiness behavior he was recording. The same data sheet was used for the collection of all data.
Reference can be made to this data sheet at the end of Appendix A, following the behavioral instruction curriculum.

Two university students assisted the experimenter in making daily observation of the tardiness behavior of the twelve students to school and to class, during the four week study.

As part of her normal duties, the high school attendance secretary kept a daily record of any students late to school in the morning, and their time of arrival. The experimenter made a daily check of this record, and tardiness by any of the twelve students in the study was noted.

Data from all sources were transferred each day to twelve master data sheets kept by the experimenter (one for each student in the study). A separate set of master data sheets was used for recording each week's data. Transfer of all data to a master sheet allowed the experimenter to make a daily record of any disagreement between observer data. This made it possible to calculate the percentage of agreement between inter-observer data.

The criterion level set earlier for measuring the percentage of agreement between inter-observer data (.85) was met and surpassed. The following formula was used to calculate the percentage of agreement between inter-observer data:

\[
\text{percentage of agreement} = \frac{\text{number of agreements}}{\text{number of agreements} + \text{disagreements}} \times 100
\]
A percentage of agreement of .96 was calculated between data collected by teachers, and data collected by the experimenter and the two observers from the university. A .97 level of agreement was found between data collected by the attendance secretary, and that collected by the experimenter and the two observers. An even higher percentage of agreement of .99 was calculated between data from the two observers, and data collected by the experimenter.

An incidence of tardiness was recorded whenever a student entered the classroom assigned for that particular period, more than ten seconds after the period's tardy bell.
CHAPTER IV

ANALYSIS OF DATA

Research designs used to evaluate behavior modification experimentation differ from the more traditional experimental designs used to study human behavior. Risley (1969) has stated that in behavior modification research, the usual approach is to first work intensively with a few subjects in order to discover procedures which produce significant changes in their behaviors, and then to apply those procedures to other subjects. He feels that generality of effect across subjects is important, but that inter-subject generality should be considered apart from the magnitude of the change. He believes that by working first with a few subjects, that inter-subject generality is determined not simply as a statement of the range of effects of a specific procedure across subjects, but rather as a description of the range of the variations of the procedure required to produce significant changes in all subjects.

Risley has also stated that in behavior modification, target behaviors are selected for study on the basis of their social importance. Therefore, social considerations are involved in evaluating the magnitude of the improvement wrought by the behavior modification procedures. He says that in behavior modification, the term "significance" refers to a comparison
between the accomplished correction and the level necessary for adequate functioning in our society. It does not refer to a level of confidence that a change has occurred relative to control groups or conditions. He further states that the extent to which this level of correction is approximated, determines the significance of the behavior modification.

Risley concludes that small changes in many subjects are usually not considered significant by this criterion, whereas large changes in even a few subjects (or even one) usually are.

Since the experimental treatment in this study is in the area of behavior modification, a multiple baseline design was selected which would be appropriate for evaluating behavioral change in individual subjects, as well as for small groups of subjects. Although there were only twelve subjects in this study, their placement in three separate groups created an opportunity to observe and compare the effects of the behavioral instruction treatment on each of the three groups. There was also an opportunity to observe and compare the effects of the behavioral instruction on the tardiness behavior of the twelve subjects individually.

The Results

The results of this study are graphically presented in the multiple baseline design illustrated in Figure 1.
Figure 1  A Multiple Baseline Design indicating the mean frequency of tardiness behavior to school and class for three groups.  N = 4 in all groups.
The data in Figure 1 represent the effects of classroom instruction in behavioral principles on the mean frequency of tardiness behavior of three groups. The mean frequency of tardiness was selected for representing the data rather than the total frequency of tardiness, in order to control for the effect which student absences would have on tardiness data. By calculating the mean frequency of tardiness, an absence only effected the data if the absent student was generally higher or lower than the daily average of his group's tardiness behavior. Such an example where absences probably effected the tardiness data can be noted in Group 2 on the fifth, sixth, and ninth instructional day, when a student in this group who was almost always above his group's daily tardiness average, was absent on these days. The lowest records of tardiness during Group 2's control condition were recorded on these three days.

The data presented in Figure 1 indicate a decelerating trend in the tardiness behavior of all three groups following termination of the general psychology control instruction, and initiation of the behavioral instruction treatment. This noticeable decrease in tardiness occurred within five days in all groups, following initiation of behavioral instruction. This data strongly supports the tested hypothesis that classroom instruction in behavioral principles and their application will enable a student to decrease his own tardiness behavior.
During the first week of the study, emphasis on the observation of tardiness was placed upon Groups 1 and 2. This was done to insure as accurate a record of tardiness behavior as possible for these two groups, since they were receiving a control condition consisting of general psychology instruction, in order to note the effect which this special attention would have upon tardiness behavior. Observational emphasis was also placed upon these two groups since they were the first to receive behavioral instruction, and it was essential to have a highly accurate record of tardiness behavior for at least the week before behavioral instruction began. However, this observational emphasis on the tardiness of Groups 1 and 2 may have lowered the observed frequency of tardiness for Group 3 during the first week of the study.

Figure 1 seems to indicate that the control condition had no observable effect upon tardiness behavior in any of the groups. For instance, the stable trend in the tardiness behavior of Group 1 during the control condition was quite similar to the trend of Group 3, who only had their tardiness observed during this first week of the study. Further evidence that the control condition had no observable effect on tardiness, is the lack of any increasing or decreasing trend in the tardiness behavior of Groups 2 and 3 during the control condition.

Table 1 displays the total frequency of tardiness behavior to school and class for each of the three groups during each week of the study.
<table>
<thead>
<tr>
<th>Group</th>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>41</td>
<td>17</td>
<td>18</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>18</td>
<td>13</td>
<td>6</td>
</tr>
<tr>
<td>Group 3</td>
<td>Baseline</td>
<td>Control</td>
<td>Control</td>
<td>Beh. Inst.</td>
</tr>
<tr>
<td></td>
<td>26</td>
<td>31</td>
<td>35</td>
<td>23</td>
</tr>
</tbody>
</table>
As was noted in Figure 1, the control condition seemed to have no observable effect upon tardiness behavior in any of the three groups. For example, there was no noticeable increase or decrease in the control condition data from the first to the second week for Group 2, or from the second to the third week for Group 3.

Table 1 also illustrates that Group 3's total frequency of tardiness during the first week was lower than during the second and third (control condition) weeks. This may have been due to the emphasis placed upon observation of Groups 1 and 2 during the first week of the study (discussed earlier).

Group 1's large decrease in tardiness following the initiation of behavioral instruction, is very apparent. This decrease is so significant that Group 1's total frequency of tardiness for weeks 2, 3, and 4, does not exceed its forty-one observed instances of tardiness during the first week, before behavioral instruction began.

Although the decrease in the tardiness of Groups 2 and 3, following initiation of behavioral instruction, is not as sharp as that of Group 1, a definite decrease can still be noted in both groups. The data of all three groups seem to support the tested hypothesis that behavioral instruction will enable a student to decrease his own tardiness behavior.

As can be evidenced by the data for Groups 1 and 2, tardiness behavior continued to decrease with a second or third week of behavioral instruction. A number of possibilities to account for this decrease in tardiness should be considered. First, since the
decrease occurred early in the treatment phase, it is reasonable
to infer that the change was due to the behavioral instruction.
Second, because the decrease continued over subsequent treatment,
it is likely that progressive treatment results in a diminution
of tardiness behavior.

The data in Table 2 represent the mean frequency of tardiness
behavior for three groups to school and class, under three conditions.
Since Group 3 was the only group to receive the Baseline1 condition,
consisting solely of observation of their tardiness behavior, no
Baseline1 data existed for the first two groups.

The largest decrease in tardiness, following initiation of
behavioral instruction was shown by Group 1, as was also trend in
the data illustrated in Figure 1 and Table 1. Group 1's mean
frequency of tardiness decreased more than 66 per cent, while the
mean tardiness of the other two groups decreased at least 30 per cent,
following initiation of behavioral instruction.

The data in Table 2 indicate that all three groups showed a
very obvious decrease in their mean frequency of tardiness behavior.
This is further evidence supporting the tested hypothesis that a
student's tardiness behavior will decrease as a result of instruction
in behavioral principles and the student's self-application of these
principles on his own tardiness behavior.

Figures 2 through 13 each represent the total frequency of
tardiness for one of the twelve students in the study. S1 (subject
one) through S4 (subject 4) were all students in Group 1, while
TABLE 2

THE MEAN FREQUENCY OF TARDINESS BEHAVIOR FOR THREE GROUPS TO SCHOOL AND CLASS, UNDER THREE CONDITIONS

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>--------</td>
<td>41</td>
<td>13.6</td>
</tr>
<tr>
<td>Group 2</td>
<td>--------</td>
<td>17.5</td>
<td>9.5</td>
</tr>
<tr>
<td>Group 3</td>
<td>26</td>
<td>33</td>
<td>23</td>
</tr>
</tbody>
</table>
$S_5$ through $S_8$ were all in Group 2, and $S_9$ through $S_{12}$ were in Group 3. $S_1$ was a male senior in Group 1, who was very responsive to behavioral instruction, as is indicated by the data in Figure 2. The day after behavioral instruction had begun, his tardiness record dropped to zero, and remained near this low level. This was an obvious decrease, compared to his daily record of tardiness before behavioral instruction began, which averaged almost two instances a day.

Figure 3 represents the data of a female junior ($S_2$) in Group 1, who was one of the least responsive to the behavioral instruction of any student in the study. She had a boyfriend who met her between classes, and this occurred every day for the entire four weeks of the study. She admitted that meeting him between classes was continually making her late, but despite the experimenter's suggestions that she apply behavioral principles to herself to remedy this situation, she never did do so. Nevertheless, her total frequency of tardiness seemed to stabilize around two occurrences per day during behavioral instruction, and dropped to zero for two days during the last week of the study. This seemed to be a slight decrease in tardiness, compared to her calculated average of three instances of tardiness per day during the control condition.

Figure 4 indicates the total frequency of tardiness of a male senior ($S_3$) in Group 1, who was one of the most responsive subjects in the study to the behavioral instruction. The decelerating trend in his tardiness behavior, with initiation of behavioral instruction, was very apparent.
Figure 2  Total frequency of tardiness behavior to school and class, per instructional day. Enlarged circles denote an absence.
INDIVIDUAL RECORD INDICATING FREQUENCY OF TARDINESS BEHAVIOR

GROUP 1  S2

Figure 3    Total frequency of tardiness behavior to school and class, per instructional day. Enlarged circles denote an absence.
Figure 4  Total frequency of tardiness behavior to school and class, per instructional day. Enlarged circles denote an absence.
Figure 5 illustrates the data of a female sophomore ($S_4$), who also showed a decrease in her tardiness behavior after behavioral instruction had begun. Her daily record of tardiness decreased to zero on the majority of days during the three weeks she received behavioral instruction.

Figure 6 represents the data of a male sophomore ($S_5$) in Group 2. His total frequency of tardiness showed a definite decrease following initiation of behavioral instruction.

Figure 7 illustrates the data of a male freshman ($S_6$) in Group 2. Although he had a low frequency of tardiness during the control condition, his record of tardiness was even lower after initiation of behavioral instruction, for tardiness dropped to zero.

Figure 8 depicts the tardiness behavior of a male junior ($S_7$) in Group 2. A decelerating trend in his tardiness behavior was apparent, with initiation of behavioral instruction. His tardiness decreased to zero during his second week of behavioral instruction and remained there.

Figure 9 represents the data of a male sophomore ($S_8$) in Group 2, who had the highest daily tardiness average of anyone in his group. He is the subject mentioned in the discussion of Figure 1, whose absence on the fifth, sixth, and ninth instructional day, probably lowered Group 2's mean frequency of tardiness.

A decelerating trend in the frequency of his tardiness behavior was noted, after behavioral instruction had begun.

Figure 10 illustrates the data of a male sophomore ($S_9$) in
Figure 5  Total frequency of tardiness behavior to school and class, per instructional day. Enlarged circles denote an absence.
Figure 6  Total frequency of tardiness behavior to school and class, per instructional day. Enlarged circles denote an absence.
Figure 7  Total frequency of tardiness behavior to school and class, per instructional day. Enlarged circles denote an absence.
Figure 8  Total frequency of tardiness behavior to school and class, per instructional day. Enlarged circles denote an absence.
Figure 9  Total frequency of tardiness behavior to school and class, per instructional day. Enlarged circles denote an absence.
INDIVIDUAL RECORD INDICATING FREQUENCY OF TARDINESS BEHAVIOR
GROUP 3 S9

Figure 10 Total Frequency of tardiness behavior to school and class, per instructional day. Enlarged circles denote an absence.
Group 3, whose record of tardiness was so erratic throughout the study, that very little can be deduced from it.

When this student entered the control condition during the second week of the study, it was learned that he was reading on a first grade level, and that several of his teachers and the principal suspected that he was brain damaged. The experimenter noted that this student had severe difficulty with the concept of time. He did not seem to know the times or periods of his classes, only their order of sequence. He was very difficult to observe, because he usually did not follow his daily schedule of classes. He spent most of his time in the art room, which his other teachers generally permitted since he did not seem capable of doing the work in their classes.

Although an attempt was made to give this student both the control and the behavioral instruction orally, very little can be said about the effects of either, except that his record of tardiness was less erratic during the behavioral instruction.

Figure 11 represents the tardiness record of a male junior (S₁₀) in Group 3, who showed an obvious decrease in tardiness with the initiation of the behavioral instruction. No tardiness was observed after behavioral instruction had begun.

Figure 12 is the tardiness record of a male senior (S₁₁) in Group 3, who had a rather erratic pattern of tardiness during the Baseline₁ period, and during the two weeks of control instruction. However, on the second day after behavioral instruction had begun,
INDIVIDUAL RECORD INDICATING FREQUENCY OF TARDINESS BEHAVIOR
GROUP 3  S_{10}

Figure 11  Total Frequency of tardiness behavior to school and class, per instructional day. Enlarged circles denote an absence.
Figure 12: Total Frequency of tardiness behavior to school and class, per instructional day. Enlarged circles denote an absence.
his tardiness decreased to zero and remained there. This was a very convincing decrease.

Figure 13 illustrates the data of a male junior (S_{12}) in Group 3, who had the highest total frequency of tardiness of anyone in his group. Considering the pattern of his tardiness behavior during the Baseline period and the control condition, there seemed to be a decelerating trend in his data with initiation of behavioral instruction.

**Interpretation of Results**

The multiple baseline design used for analysis of this study (Figure 1), proved to be adequate for evaluating the behavioral change of Groups 1, 2, and 3, each consisting of four subjects.

The data presented in Figure 1, indicated a decelerating trend in the mean frequency of tardiness behavior of all three groups, following termination of the general psychology control instruction and initiation of the behavioral instruction treatment. The data also seemed to indicate that the control instruction in general psychology had no observable effect upon the tardiness behavior of any of the groups.

The data in Table 1 consisted of the total frequency of tardiness for each of the three groups, during the four weeks of the study. The results of this data also showed an obvious decrease in tardiness for each of the groups after they had begun behavioral instruction, and the control instruction had no observable effects upon the tardiness of any of the three groups.
Figure 13 Total Frequency of tardiness behavior to school and class, per instructional day. Enlarged circles denote an absence.
The results of the data in Table 2, which consisted of the mean frequency of tardiness behavior for the three groups during the Baseline₁ period, the control instruction, and the behavioral instruction, were identical with those of Figure 1 and Table 1. All three groups showed a definite decrease in tardiness during the behavioral instruction, with the control instruction having no noticeable effect on tardiness in any of the groups.

The multiple baseline design used in this study also proved very useful for evaluating behavioral change in individual students. The individual records (Figures 2-13) of nine out of the twelve students in the study, showed an obvious decrease or a definite decelerating trend in their total frequency of tardiness, after initiation of behavioral instruction. The records of two other students showed only a slight decrease in tardiness (S₂), and a possible decelerating trend (S₁₂), after behavioral instruction had begun. The final individual record (S₉), was so erratic that no conclusions could be drawn from it.

As pointed out earlier, Risley (1969) has concluded that small changes in many subjects are usually not considered significant by the criterion of adequate functioning in society, whereas large changes in even a few subjects usually are. By his logic of evaluation, an obvious decrease in tardiness behavior by nine out of twelve subjects, as a result of behavioral instruction, would certainly be considered significant.
Conclusions

All results of this study indicate that behavioral instruction always had a decelerating effect upon tardiness behavior, when any effect was noted. It never increased tardiness.

None of the results from this study indicate that either the Baseline observation or the control instruction had any effect on the tardiness behavior of any group or individual.

The results of the data from Figure 1, Table 1, and Table 2 all furnished evidence supporting the tested hypothesis, that a student's tardiness behavior will decrease as a result of instruction in behavioral principles and the student's self-application of these principles on his own tardiness behavior.

Further evidence supporting this hypothesis was found in the results of the individual records of tardiness behavior (Figures 2-13).

Thus, the results of all group data support the tested hypothesis, as do the majority of the individual behavior change results.
CHAPTER V

IMPLICATIONS AND RECOMMENDATIONS

Behavior modification techniques are presently being successfully used to change student behavior in schools around the country. However, in almost every case, they are being applied by psychologists, teachers, counselors, or some other school personnel, rather than by the students themselves. This study is probably one of the first to indicate that high school students can be instructed to make effective use of behavioral principles in manipulating their own behavior, and that they can simultaneously be motivated to do so. If these results would tend to be the consistent outcome with the use of such a behavioral instruction program, then these results could have implications for the use of this type of program in high schools. For example, instruction programs could be set up, removing the responsibility for application of the behavioral principles from the school personnel, and placing it with the students. Programs of this nature would also help solve the ethical issue concerned with the manipulation of one individual's behavior by another, which arises with the use of behavior modification.

The advantages of implementing such behavioral instruction programs are many. The first, being that teachers could be trained to administer this instruction. This might create better rapport
between teachers and students, since desired student behavior change could come about through the efforts of students, rather than through teacher or school administered discipline. Having teachers administer this instruction would also seem to be a very efficient use of educational personnel, since they are usually the referring source for the unworkable number student behavior referrals received by counselors and school psychologists. This would allow the latter personnel time to serve as consultants to teachers in setting up and operating behavioral instruction programs, rather than attempting to deal with the already impossible number of behavior referrals individually. Another advantage of such a program is that it could be administered in a regular classroom, with no special facilities other than the behavioral curriculum, and many students could be worked with at one time.

Although the experimenter selected tardiness behavior as the target for change in this study, the focus of the instruction could probably be altered to include a variety of social behaviors, which the students could be motivated to select as targets for change.

Even though the subjects in this study were all of high school age (14-18 yrs.), perhaps behavioral instruction might also produce desired behavior change with younger students, such as upper elementary and junior high age students.

The subjects used in this research were all white from approximately middle class socioeconomic background, who attended a large
public high school of over 1700 white students. Hopefully, the results of this research will also have implications for any size high school, whether it be white, integrated, or all black, as well as implications for both private and parochial schools.

The following recommendations consist of suggested changes to improve the study, and recommendations for further research.

As was mentioned earlier, during description of the behavioral instruction program, all twelve students in the study reported that the quizzes were too difficult. Therefore, quizzes were discontinued after the first three units of instruction, to prevent frustration and loss of interest in the class. Each quiz required students to fill in missing words in sentences taken from the content of one of the seven instructional units. It is suggested that these quizzes could be made less difficult by providing multiple choice questions with four or more answers from which to choose. This type of quiz should seem easier and prove less frustrating for students, since the correct answer would be visible.

It is also suggested that interesting student activities related to the behavioral instruction be added to the curriculum. An example might be playing hangman or some other word game, using words from the curriculum. Such activities may serve the dual purpose of holding students' interest in the class, while indicating how well they have read the material.

The successful outcome of this study has opened the door to many new areas to be researched. A very important question to now
be answered, is how far dare we generalize with the results of this study? To learn more about the limits within which we may accurately generalize, research is needed which will answer the following types of questions: 1) With how many other age groups will behavioral instruction prove effective? 2) Will behavioral instruction prove effective in any size school, in integrated and black schools, in wealthy and poor schools, and in private and parochial schools? 3) Can the focus of the instruction be altered to successfully change a variety of social behaviors? 4) How long will the behavior changes resulting from the behavioral instruction last? This fourth question is perhaps the most important of all, for if the effected behavior change does not last, or if it cannot be maintained, then changing the behavior may not be worthwhile.
APPENDIX A

BASIC PRINCIPLES OF BEHAVIOR MODIFICATION

Rewritten For High School Use

From

Managing Behavior -- Book 2
Behavior Modification: Basic Principles

By

R. Vance Hall
Unit I

B. F. Skinner observed two basic categories of behavior, operant and respondent behavior. Most behavior modification programs are concerned primarily with operant behavior. The following basic principles and procedures are necessary for an understanding of operant behavior.

Operant Behavior

Operant behavior occurs without any eliciting stimulus (without being evoked or brought about by some stimulus event). Thus, we say that operant behaviors are emitted, they operate on the environment which in turn operates upon them. An example of operant behavior is a rat in a cage pressing a lever (operating on the environment), which releases a food pellet (the environment operating on the behavior).

The Control of Operant Behavior

Operant behavior is controlled by the consequences (or conditions and events) which immediately follow it. This is the most basic principle of operant behavior, upon which all other principles of operant behavior depend. The consequences which follow a behavior alter the future probability or strength of the behavior. Thus, the probability of the future occurrence of an operant behavior can be influenced by manipulating the consequences which follow it.
Reinforcement

A reinforcer is any event or stimulus consequence which increases the probability or strength of the behavior it follows. For example, if a rat is reinforced with a pellet of food each time he presses a lever in his cage, then the strength or probability of this behavior will generally increase. Another example might be the basketball player who discovers that the more hours spent shooting baskets in weekly practice, the higher his percentage of accuracy in scoring during games.

Reinforcement has been defined as any event which strengthens the behavior it follows. The best way to determine if a given event or consequence is a reinforcer, is to observe its effects on the behavior it follows.

A consequence which is a reinforcer for one person may not be for another person. A teacher may find that telling a student he received the highest grade in the class may make one student work harder, while it may embarrass another student, who might withdraw and quit working.

Reinforcement must immediately follow the desired behavior, in order to have the maximum effect. The quicker reinforcement follows a certain behavior, the more effective it will be in making the behavior reoccur. For example, an excellent test performance is more likely to reoccur as a result of a high grade if it is received immediately after the test, rather than two weeks later.
NAME ____________________________

List five events or consequences which you would consider as reinforcement for yourself.

1. __________________________________________

2. __________________________________________

3. __________________________________________

4. __________________________________________

5. __________________________________________
Fill in your schedule under the schedule heading below.

Make a check in the tardy column beside the time(s) you are frequently tardy.

<table>
<thead>
<tr>
<th>Time</th>
<th>Period</th>
<th>Schedule</th>
<th>Tardy</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00</td>
<td>Home</td>
<td>Morning</td>
<td></td>
</tr>
<tr>
<td>8:10</td>
<td>Room</td>
<td>Arrival</td>
<td></td>
</tr>
<tr>
<td>8:15</td>
<td>First</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9:05</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9:10</td>
<td>Second</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:05</td>
<td>Third</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:55</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:00</td>
<td>Lunch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:30</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:35</td>
<td>Fifth</td>
<td></td>
<td></td>
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<tr>
<td>1:25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1:30</td>
<td>Sixth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2:20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2:25</td>
<td>Seventh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3:15</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

After you have completed the above, attempt to list reasons for each tardiness:

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________
Extinction

Behavior followed by a reinforcement will decrease in rate if the reinforcement is withdrawn. A horse who is given a lump of sugar for nodding his head twice, will soon cease this behavior if no sugar is received. The process of returning behavior to a low level of occurrence is called extinction. Extinction of an undesirable behavior is sometimes coupled with reinforcement of an incompatible behavior (one which cannot occur at the same time the undesirable behavior occurs). Reinforcement of a competing behavior weakens the behavior to be extinguished. A teacher might reinforce a child for holding up his hand to speak, in order to extinguish frequent talking out behavior by the child.

Operant Conditioning

Skinner placed a lever in a small box, and then put a rat in the box. He found that the rat eventually came in contact with the lever and pressed it. If the rat received a food pellet when he pressed the lever, he soon learned to press it more frequently to get the food. If the food was not delivered after the lever had been pressed several times, the rate of lever pressing decreased. Skinner called this process of increasing and decreasing the strength of behavior through systematic arrangement of consequences, operant conditioning.

In setting up a behavior modification process, operant conditioning involves the following three operations:

1. The operant level of the behavior is determined by making a baseline record of the behavior at the beginning of the behavior modification process.
2. Each occurrence of the desired behavior is followed with a potential reinforcer to strengthen it, until the strength of the desired behavior increases.

3. Reinforcement is discontinued until the behavior returns to the operant level to scientifically verify that the reinforcement caused the change.
Basic Principles of Behavior Modification

Quiz 1

1. Skinner observed two basic categories of behavior, respondent and ________________ behavior.

2. Kicking a ball, asking someone to hand you a book working a math problem, are all examples of ________________ behavior.

3. We say that operant behavior is ________________ rather than elicited or brought about.

4. Operant behavior is controlled by its stimulus ________________

5. If a consequence increases the probability of a behavior it follows, it is called a ________________.

6. To be effective, a reinforcer should _______ (Time Relationship) the desired behavior.

7. The only way to tell whether or not a given consequence is a reinforcer for a certain behavior, is to observe the ________________.

8. The process of discontinuing reinforcement until a behavior returns to the initial operant level is called ________________.

9. Skinner labeled the process of increasing the strength of a behavior through systematic reinforcement as ________________

10. Is it possible that scolding a child can serve as reinforcement for undesired behavior? ________________
Unit II

Primary Reinforcers

A primary reinforcer does not depend upon previous conditioning for its reinforcing power. Consequences which satisfy certain biological needs are reinforcing for all forms of life, such as food and water. These are called primary or unconditional reinforcers.

Secondary Reinforcers

Food, drink, warmth, etc., make up only a small part of the range of stimuli that reinforce behavior. These biological reinforcers have not been used much in behavior modification research projects with human subjects. Money, attention, praise, and other reinforcers not directly related to biological needs have been more frequently used. These reinforcers have an acquired (or learned) reinforcing power, and are called secondary or conditioned reinforcers.

Events which have been repeatedly paired with primary reinforcers may acquire reinforcing properties as a result. Thus, if nearness to a mother or to her attention and voice are paired with food, comfort and warmth, then the mother's presence comes to be a secondary reinforcer because it has been associated with these three primary reinforcers.

If secondary reinforcers are not backed by primary reinforcers, they will probably lose their reinforcing properties. For example, a word of approval or encouragement from a teacher or parent will
become ineffective after a while, unless such reinforcement is paired with other things which are reinforcing to the student.

As stated earlier, events that are reinforcing for one student may not be for another, much depends on the person's history of reinforcements. However, certain environmental events generally act as reinforcers for most students, such as opportunities to engage in various desired behaviors (like going to basketball games, movies, and etc.).

**Satiation**

Continued reinforcement at a high rate may result in satiation, and the reinforcement will lose its effectiveness. A student may work for a candy bar, but if he has already eaten five of them, he is apt to be satiated with this particular type of reinforcement and have no desire to work for any more candy. Therefore, it is highly important to vary the type of reinforcements used to achieve maximum effectiveness in strengthening behavior. A student who is offered a candy bar for completing his homework, should be offered a different (and perhaps more valued) reinforcement for washing the family car, such as money or use of the car.

**Reinforcement Operations**

There are two basic reinforcement operations, and both result in increasing the strength of the behavior they follow. Both operations are reinforcing, and neither should be confused with punishment which has an opposite effect on behavior.
The first type of reinforcement operation involves adding something good or desirable to the environment. Examples of this operation are: 1) A student being given free time for good behavior. 2) A baby being given a new toy each time he successfully takes a step without falling.

This technique of adding something good, contingent (dependent) on the desired behavior, usually causes the person and the situation associated with that reinforcer to become secondary reinforcers. Parents, students, and teachers who have learned to add good things for desired behavior will become well-liked and effective reinforcing agents. This procedure they use is called positive reinforcement. The only way to receive that kind of reinforcement is to be near the person using it.

The second type of basic reinforcement operation is concerned with taking away something bad, dependent (or contingent) upon the desired behavior. Examples are: 1) Parents refusing to allow their daughter to leave the house until she helps with the cleaning, 2) A teacher shouting at her class until they are quiet, and 3) A marine officer marching his men until they perform the desired drill perfectly.

This process of taking away something bad when the desired behavior is displayed, often results in escape and avoidance behavior by the person to which something bad is happening. It also causes the person who is taking away something bad, and the situation associated with it, to become punishing. People who have learned to display bad behavior which stops when they get what they want (such as pouting
children or nagging wives), will be disliked and become ineffective reinforcing agents. This procedure of taking away something bad is called negative reinforcement. Humans and most other living organisms soon learn that the most effective way to receive negative reinforcement (have something bad taken away), is to escape from or avoid the person using it.

It is important to remember that both negative and positive reinforcement result in increases in the behavior which they follow. Negative reinforcement should not be confused with punishment (discussed later), which is an operation where something bad is added to decrease the behavior. Any type of reinforcement always increases the behavior, or it may not be called a reinforcement.

The following examples of positive and negative reinforcement have been provided for clarification.

**Positive and Negative Reinforcements for Behavior**

<table>
<thead>
<tr>
<th>Positive Reinforcement</th>
<th>Negative Reinforcement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adding Something Good</td>
<td>Taking Away Something Bad</td>
</tr>
<tr>
<td>1. Present food to a hungry dog</td>
<td>Shocking a laboratory animal until he displays the desired behavior</td>
</tr>
<tr>
<td>2. Parents paying their daughter for washing the dishes</td>
<td>Parents discontinuing their daughter's allowance until her grades improve</td>
</tr>
<tr>
<td>3. A student thanking a friend for a ride home</td>
<td>A student forced to walk home from school until he starts getting home on time</td>
</tr>
<tr>
<td>4. A teacher giving a smile to her class for being in their seats when the bell rings</td>
<td>A teacher shouting at her students to sit down, until they are all seated</td>
</tr>
</tbody>
</table>
It cannot be overemphasized that adding something good results in the person and the situation becoming a secondary reinforcer, and results in approach behavior. On the contrary, taking away something bad results in the person or situation becoming a punisher and often results in escape or avoidance behavior.
Select an event or consequence which you would consider an effective reinforcement for arriving at school or class on time. Then make up a behavioral plan describing how and when you would administer this reinforcement to decrease your tardiness.

Selected reinforcement:

Plan:
Basic Principles of Behavior Modification

Quiz 2

1. Reinforcers that do not depend upon previous conditioning for their reinforcing powers are called ____________________
or ____________________ reinforcers.

2. Neutral stimuli which become reinforcers after being repeatedly paired with primary reinforcers are called _________________.
or ____________________ reinforcers.

3. Reinforcing a behavior ____________________ its strength whether something ____________________ is added or something ____________________ is taken away.

4. A baby who has been fed and diapered cries until his mother picks him up and rocks him. He stops crying. The mother puts him in his crib and he cries again. She picks him up and he stops. Soon it seems that every time he is left in his crib he cries and will not stop until his mother picks him up and rocks him.

a. What behavior is being reinforced in the child? ________________

b. What is the reinforcer? ________________

c. What behavior is being reinforced in the mother? ________________

d. What is the reinforcer? ________________

e. What should the mother do if she wishes to decrease the crying behavior? ________________.
Unit III

Punishment

The process of punishment is concerned with following a behavior with a consequence which decreases the behavior's strength or probability. Therefore, a punisher is any event which decreases the strength of the behavior it follows.

The only way to determine if a consequence is a punishment is to observe its effect on the behavior it follows. For instance, a pupil who is kept after school for passing notes in class will probably discontinue this behavior. Similarly, a teacher who receives a cut in pay for missing too many days of school will probably stop missing so much work.

When attempting to decrease a behavior through the process of punishment, it is important to first make certain that the punishment selected is effective. Certain events such as scolding by a teacher have been known to increase undesirable behavior (like talking out in class), rather than weaken it, in which case the scolding would be a reinforcer (possibly in the form of attention).

The following procedures may be used in decreasing behavior with punishment:

1. Measure the frequency of the behavior to be weakened.

2. Follow this behavior with a potential punishment and observe its effects upon the behavior.
3. Use a scientific procedure, such as a multiple baseline design to verify that there has been a significant decrease in the behavior as a result of the punishment.

When punishment is used, the punished behavior occurs less frequently, but when the punishment is removed, the punished behavior usually returns. The opposite situation exists with the removal of reinforcement. When it is removed, the frequency of the reinforced behavior decreases.

Most of the rules applying to reinforcement also apply to punishment, except that punishers weaken behavior and reinforcers strengthen it. As is true of reinforcement, punishment is most effective when: 1) It is administered immediately after the behavior, 2) It is intense or given in great quantity, and 3) It is administered at predictable and intermittent intervals.

Although it is possible to use punishment to produce strong and lasting effects on behavior, other matters such as withdrawal from and resentment toward the person administering the punishment, should be considered. Punishments such as strong electric shock, spanking, and ridicule may result in emotional responses.

Punishment should be used primarily to stop a potentially dangerous behavior, or to halt a response which is preventing the occurrence of an appropriate behavior.

There are two basic types of punishment operations just as there are two basic reinforcement operations. The first type of punishment consists of adding something bad to the environment, such as making a student stand during an entire class as punishment for being late.
The second type of punishment involves taking something good or desirable away, like removing a student's privilege to choose where he wants to spend his free period in the school. Both of these punishment procedures result in decreases in the behaviors which they follow. However, both procedures may cause avoidance or escape behavior from the person administering the punishment and from the situations involved.
NAME ________________________________

List five events or consequences which you would consider as punishment for yourself.

1. ____________________________
   ____________________________
   ____________________________

2. ____________________________
   ____________________________
   ____________________________

3. ____________________________
   ____________________________
   ____________________________

4. ____________________________
   ____________________________
   ____________________________

5. ____________________________
   ____________________________
   ____________________________
NAME

Select an event or consequence which you would consider an effective punishment for arriving at school or class late. Then make up a behavioral plan describing how and when you would administer this punishment to decrease your tardiness.

Selected punishment: ________________________________

Plan: __________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

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Basic Principles of Behavior Modification

Quiz 3

1. A consequence or event which follows a behavior and _________ its frequency of occurrence, is called a punishment.

2. When attempting to halt a behavior through the process of _________, it is first necessary to make certain that the punisher is _________.

3. The only way to tell if a consequence is reinforcing, punishing, or neutral, is to _________ its effectiveness.

4. In order to be most effective, punishment should _________ follow the behavior to be decreased.

5. Punishment is more effective when it is intense or given in _________ quantity.

6. Punishment may cause _________ from the person using it.

7. Physical punishment such as hitting children may cause an _________ response.

8. Punishment should be used primarily to stop a potentially _________ behavior, or to halt the occurrence of a behavior which is preventing the occurrence of a _________ behavior.
Unit IV

Shaping

In some cases weeks or months might pass without a single occurrence of the desired behavior. Therefore, a procedure is needed which can be used when the desired behavior does not occur. Such a procedure does exist and it has been referred to as shaping. The following is an example of the shaping procedure. A student has been tardy to his math class every day since the beginning of the school year. Since he has never made it to class on time, it may be necessary to reinforce him every day he arrives in class at a time closer to the bell. For instance, if he has never made it to class sooner than five minutes after the bell, he is reinforced the first time he makes it in any time less than five minutes. With this shaping procedure we are reinforcing successive approximations, one-by-one, until the final desired behavior is achieved.

Shaping may be accomplished by the following: 1) Define the desired terminal behavior, 2) Measure the frequency of the presently occurring behavior, and 3) Differentially reinforce the successive approximations until the desired terminal behavior is achieved.
Basic Principles of Behavior Modification

Quiz 4

1. If weeks or months pass without a single occurrence of the desired behavior, a procedure called \_
\_
may be used.

2. This procedure consists of differentially reinforcing successive approximations, step-by-step, until the \_
\_
behavior is achieved.

3. The first step in this procedure is to \_
\_
the desired behavior.

4. Give an example of shaping.
Unit V

Schedules of Reinforcement

A reinforcement schedule refers to the manner in which reinforcement is administered. Two main types of reinforcement schedules are continuous and intermittent schedules. A continuous schedule is the best type to use to support the acquiring of a new behavior, or to initially strengthen a behavior. Continuous reinforcement means that the desired behavior is reinforced every time it occurs. In summary, continuous reinforcement is the fastest way to establish a new behavior, and the most effective schedule to use in a shaping procedure.

An intermittent schedule of reinforcement means that only certain occurrences of the desired behavior are reinforced. This type of schedule is more effective in maintaining a behavior after a higher rate of its occurrence has been established. Intermittent reinforcement is more resistant to extinction than continuous reinforcement.

Categories of Reinforcement

Two basic categories of reinforcement schedules are ratio and interval schedules.

Ratio Schedules

Ratio schedules are dependent upon the number of responses emitted, before the reinforcement is given. The two main types of ratio schedules are the following:
1) Fixed ratio schedule—on this schedule reinforcement is delivered after a fixed (pre-set) number of responses. For example, if the fixed number of responses is set at five, then every fifth occurrence of the desired response is reinforced. Fixed ratio schedules result in high stable rates of responding, with a pause occurring right after each reinforcement.

2) Variable ratio schedule—on this type of schedule the actual number of responses required before reinforcement is delivered varies. For instance, a variable ratio schedule might be 10, 15, 24, etc. This means that every 10th, 15th, 24th, etc., response is reinforced. A variable ratio schedule usually results in high and steady rates of occurrence of the reinforced behavior, with little or no pause right after reinforcement.

Extinction on ratio schedules usually results in a high frequency of previously reinforced responses in a relatively short period of time. This usually occurs in the form of rapid bursts of responding with increasing pauses, followed by a sudden halt of all responding. Therefore, the behavior may temporarily increase in rate before it stops.

Interval Schedules

Interval schedules are dependent upon the amount of time between responses.

The two main types of interval schedules are the following:

1) Fixed interval schedule—on this schedule reinforcement is delivered at the end of fixed (pre-set) intervals of time, no matter how many times the desired response occurs. For example, a fixed interval schedule of one minute means that only the first response will be reinforced after one minute has passed, and thereafter reinforcement will be delivered every minute regardless of behavior.

2) Variable ratio schedule—on this type of schedule the reinforcement is delivered at the end of varying time intervals. For instance a variable ratio schedule of
10 seconds, 25 seconds, 1 minute, etc., means that reinforcement will occur 10 seconds after the first response, and thereafter on time intervals averaging 25 seconds, 1 minute, etc.

Interval schedules are the best way to maintain behavior over a long period of time, because extinction takes longer than it does with other types of schedules. Extinction of interval schedules usually results in low sustained rates of responding that gradually taper off.

Most human behavior is on a combination of the preceding schedules, or a multiple schedule. In summary, the following three points should be remembered when using reinforcement schedules:

1) Continuous reinforcement should be used during the acquisition of new behaviors.
2) Intermittent reinforcement is the most effective way to maintain behaviors once they are acquired.
3) Extinction occurs more rapidly after continuous reinforcement than it does after intermittent reinforcement.

The following four types of reinforcement schedules are characterized by these types of responding:

- Ratio Schedules = High Rates of Responding
- Interval Schedules = Low Rates Responding
- Fixed Schedules = Pauses in Responding
- Variable Schedules = Steady Responding
Basic Principles of Behavior Modification

Quiz 5

1. A reinforcement schedule refers to the manner in which reinforcement is ____________________.

2. A ____________________ reinforcement schedule means that the desired response is reinforced every time it occurs.

3. List two types of ratio reinforcement schedules, ____________________ and ____________________.

4. List two types of interval reinforcement schedules, ____________________ and ____________________.

5. Extinction occurs more rapidly after ________________ reinforcement, than it does after intermittent reinforcement.

6. What kind of reinforcement schedule is most effectively used in shaping? ____________________
Unit VI

Token Reinforcement

A token reinforcement is like money, because it is something which can be exchanged for a desired object or activity at some future date.

When properly applied, token reinforcement systems can be highly effective in changing behavior. The success of token reinforcement is based on the following points:

1. Tokens do not depend upon any single condition since they can be backed up by many reinforcers.

2. Tokens can be seen and touched, thus it is obvious when reinforcement has been received.

3. Tokens can be given immediately after the occurrence of the desired response, even though the back-up reinforcer (for which they can be exchanged) cannot be delivered until a much later date.

Token systems should be kept as simple as possible, in order that record keeping and the systems of exchange do not become confusing and require only a minimum of effort.
Basic Principles of Behavior Modification

Quiz 6

1. When behavior that has been reinforced occurs in similar situations, this is called _________________.

2. When certain behaviors occur more frequently in particular situations than in others, this is called _____________.

3. If Mary stops talking in class when the teacher comes near, this is the process of _________________.

4. If Paul has to jiggle the key in the ignition in order to start his car, and he does the same when he starts his father's car, this is the process of _________________.

5. The sequence of behaviors emitted by a man going home from work is an example of the process of _________________.

Unit VII

Generalization and Discrimination

The process of generalization supports the notion that a behavior which has been reinforced in certain situations will occur in similar situations. A person who has a car which will start only after he jiggles the ignition key will probably jiggle the ignition key of the next car which he has difficulty starting.

Generalization prevents us from having to learn each new task from the beginning. Application of past learning can be made on new tasks. For instance, we learn what behavior is appropriate and likely to be reinforced in a particular situation. We also learn that the same behavior is appropriate and likely to be reinforced in similar although not identical situations. Thus, generalization prevents us from having to learn exactly what to do each time we encounter a slightly different situation.

Discrimination is the reverse of the generalization process. It refers to the fact that certain behaviors will occur more frequently in particular situations than they will in others. For example, a boy is more likely to show an ugly cut received in football practice to other members of the team, than to his mother (who might suggest he quit). A second example might be the girl who is more apt to kiss her boyfriend goodnight on the front steps with the front door closed, than she would in the hall with her parents watching.
Discrimination prevents us from emitting behaviors in situations where they are inappropriate. The cues which inform us that reinforcement is likely to follow are called discriminative stimuli. In the previous example, the closed front door which cut off the parents' view would be the discriminative stimuli or cue.

Chaining

Discriminative stimuli or cues are also important in developing a complex chain of behavior. These cues can be used to reinforce a previous behavior, which brings the person in contact with the cue, which leads to another behavior. An example is the many behaviors emitted by a man going home from work. As he leaves the building where he works, each step that brings him nearer to the bus stop presents a new cue. He emits more behaviors as he gets on the bus, and watches out the window for his stop. Each of these behaviors present new cues which tell him he is getting nearer his terminal goal, his house.

Thus, a chain is a sequence of behaviors in which one response produces a stimulus change (a new discriminative stimuli), which increases the probability of a new response, which in turn produces another stimulus change. This entire sequence eventually leads to reinforcement.
# Record of Tardiness Behavior

**Student's Name**

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<tr>
<th>Time</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Total for Week</th>
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<tbody>
<tr>
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</table>

**Total tardy minutes per day**

<table>
<thead>
<tr>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st period</td>
</tr>
<tr>
<td>2nd period</td>
</tr>
<tr>
<td>3rd period</td>
</tr>
<tr>
<td>Lunch</td>
</tr>
<tr>
<td>5th period</td>
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<tr>
<td>6th period</td>
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<tr>
<td>7th period</td>
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</tbody>
</table>
APPENDIX B

CONTROL GROUP INSTRUCTION IN GENERAL PSYCHOLOGY

The teacher's daily lesson plans and the course outline which all students received, have been integrated in this appendix in the exact manner in which they were used in the instruction. The following is a brief overview of the control instruction.

Traditional methods of presentation were used for control group instruction. Subjects were asked to participate in discussion, listen to lecture, conduct one experiment, read, and complete short written and oral assignments each day. Students were given a brief introduction to psychology. The areas covered were: psychology as a science, practical applications of psychology, basic constructs, theories of personality, and Freudian theory. Learning theories were avoided, since they contain material related to the behavioral instruction.

An incentive system was implemented to insure that students remained in the study. Coupons were given for coming to class, and completing daily assignments. On Friday of each week, Students with the required number of coupons, engaged in an activity chosen earlier in the week by the entire group.

The reading assignments listed in this appendix are all from the general psychology text by Engle and Snellgrove (1969).
Course Outline

I. Definition of Psychology
   A. Required reading pp. 2-4.
   B. Suggested reading pp. 5-14.

II. Major Fields in Psychology

III. Psychoanalysis
     A. Required reading pp. 20-23.

IV. Instincts
    A. Required reading pp. 32-34.
    B. Suggested reading pp. 35-38.

V. Parapsychology and Hypnosis
   A. Required reading pp. 23-26, 29-30.
   B. Suggested reading pp. 27-28, 30-32.

VI. Frustration
    A. Prepare for experiment
    B. Required reading pp. 320-322.

VII. Conflict
     A. Required reading pp. 322-325.

VIII. Handling Frustration
      A. Required reading pp. 325-328.
      B. Suggested reading pp. 328-333.
IX. Defenses
A. Required reading pp. 334-342.
B. Suggested readings pp. 342-344.
X. Problem Areas for High School Students
A. Suggested readings pp. 372-376.
Objective: To define psychology

Concepts to be discussed

I. Science
   A. Goal: To better understand man and his environment.
   B. Systematic
   C. Based on experimental data

II. Theory
   A. Personality Theories
      1. Demonstration of class member's own theories of personality.
         a. Individual vs. Society
         b. Defenses
         c. Biological Determination
         d. Master of own fate
         e. Conflict
         f. Self Actualization
         g. Maladjustment as the fault of the individual or society
         h. Importance of early childhood experiences
         i. Man is basically good vs. bad

III. Organism

IV. Behavior

Task: To define Psychology

To answer attitude inventory
Directions: Put an A if you agree with the statement, and a D if you disagree with the statement.

1. The healthiest and happiest people are those that conform to all of society's rules.

2. Most people never look honestly at themselves.

3. People cannot help being what they are, they are just born that way.

4. If a person really wants to do something, all he has to do is try hard.

5. Sometimes people are not sure of right and wrong. They seem to be pulled in two directions.

6. Everyone has a natural drive to do their very best.

7. If a person is mentally ill, it is his own fault.

8. If you had a rough childhood, you really do not have much of a chance.

9. If people could get away with it, they would do a lot more illegal and dishonest things.
Directions: The definition of psychology given in class had four parts. Fill in the blanks of this definition. Explain below what is meant by each term.

Psychology is a (1)____________ based on (2)____________

which explain the (3)____________ of an (4)____________

1. 

2. 

3. 

4. 
Objective: To identify practical applications of psychology

Concepts to be discussed:

I. Psychologists - Individuals
   A. Schools
   B. Hospitals
   C. Clinics

II. Psychiatrists
   A. An M.D.
      1. Drug therapy
   B. Severly disturbed

III. Counselors - Individuals
   A. Personal Problems
   B. Vocational
   C. Educational
   D. Marriage

IV. Sociologists - Groups
   A. How immigrants get along

V. Researcher

Task: To identify the help to be sought in each problem situation
Directions: Below are five problem situations. Choose the person that might be able to help the person described.

Marriage Counselor       Sociologist
Psychiatrist             Clinical Psychologist
School Psychologist      Personal Counselor
Vocational Counselor     Educational Counselor
Researcher

1. John is a sophomore at O.S.U. He would like to study computers. He knows that he has to take a lot of math to do this. John is not sure that he is good enough in math. Who could John see?

2. Joan has just graduated from high school. She has decided that she would like to work with children. Even though she has looked in the paper every day, she has found nothing in child care. Joan feels she ought to consider some other kind of work. Who could Joan see?

3. Ron does not get along with other people. He seems to fight with everyone he knows. Who could Ron see?

4. Mrs. Hanson has a student she is very worried about. He is very intelligent, but he never does any work. Who should she try to get help from?

5. The Grand Shoe Company is in trouble. Everyday, so many employees are absent, that very little work gets done. Mr. Grand wants to know why his employees are absent so often. Who would he ask to study the problem?
Objectives: To identify three basic constructs in Freudian Theory

Concepts to be discussed:

I. Sigmund Freud

II. Importance of early childhood experience

III. Sexual nature of man

IV. Levels of Consciousness
   A. Conscious
   B. Preconscious (foreconscious)
   C. Unconscious

V. Core of Personality
   A. Id
      1. Seek pleasure, avoid pain
      2. No thought to consequences of acts
      3. Unconscious
   B. Ego
      1. Self concept
      2. Defenses
      3. Balance of Id and Superego
   C. Superego
      1. Rules of right and wrong
      2. Learned from parents, teachers, friends, etc.

Task: To label diagram of Id, Ego, and Superego
Freud's Iceberg Concept

Region of Contact
With outer World

Conscious

Preconscious

Unconscious

Ego

Super Ego

Id

Depth
Activity: Psychoanalysis

Directions: Each circle represents one of the parts of personality in Psychoanalytic theory. Label each statement with the correct corresponding term (Id, Ego, and Superego).

Conscious

"People should not steal"

"I am not a thief"

"I want a car"

Unconscious
Objective: To identify behaviors that are instincts

Concepts to be discussed:

I. Inborn vs. learned behavior

II. Species specific behavior

III. Reflex
   A. Not instinctual
   B. Example; child's hand on hot stove

IV. Must be found in all members of species before a chance for learning occurs

V. Animal Instincts
   A. Birds - nest building
   B. Duck - fear of chicken hawk shadow

Task: To identify five animal behaviors, and classify them as instinctual or noninstinctual
Directions: List five animal behaviors. Try to decide if they are instinctual or noninstinctual. Be prepared to defend your position in a class discussion.

1.

2.

3.

4.

5.
Objective: To define Parapsychology and note their clinical usage

Concepts to be discussed:

I. Extrasensory Perception (ESP)
   A. Telepathy - The reading of another's mind
   B. Clairvoyance - Perception of objects
   C. Precognition - Perception of future events

II. Psychokinesis - The influence of thought on objects
   A. Moving a table off the ground without physical force

III. Hypnosis - Speaker: Dr. George Knox, Clinical Psychologist
   A. Clinical vs. Stage Hypnosis
   B. What it is
   C. What it does
   D. What it is for
   E. Clinical uses
      1. Anesthesia
      2. Treatment of mental illness
      3. Weight loss, smoking, phobias

Task: To discuss student's questions on hypnosis
Objective: To demonstrate a change in behavior following frustration

Concepts to be discussed:

I. Demonstration of induced frustration - Experiment

II. Define frustration

III. Characteristic patterns of response

IV. Frustration tolerance

Task: To conduct the experiment
Objective: To investigate changes in behavior following frustration

Materials: Two mazes, one simple and one more complex

Two sets of five jokes

Procedure:

1. E gives S a simple maze to complete. E is very complimentary to S. He tells S that he did it very quickly, smiles, and is pleasant to S.

2. When S is finished, E says he is going to tell S five jokes. S is to rate them on a scale from -5 to +5. E records S's ratings on the table below.

3. E gives S a complex maze to complete. E is very impatient and makes uncomplimentary remarks about S's performance. E finally takes away the maze before S has a chance to complete it.

4. E gives S the second set of jokes, and records S's ratings on the table below.

5. E compares the total ratings of jokes made by S before and after frustration.

<table>
<thead>
<tr>
<th></th>
<th>S likes (+)</th>
<th>S dislikes (-)</th>
<th>+ &amp; - total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before Frustration</td>
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<td>1.</td>
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Demonstration 3

Sheet 1
Demonstration 8

Sheet 2
Objective: To identify different conflict situations

Concepts to be discussed:

I. Conflict - choice between alternatives

II. Approach-Avoidance
   1. Ambivalence

III. Avoidance-Avoidance

IV. Approach-Approach

Task: To identify conflict situations as being of the Ap-Ap, Ap-Av, or the Av-Av type
Directions: Identify the situation below as being Ap-Ap, Ap-Av, or Av-Av.

1. A child wants to pet a dog, but is afraid that it will bite him.

2. John has to take out the garbage everyday after school, and he does not like to do it. If he does not take it out, his mother yells at him.

3. You would like to go swimming, but upon entering the water, you find that it is very cold.

4. Your friends have asked you to a party. Your favorite TV program is on the same night, and you do not like to miss it.

5. You do not like to study for social studies, but there is a big test coming up, and you do not want to do poorly on it.

6. You are dating two girls, and you want to ask one to a concert Saturday.
Objective: To investigate different ways of handling frustration

Concepts to be discussed:

I. Aggression
   A. Extrapunitive
   B. Intropunitive

II. Tackle the problem anyway

III. Ask others for help

IV. Know when to be flexible

V. Consider alternatives

Task: Discussion of different ways of handling frustration
Objective: To investigate and define some defenses

Concepts to be discussed:

I. Compensation
II. Identification
III. Projection
IV. Stereotyped behavior
V. Repression
VI. Regression
VII. Displaced Aggression
VIII. Rationalization
IX. Scapegoating

Task: To list as many examples as you can of the use of each Defense mechanism
Directions: List an example of each defense mechanism. You may use examples from class.

1. Compensation

2. Identification

3. Projection

4. Stereotyped behavior

5. Regression

6. Repression

7. Displaced Aggression

8. Rationalization

9. Scapegoating
Objective: To examine common areas of doubt for high school students

Concepts to be discussed:

I. Areas where high school students might show concern
   A. Activity: Class compiles a list of concerns

II. Things that could be done to offset these doubts

Task: List three things that often worry you. Include why you worry about that particular thing, and what you could do about it.
Directions: List three things that worry you frequently about yourself. Include why you worry about that particular thing and what you could do about it.

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<tr>
<th>Feeling</th>
<th>Why</th>
<th>Possible Solutions</th>
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Sample Coupon

This is a sample of the coupons given to students for daily class attendance, and for the satisfactory completion of quizzes and daily class assignments.

Name _______________________

Has satisfactorily met the requirements for one quiz/assignment.

Teacher _____________________
SELECTED BIBLIOGRAPHY

BOOKS


PERIODICALS


112


UNPUBLISHED MATERIAL

Broden, M., Hall, R. V., and Mitts, B. "The Effect of Self-Recording on the Classroom Behavior of Two Eighth Grade Students." Bureau of Child Research, Juniper Gardens Children's Project, 2021 North Third Street, Kansas City, Ks. 66101.

