

## Chapter 4 Individualized Behavioral Intervention

### Introduction

The theoretical basis for the interventions discussed in this chapter has been covered in the previous chapter. If necessary, you should review that material before continuing in this chapter. Individually planned and conducted behavior modification strategies are very powerful and effective when properly done. The individualized nature of these strategies make them more time consuming than less structured interventions. Therefore, you shouldn't use them unless other less time-consuming interventions did not change a behavior. This presentation cannot go into every detail of the approach. Paul Alberto and Anne Troutman (1998) as well as Alan Kazdin (1994) present good introductory level discussions of the topic. Ammerman and Hersen (1993) and Smith (1993) provide a more advanced discussion on the use of the behavioral approach to treating children.

### Assessment Based Intervention

One early advocate of *functional assessment* for childhood problem behavior was Rutter (1975). In his textbook on child behavior problems, Rutter stated "...similar behaviors may have quite different meanings and serve different functions, and these must be taken into account when planning treatment." The first systematic effort to introduce functional assessment into treatment planning was in the analysis of self-injurious behavior in children with severe disabilities (Iwata, Dorsey, Slifer, Bauman, & Richman, 1982). More recently, Carr (1994) and Mace (1994) have discussed the evolution, current status, and possible future of functional assessment. With the requirements for functional assessment in P.L. 105-17, passed in 1997, the use of this approach in intervention planning should become common practice.

Foster-Johnson and Dunlap (1993) and O'Neil, Horner, Albin, Sprague, Storey, and Newton (1997) provide useful guides to functional assessment for teachers. Functional assessment (FA) rests upon two assumptions. First, FA assumes that most behavior is related to the context in which it occurs. Second, FA assumes that behavior serves some purpose or function for the individual exhibiting it. The assessment process proceeds in a manner similar to the following:

1. Operationally define the problem behavior.
2. Identify antecedents associated with the behavior. Antecedents include not only immediate and overt antecedents but also less obvious antecedents including:
  - a. Environmental variables, e.g., temperature, lighting, noise, room organization, time of day, etc.
  - b. Instructional variables, e.g., type of task, difficulty level of tasks, length of tasks,

- task preferences, etc.
- c. Social variables, e.g., teacher responses (such as directing through questions), peer responses (such as provoking).
- d. Cognitive variables, e.g., misconstruing events, cognitive self-arousal, cognitive anticipation, etc.
- e. Biological variables, e.g., temperament, illness, allergies, medication, hunger, etc.

The initial analysis of a problem behavior should employ an examination of the more obvious variables within the classroom context. Problem behaviors that are still not understandable after considering the more obvious variables should receive further analysis employing data on less common variables.

3. Identify the consequences for the behavior. The event that immediately follows a behavior is usually related to the purpose or function of the behavior, i.e., to obtain something or to avoid something.

One assessment approach that has long been used in the field of applied behavior analysis is well suited to collecting the necessary information for a FA. This approach is a *sequence analysis of a narrative record* (Sulzer-Azaroff & Mayer, 1977). While the emphasis in this approach is upon the use of observational data, other data collection methods can be used when necessary, e.g., interviews, questionnaires, etc. Narrative recording is often done using a three column format for writing down observations. The left column is used to note what conditions and events immediately preceded a target behavior, the center column is used to note the responses performed, and the right column is used to note what events immediately followed the behavior. The sequence analysis involves inspecting such a record across a number of observations for common antecedent and consequent events. When consistencies cannot be found, the analysis should be expanded to include information on variables of a less obvious nature, e.g., biological and cognitive variables.

Once the body of information available is sufficient to suggest a possible explanation for the problem behavior, a hypothesis is stated. For example, *Jane's tantrums are precipitated by task assignments requiring written expression because she has problems with expressing herself in written language and the tantrums result in her being removed from the classroom thereby effectively avoiding the writing tasks.* Once a hypothesis is stated the next step is to plan an intervention derived from the hypothesis. In the case of Jane's tantrums, the intervention might rely upon a stimulus control technique, i.e., change the task so that a different and more easily made response is required. Thus, Jane might be given task assignments that require an oral response to see if this alters the tantrum behavior. If the modified task requirements are successful in eliminating the tantrum behavior, the hypothesis would be validated. This would then lead to an intervention plan involving modified tasks combined with specialized instruction to improve Jane's written expression skills. If the hypothesis is not validated, the data collected is reviewed again for an alternate hypothesis. If an alternate hypothesis is not apparent or the alternatives have been exhausted, additional data on other variables possibly related to the behavior must be collected. The next section

discusses some important considerations in selecting an appropriate technique to use in an individualized intervention plan.

### Selecting Behavioral Interventions

Selecting behavioral interventions for target behaviors should be done in a systematic fashion. A systematic approach provides a defensible rationale for selecting interventions. Good professional practice requires that behavior change agents select only target behaviors for which there is an educational justification and select the least intrusive intervention appropriate for changing a target behavior. The Council for Exceptional Children's Code of Ethics (1983) has at least one provision that directly bears on this requirement:

### **III. Special education professionals engage in professional activities which benefit exceptional individuals, their families, other colleagues, students or research subjects.**

In addition, there is an increasing likelihood that teachers and school systems can be successfully sued for malpractice (Rothstein, 1985). A lack of recognized standards for professional practice have, in part, protected educators in the past. Successful malpractice litigation requires a recognized standard against which to judge professional decisions and behavior. Many professional organizations like the Council for Exceptional Children (1983) have adopted such standards. At least two of the standards for professional practice adopted by CEC bear upon the use of behavioral interventions. Professional should:

**1.2.1.1 Apply only those disciplinary methods and behavioral procedures which they have been instructed to use and which do not undermine the dignity of the individual or the basic human rights of exceptional persons (such as corporal punishment).**

**1.2.1.5 Refrain from aversive techniques unless repeated trials of other methods have failed and then only after consultation with parents and appropriate agency officials.**

Adoption of professional standards increases the chances for successful litigation against both teachers and schools. One aspect of good professional practice is a process for making decisions. The process should aid good decision making and make those decisions defensible. Such a process also provides a mechanism for holding individuals accountable for their intervention choices.

The following process will work in a class, school or on a system-wide basis. However, a broadly based system-wide process is the most desirable. The first step in developing a process for selecting intervention procedures is to develop a system for classifying target behaviors (Center, 1993). To begin developing a process, you must first determine the number of categories to use. Two categories are the minimum for a classification system. A three category system is used in the

illustrative example that follows and includes: Nuisance Behavior, Problem Behavior, and Serious Problem Behavior. Next, you should set criteria for classifying behaviors into the categories. Category criteria make it possible to classify any target behavior that arises. Illustrative criteria are also provided in the discussion below. Finally, classify each target behavior that you must plan an intervention for before selecting that intervention (see example in Figures 4.1 & 4.2).

The following discussion attempts to classify behavioral interventions on the basis of their intrusiveness or restrictiveness. Interventions are organized into Positive Interventions, Negative Interventions and Aversive Interventions. This classification is strictly the author's opinion and is only illustrative. Deitz and Hummel (1978) offer a different organization based on three different considerations. They organize interventions on the basis of effectiveness, efficiency (defined in terms of teacher time required) and ethics. The organization presented here probably comes closest to Deitz and Hummel's ethical dimension for classifying interventions.

#### **Classification One: Nuisance Behavior**

1. Criteria:
  - a. Temporarily tolerable, and
  - b. Moderately disruptive, and/or
  - c. Moderately interferes with learning.

You should use an individualized intervention plan for a behavior in the nuisance category only after trying more efficient techniques. First, you should try routine management procedures like signal control, proximity control, ignoring or a student conference. Next, you should try more structured techniques like self-monitoring or a contract. If you must use a formal, individualized intervention, start with a positive intervention strategy. You should only consider a negative intervention strategy if a positive strategy doesn't work. You can never justify the use of an aversive intervention strategy for nuisance behavior.

Document the failure of a positive intervention with data from a carefully planned and conducted intervention. Documentation of a carefully planned intervention can best be done through the use of standard intervention planning forms. Examples of such forms are illustrated later in this chapter. Documentation of failure can best be done through the data collected while executing an intervention plan. The plan allows the adequacy of the intervention to be evaluated and the data allows the effect of the intervention to be evaluated.

1. **Positive Intervention Strategies:** These strategies have one of two goals. They may try to substitute an appropriate behavior for an inappropriate behavior (see a below). They also may try to change the level of a behavior to bring it within acceptable limits (see b & c below). The following are examples of frequently used positive strategies that employ reinforcement.

## LIST OF SOME POSSIBLE TARGET BEHAVIORS

Talking-out  
Destructiveness  
Physical aggression  
Verbal threats  
Use of a weapon  
Sleeping  
Self-injurious behavior  
Threatening with a weapon  
Lying or Cheating  
Fire setting  
Vandalism  
Disobedience  
Oppositional  
Dawdling  
Argumentative  
Excessive teasing  
Making noises  
Excessive shyness  
Tantrums  
Out-of-seat  
Social withdrawal  
Boasting  
Possession of a weapon  
Overly dependent  
Exhibitionism

Figure 4.1. Sample list of possible target behaviors that might be classified into the illustrative categories discussed.

## TENTATIVE CLASSIFICATION OF POSSIBLE TARGET BEHAVIORS

### **Nuisance Behaviors:**

Talking-out  
Lying or Cheating  
Dawdling  
Argumentative  
Excessive teasing  
Excessive shyness  
Making noises  
Boasting  
Overly dependent  
Sleeping

### **Problem Behaviors:**

Destructiveness  
Verbal threats  
Vandalism  
Disobedience  
Oppositional  
Tantrums  
Out-of-seat  
Social withdrawal  
Possession of a weapon  
Exhibitionism

### **Serious Problem Behaviors:**

Physical aggression  
Threatening with a weapon  
Self-injurious behavior  
Use of a weapon  
Fire setting

Figure 4.2. List of target behaviors tentatively classified into categories for illustrative purposes. In practice, a behavior would be classified only after it was being considered for a planned, individualized intervention.

- a. Differential Reinforcement of Other Behavior (DRO).
  1. Incompatible responses.
  2. Alternative responses.
- b. Differential Reinforcement of a Lower Level of Behavior (DRL).
- c. Differential Reinforcement of a Higher Level of Behavior (DRH).

**Classification Two: Problem Behavior**

2. Criteria:
  - a. A Nuisance Behavior resistant to change, or
  - b. Destructive or Highly disruptive, and/or
  - c. Potentially dangerous, and/or
  - d. Significantly Interferes with learning

For behavior in the problem category that meets only criterion (d), you should use a positive strategy first. You can justify the initial use of a negative intervention strategy if the behavior meets any of the other criteria or some combination of them. When you use a negative strategy, you should combine it with DRO to replace the target behavior. Your goal should always be to build a student's behavioral repertoire, not diminish it. You should only consider an aversive intervention strategy for a target behavior after a negative strategy fails. You should be able to document that the negative strategy did not work. The data should come from a carefully planned and conducted intervention.

2. **Negative Reduction Strategies:** These strategies try to eliminate an inappropriate behavior. The following are examples of frequently used negative strategies.
  - a. Over Correction (OC)
    1. Positive Practice
    2. Restitution
  - b. Response Cost (RC)
  - c. Time-out from Reinforcement (TO-R)

**Classification Three: Serious Problem Behavior**

3. Criteria:
  - a. A Problem Behavior resistant to change
  - b. Clearly dangerous to self or others

You can justify the initial use of an aversive intervention strategy (Center, 1993) for behavior in the serious problem category that meets criterion (b). If the behavior only meets criterion (a) you

can not justify use of an aversive strategy unless the behavior also meets (b) or (c) and (d) in the second category. You should also combine an aversive strategy with DRO. You should not employ aversive strategies without prior administrative and parental approval. If you anticipate the possible need for using an aversive strategy with a special education student, obtain approval in the student's IEP. If the student is not in special education or approval was not sought in the IEP, you should get a signed consent form (see Figure 4.3). The importance of following procedures similar to the above is illustrated in *Hayes v. Unified School Dist.* (1987). In this case, a student sued, under the Civil Rights Act, charging his school system with violation of his due process rights under the Fourteenth Amendment to the U.S. Constitution for confining him in a time-out room. The court ruled against his claim on the grounds that the school had provided his parents with written notification of their intent to use the intervention and had discussed it with them in a parent conference. You should familiarize yourself with recent case law concerning the use of aversive interventions (Lohrmann-O'Rourke, & Zirkel, 1998)

You must be able to document the effectiveness of an aversive strategy to justify its continued use. The one exception is use of an isolation procedure such as a time-out room. You can, under some circumstances, justify such a procedure on protective grounds.

3. **Aversive Reduction Strategies:** These strategies also attempt to eliminate an inappropriate behavior. The following are examples of frequently used aversive strategies.
  - a. Time-out through Isolation (TO-I)
  - b. Presentation of an Aversive Stimulus (PAS)

Remember, whenever you use a negative or aversive reduction strategy, combine it with DRO. By following this procedure, you will always have a strategy that tries to achieve a positive outcome, not just eliminate behavior.

In conclusion, I recommend that school systems develop a system wide decision making system like the one illustrated here. It need not be identical to this system, but it should provide a rational and defensible basis for making ethical decisions about behavior change efforts and for defending those decisions. I also recommend that individual teachers develop their own classroom system in the absence of a system wide policy.

### Individual Behavioral Strategies

A brief review of the major operant-based behavior modification techniques follows. More complete descriptions of these techniques are available in any good textbook on behavior modification.

**Differential Reinforcement of Other Behavior (DRO).** DRO reduces misbehavior by



PARENT PERMISSION FORM

I \_\_\_\_\_ give \_\_\_\_\_ permission to use the following aversive intervention technique(s): \_\_\_\_\_ with my child \_\_\_\_\_ for the purpose of modifying \_\_\_\_\_ behavior that has been judged to be dangerous to my child or others in the school setting or that is highly disruptive or that significantly interfere with my child's or other student's learning and which has not responded satisfactorily to other less drastic intervention techniques. I have had the nature of the above techniques and the manner of their use explained to me. I understand the techniques, their potential dangers and benefits and the conditions of their use. Further, I understand that I may withdraw this permission at any time and for any reason.

Signature: \_\_\_\_\_

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

Witness: \_\_\_\_\_

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

Position: \_\_\_\_\_

Figure 4.3. The above is an illustration of a possible consent form. You are advised to seek legal counsel from your school system's attorney before preparing or using any parent consent form.

increasing appropriate behavior. If you can reinforce and increase appropriate behavior, there will be less time and fewer opportunities for misbehavior. DRO is done in three ways.

1. DRO of Incompatible Behavior (DRO-I). In DRO-I, you look for an appropriate behavior incompatible with misbehavior. For example, in-seat is incompatible with out-of-seat. That is, a student can't do both behaviors at the same time. Once you select an incompatible behavior, reinforce it to increase its occurrence.
2. DRO of Alternative Behavior (DRO-A). In DRO-A, you look for an appropriate behavior that's an acceptable alternative to misbehavior. For example, ask for something instead of take it. These behaviors are not mutually exclusive. That is, a student could do both at the same time. Once you select an alternative behavior, reinforce it to increase its occurrence.
3. DRO-O of an Omitted Behavior (DRO-O). You only use DRO-O in the absence of an incompatible or alternative behavior or if reinforcing one of these was unsuccessful. In DRO-O, you simply reinforce the complete absence of the behavior during a specified period. You should begin with a short interval and progressively lengthen the interval to some criterion length such as a school day.

**Differential Reinforcement of a Low Level of Behavior (DRL)**. DRL reduces misbehavior by decreasing the frequency, duration or intensity of a target behavior. The basic idea in DRL is to reinforce lower levels of the behavior. Often this is done using a series of small steps. Use DRL when you don't want to eliminate a behavior but want to reduce it to an appropriate level. DRL is done in three ways.

1. DRL using Full Sessions (DRL-F). DRL-F is done by setting an interval, such as a class period, and placing a ceiling on a behavior. The ceiling is an upper limit on the behavior that is lower than its usual level. If the behavior stays below the ceiling for the full interval, you reinforce the behavior. For example, if voice level stays below some specified point during an activity period, you reinforce the student. At the end of the interval, you repeat the session.
2. DRL using Variable Intervals (DRL-I). DRL-I is done by setting an interval, such as 15 minutes, and placing a ceiling on a behavior. If the behavior stays below the ceiling, reinforce it at the end of the interval. For example, if the number of times a student is off-task during the interval doesn't exceed the ceiling, you reinforce the student. After reinforcement, the session starts over. However, if at any time during the interval, the level of behavior exceeds the ceiling, you start the session over right then. Thus, only sessions resulting in reinforcement will last for the full interval. Intervals that don't result in reinforcement vary in length.

3. DRL using Spaced Responding (DRL-S). DRL-S is done by setting an interval, for example five minutes. This interval is the length of time you want to separate occurrences of the response. You reinforce responses separated by at least the length of the interval. Don't reinforce any response with less than the set interval separating it from the last similar response. For example, if a student asks too many questions, you might respond only to those questions five or more minutes apart. If you want a longer latency between responses, use a series of small steps. For example, you might begin with five minutes, then move to 10 minutes, then to 15 minutes and so on until you reach the desired latency.

**Differential Reinforcement of a High Level of a Behavior (DRH).** DRH reduces problem behavior by increasing the frequency, duration or intensity of a target behavior. The basic idea in DRH is to reinforce higher levels of the behavior. Often this is done using a series of small steps. Use DRH when you want to increase a behavior to an appropriate level rather than eliminate it. DRH procedures are the reverse of the DRL procedures described above.

1. DRH using Full Sessions (DRH-F). DRH-F is done by setting an interval, for example a class period, and placing a floor under a behavior. The floor is a level of the behavior that is higher than its usual level. If the behavior stays above the floor for the full interval, you reinforce the behavior. For example, if voice level stays above some specified point during an activity period, you reinforce the student. At the end of the interval, the session starts over.
2. DRH using Variable Intervals (DRH-I). DRH-I is done by setting an interval, for example 15 minutes, and placing a floor under a behavior. If the behavior stays above the floor, reinforce it at the end of the interval. For example, if the number of questions a student asks doesn't fall below the floor, you reinforce the behavior. After reinforcement, the session starts over. However, if at any time during the interval, the level of behavior drops below the floor, start the session over right then. Thus, only intervals resulting in reinforcement run for the full length of the session. Intervals that don't result in reinforcement vary in length.
3. DRH using Spaced Responding (DRH-S). DRH-S is done by setting an interval, for example 45 minutes. This interval is the length of time you want to see separate occurrences of a behavior. You reinforce responses separated by no more than the length of the interval. Don't reinforce any response with more than the interval separating it from the last similar response. For example, with a deliberately slow student, you might reward only tasks completed in less than 45 minutes. If you want a short latency between responses, use a series of small steps. For example, you might begin with 45 minutes, then go to 30 minutes, then to 15 minutes and so on until you reached the desired speed.

**Overcorrection (OC).** OC reduces misbehavior by using a consequence with a logical relationship to a misbehavior. OC has both positive and corrective aspects and a punitive aspect. The basic idea here is to have a student make amends for misbehavior. Performance of the appropriate

behavior is the positive and corrective aspect of the strategy. Over performance of the appropriate behavior is the punitive aspect of the strategy. OC is done in three ways.

1. OC through Positive Practice (OC-P). In OC-P a student must repeatedly practice the correct rather than the incorrect way of making a response. For example, if a student always slams a door shut, you might have the student practice opening and closing the door gently 25 times after each occurrence.
2. OC through Restitution (OC-R). In OC-R a student over corrects the effect produced by misbehavior. For example, if a student writes on a wall, you might require the student to scrub down the whole wall. If a student steals something from another student, you might have the student return what was stolen, if possible. You would also have the student apologize and give the victim something of greater value than what was stolen.
3. OC through Combination (OC-C). OC-C is done by simply combining both OC-P and OC-R and applying both techniques to the same misbehavior. For example, a student deliberately scratches the surface of another student's CD while listening to music. You might have the student pay for the damaged CD and give the victim another CD (restitution). Next, you would have the errant student practice how to properly handle a CD while removing it and replacing it in its case 25 times (positive practice).

**Response Cost (RC)**. RC reduces misbehavior by withdrawing a specified amount of a student's reinforcers for misbehavior. RC is simply fining a student for misbehavior. RC is common in token economies, though it isn't limited to token economies. There are three ways to do RC.

1. RC using Bonus Reinforcers (RC-B). RC-B is done by giving a student a certain number of reinforcers free. The reinforcers are taken away in a specified quantity following each instance of misbehavior. For example, a student is annoying a classmate by kicking his or her desk. You might place a bowl on the student's desk with 15 poker chips in it. You would take one each time the student kicks the classmate's desk. At the end of the day, the student can spend any remaining poker chips for free time at one minute per chip.
2. RC using Earned Reinforcement (RC-E). You do RC-E the same way as RC-B with one difference. The student has earned the reinforcers you take away. Usually, the earned reinforcers were for either educational tasks or good conduct behavior.

**Time-out from Reinforcement (TO)**. TO reduces misbehavior by eliminating the opportunity to receive reinforcement. In TO you set a brief period, immediately following misbehavior, during which reinforcement is not available. There are three ways to do TO.

1. TO from Earning Reinforcement (TO-E). TO-E is done by suspending the opportunity to

earn reinforcement for a brief period. Immediately following a misbehavior, tell a student he or she cannot earn reinforcers for a specified time, for example 10 minutes. You can do this simply by informing the student or by taking away his or her point sheet for the specified interval. For example, you might, after a misbehavior, take-up a student's point sheet and tell the student that she or he will not be able to receive points for the next 10 minutes.

2. TO by Suspension of Spending or Consumption (TO-S). TO-S is done by suspending the opportunity to use reinforcers. Tell a student immediately following a misbehavior that he or she cannot use reinforcers for a specified time, for example 30 minutes. The student can still earn reinforcers but can't use them during the period of suspension. For example, if a student is receiving a consumable reinforcer, he or she cannot eat or drink it during the suspension period. If the student is on a token system, he or she cannot exchange tokens for back-up reinforcers during the suspension period. This suspension of spending will only work if token exchange can occur at any time. If a student is in a token system with specified times for spending tokens, make the suspension for the next exchange period. Finally, TO-S can be done if a student misbehaves while engaged in a reinforcing activity. For example, a student misbehaves while playing a game of kickball. You can suspended the student from the game for a specified time to just sit and watch.
  
3. TO by Isolation from Reinforcement (TO-I). TO-I is done by isolating a student from the presumed source of reinforcement. The classroom is usually the presumed source of reinforcement, which is often peer behavior. You do TO-I by immediately isolating a student from sources of social reinforcement for a brief time. This is the procedure associated with the use of a time-out room. TO-I, however, doesn't require a time-out room. You can socially isolate a student behind a partition in a classroom or some similar arrangement. For example, a student engages in a destructive temper tantrum. You can move the student from the classroom to a time-out room until calmed down. For many students, social isolation is an aversive experience. It will reduce misbehavior even if there are no reinforcers available in their classroom for the misbehavior. TO-I should never be used with students who have a significant problem with either self-stimulation or self-injury behaviors. TO-I will often increase the frequency or intensity of such behaviors.

**Presentation of an Aversion Stimulus (PAS).** PAS reduces misbehavior by presenting an aversive stimulus immediately following a misbehavior. This type of punishment can result in undesirable side effects. Therefore, restrict its use to one of two conditions. First, PAS is justifiable if a behavior isn't affected by other techniques and is interfering with learning important behavior. For example, a student engages in self-stimulation behavior, such as twirling and this prevents important behavior for learning such as attending. If other procedures fail to reduce twirling, you may be able to justify presenting a mildly aversive stimulus. For example, you might briefly apply smelling salts immediately following each occurrence. Second, PAS is justifiable if a behavior is dangerous to the student or to others. For example, if a student deliberately trips another student while going down a flight of stairs, you might be able to justify giving the student a paddling.

### Monitoring and Accountability

You should continuously monitor all individually conducted interventions. Continuous monitoring permits adjustment and modification of the intervention as circumstances warrant. Use the data collected during monitoring to evaluate the effectiveness of the intervention. These data can be important for deciding when to end an intervention or to move to a more intrusive intervention. If you must defend your decisions, the data collected will document that you followed reasonable procedures.

You continuously monitor by observing and recording behavior on a graph. The observed behavior should be operationally defined. Recording is done using various techniques. Five commonly used techniques are reviewed below. The data is taken under at least two conditions: Baseline and intervention. Baseline data is analogous to a pre-test. It is data collected on a behavior before starting an intervention. The baseline determines the pre-intervention level of a behavior. The baseline data is for comparative purposes. The baseline should be long enough to ensure representativeness and regularity in the pre-intervention performance level. You also collect data during the intervention. You compare intervention data to baseline data to evaluate the intervention. You plot the data on a graph as it is collected. You regularly inspect the graph as an aid in decision making (see Figure 4.4).

You evaluate the effect of an intervention by *graphic analysis* and *functional criteria*. Graphic analysis is simply comparing baseline with intervention data for a prominent difference between the two phases. Functional criteria determine what constitutes a useful degree of change in a behavior. Base functional criteria either on teacher judgment or the level of the behavior in normal students. You should use the average level of a behavior in normal students as a *performance criterion*. You should also set a *consistency criterion*. A consistency criterion is simply how regularly a behavior needs to meet its performance criterion, for example, five consecutive days. State these functional criteria in your goal for an intervention.

Before beginning data collection, operationally define the target behavior. An operational definition is simply a description of the observable response characteristics of a behavior. This description should also include criteria, when necessary, for the defined behavior. Examples are also useful additions to an operational definition. To illustrate:

*Talk-outs are defined as any audible vocalization without prior permission. Examples of talk-outs include calling out another student's name or whistling without permission from the teacher. Vocalizations such as sneezing or coughing are not talk-outs.*

#### Description of commonly used recording techniques follow:

1. **Event Recording:** This is simply counting the number of times a behavior occurs. Behaviors suitable for event recording are frequent, discrete behaviors such as throwing objects. You

can record behaviors suitable for event recording using a tally sheet or golf counter.

2. **Duration Recording:** This is a measure of the length of a behavior. Behaviors for which

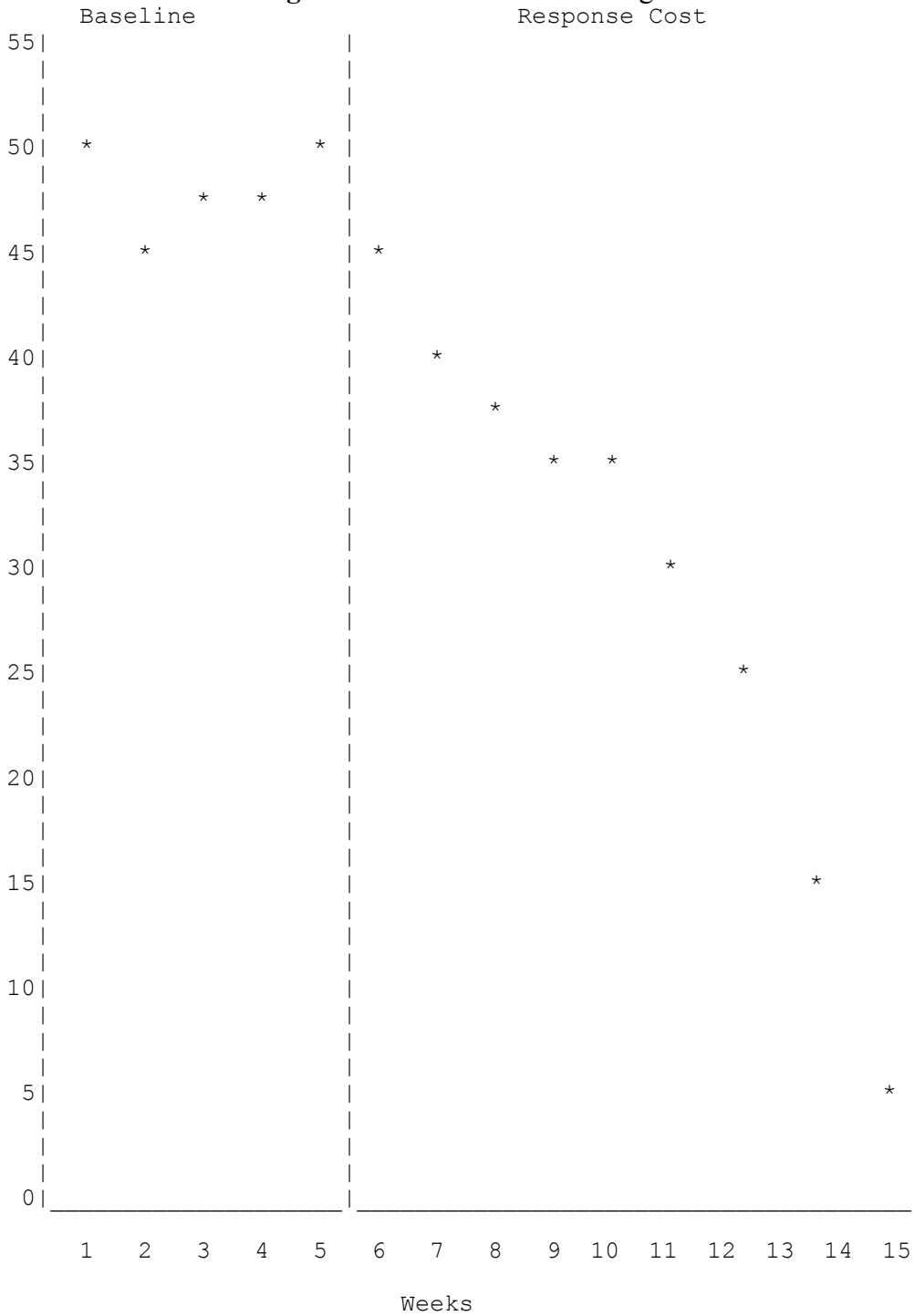


Figure 4.4. A graph illustrating the use of a clinical teaching design to monitor a behavioral intervention.

duration recording is appropriate are behaviors in which time is an important characteristic, such as temper tantrums. You can record the duration of behavior with a stop watch or by noting on a record sheet, for each occurrence, the time the behavior began and the time that it ended.

3. **Latency Recording:** This is a measure of the elapsed time between the presentation of a stimulus and a response to it. Behaviors for which latency recording are suitable include any behavior preceded by a delay in responding, for example delay in following an instruction. You can record the latency of behavior with a stop watch or by noting on a record sheet, for each occurrence, the time the stimulus was presented and the time that a response occurred. It is usually best to set a fixed interval between the stimulus presentations and count each as a new instance. For example, you might give an instruction and wait two minutes to see if it is followed before repeating it. In this example the longest possible latency is two minutes, since the next instruction marks the beginning of a new event. Timing between stimuli for the same behavior should be consistent. You might also need to set a maximum number of stimuli that will be presented for a behavior, for example, three.
4. **Permanent Product Recording:** This is a measure based on some relatively permanent effect of behavior. Behaviors for which permanent product recording are appropriate would be behaviors like marking up the pages in a book or errors in computation.
5. **Sampling Procedures:** These are recording techniques that provide a sample of behavior rather than continuous measurement. Samples have the advantage of reducing observation time. Their disadvantage is that they provide only estimates of performance rather than exact data. Sampling is best employed with behaviors that are relatively frequent in occurrence. Generally speaking, the less time there is between samples the more accurate the data will be. There are three basic ways to employ sampling.
  - a. Timed Samples: Timed samples work best with behaviors where frequency is the most important dimension of the behavior. Usually, event recording is the measurement technique used with timed samples. Timed samples can be done on either a fixed or random basis. When the sampling is fixed, observations are done on a predetermined schedule. For example, observation and recording occurs only during the sixth minute of consecutive 15 minute periods. Thus, if the initial period was from 10:00 to 10:15, observation and recording would take place between 10:06 and 10:07 during the initial period. Similarly, observation and recording would take place during the sixth minute of each subsequent 15 minute period.



Samples taken on a random basis can be done following the above procedure with the observation and recording minute in each period selected on a random basis. That is, assuming you are using a 15 minute period, the observation and recording minute would be randomly selected for each period. Thus, the observation and recording might be the fifth minute during the initial period, during the twelfth minute during the second period, during the seventh minute during the third period and so on. Another way to take a random sample is to treat the entire time available for observation as one period and then use a predetermined number of randomly selected minutes from the period for observation and recording. For example, if the available time is two hours (120 minutes) and you decide to make ten observations, you would randomly select ten, individual minutes between one and 120 in which to observe and record. Of course, each individual minute will have to be translated into clock time within the two hours available.

- b. Partial Interval Recording: Partial interval recording works best for behaviors where frequency is the most important dimension of the behavior. Event recording is usually the measurement technique used. In this procedure, you divide up the available observation time into intervals. For example, if the available time is one hour, you might divide the period into 12, five minute intervals. Observation is continuous within each interval until the behavior occurs. When the behavior occurs, the interval is scored with a single mark. No further observation is necessary until the next interval begins.

Interval records are usually represented by an array of blocks on a sheet of paper. For example, you might have three rows of four blocks each for the illustration above, where each block represents five minutes. An interval is scored by placing either an X or a V in the appropriate block. To use partial interval recording, you must either carefully monitor the passage of time with a clock or watch to make sure you follow the observation schedule. You can also use some external cuing device. One way to use an external cue is to use a watch that can be set to buzz at the start of each interval. Another way to use an external cue is to place beeps on a recording tape at appropriate intervals and then play the tape during the observation time. For example, you would use a 60 minute tape with a beep recorded every five minutes for the illustration given above.

- c. Whole Interval Recording: Whole interval recording works best for behaviors where time is the most important dimension of the behavior. Duration recording is usually the measurement technique used. The procedure works very much like partial interval recording with one exception. An interval is not scored based on simple occurrence of the behavior. An interval is scored only if the behavior occurs through out the interval. For example, if three minute intervals are employed and the initial interval is from 9:00 to 9:03, the interval would only be scored if the behavior was occurring at the beginning of the interval (9:00) and continued to or through the end of the interval (9:03). If the behavior occurred from 9:00 to 9:02, the interval would not be scored.

In the summary chart (see Table 4.1), you can see that there are two dimensions that define most recording procedures. First, there is the behavioral dimension of most interest, i.e., the occurrence of a response or the persistence of a response. Second, there is the precision of measurement dimension, i.e., an exact measure of the behavior or an estimate for the behavior.

### **Behavioral Intervention Planning**

In this section, there are four planning outlines for individualized behavioral interventions. The first outline is for interventions using positive strategies, such as, DRO. The second outline is for negative and aversive strategies, such as, RC. The third outline is for stimulus control strategies, that is, strategies that rely on antecedents. Stimulus control strategies are not as widely employed as strategies that rely on consequences. However, they can be quite effective and probably should be used more than they are. Two examples of stimulus control strategies are the use of background music by Burlison, Center and Reeves (1989) to improve task performance in autistic children and task modification by Center, Deitz and Kaufman (1982) to reduce inappropriate behavior in behavior disordered students. The fourth outline is an advanced planning supplement.

Sometimes individualized strategies are successful without the use of such procedures as: Schedule stretching, successive approximations, prompting and generalization programming. Teachers often choose to use a minimal strategy without supplemental procedures because they are less time consuming. One of the three basic planning forms provided can be used to develop a plan employing a minimal strategy. Behavioral strategies are fairly robust and will often tolerate some violations of their requirements. Basic plans may, however, fail because they are too brief and superficial.

Even minimal reinforcement strategies use some type of reinforcement extraneous to the situation, e.g., candy or computer games in a classroom. When you use such contrived or planned reinforcers, you should identify the natural reinforcer available for the behavior in the setting where the intervention will be conducted. A natural reinforcer is the consequence that maintains other students' behavior, e.g., verbal feedback or grades. You should pair the planned and natural reinforcers during the intervention. You should do this so that the natural reinforcer will acquire some of the incentive value associated with the planned reinforcer. Thus, when you stretch the schedule for and finally terminate the planned reinforcer, the natural reinforcer will have enough incentive value to maintain the target behavior. If no natural reinforcer is apparent, you should do a functional assessment to determine what is maintaining your target behavior in other students. All functional behaviors have natural consequences to maintain them. Occasionally, the consequences may be intrinsic, e.g., sense of accomplishment rather than extrinsic, e.g., grade and therefore not readily identified. In such a situation, you may have to introduce an extrinsic reinforcer that is natural to the setting, so you can phase out the planned reinforcer in your intervention. You probably will not be able to shift your target behavior from planned to intrinsic reinforcement, since maintenance on natural reinforcers is an intermediate step between contrived and intrinsic reinforcement.

Reinforcers were discussed in Chapter Three and a number of examples of reinforcers are

presented in Chapter Five. For review purposes reinforcers can be of the following types:

1. *Consumables*, for example, juice.
2. *Material objects*, for example, a baseball card.
3. *Activities*, for example, shooting basketball.

**Table 4.1.** A chart matching recording techniques with the critical dimension of an observation and the type of data needed.

---

**In Summary**

---

	<b>Occurrence:</b>	<b>Persistence:</b>
<b>Exact Measures:</b>	Event Recording Permanent Product Recording	Duration Recording Latency Recording
<b>Estimate Measures:</b>	Partial Interval Recording Timed Samples	Whole Interval Recording

---

4. *Social events*, for example, verbal praise.
5. *Tokens* that mediate one of the above, for example, points.

The fourth outline is an advanced intervention planning supplement. An advanced plan may include a number components not covered by a basic plan. An advanced plan might use *schedule stretching*, *successive approximations*, *prompts and fading*, and/or *generalization programming*. Prompt introduction and fading will usually be completed for each successive approximation before moving to the next approximation. Schedule stretching should not begin until all successive approximations and prompt fading have been completed. The only exception is when the successive approximations are levels of performance and are dependent on changes in the reinforcement schedule. Finally, the criteria used in the objective, for the terminal behavior, will often be the same criteria used for fading prompts, moving from one approximation to the next, and stretching the reinforcement schedule. Generalization programming can be simultaneous or sequential (see Forms and Examples Addendum at the end of this chapter).

Some advanced intervention plans may include successive approximations and prompting. Successive approximations can be either to the *performance characteristics* (or form of a behavior), e.g., sitting position or visual orientation or to a *performance level*, e.g., accuracy, frequency, duration or intensity of a behavior. For a behavior being shaped, each approximation represents increasing similarity to the terminal behavior desired. Shaping is frequently used to develop new behaviors. For example, teaching a student how to properly tie a shoe. However, you don't always have to shape the performance characteristics for a new behavior. That is, the behavior already exists in its terminal form but its level needs changing. For example, you might have a student who can produce cursive lettering accurately but who writes so lightly that the writing can hardly be read. The target behavior in this example would be intensity level. When shaping such a behavior, each approximation represents increasing similarity to the performance level desired. Whether shaping performance characteristics or levels, you need to set criteria for moving from one approximation to another. The initial approximation should, if possible, be an existing response or performance level. An initial response must bear some resemblance to the terminal behavior desired.

If you use a prompt to aid performance of a behavior, you must remove or fade it. A prompt should be as non-contrived as possible. That is, a prompt should be as much like the natural antecedents for a behavior as you can make it. For example, if you are trying to teach discrimination of *b* from *d*, using red coloring to prompt *b* would be contrived. On the other hand, using an exaggeration in the size of *b* would be making use of a natural characteristic of the stimulus as a prompt. If you must use a contrived prompt, you should progressively modify the prompt to conform to the natural antecedent. Progressive modification requires a sequence of prompts running from most contrived to natural. This modification process is called fading. You must plan criteria to determine when to fade from one prompt to the next prompt in a sequence.

If you use successive approximations and prompts to shape a target behavior, don't fade the prompts until the terminal behavior meets your functional criteria. The only exception is when you

use different prompts for each approximation. In this case, you need to fade prompts after establishing each approximation. If you combine successive approximations to a level of behavior with prompting, there are two ways to fade prompts. First, you can fade the prompts after reaching the terminal level for a behavior, if the prompts are constant. Second, you can fade them as you move through the sequence of approximations, if the prompt changes from step to step. The criteria for changing approximations or fading prompts are usually the functional criteria you set in the goal for your intervention. One exception is when approximations to a level of behavior are performance levels for a behavior. That is, each approximation is a temporary performance criterion approximating the terminal performance level in your objective. The consistency criterion doesn't change.

When you use a reinforcement intervention, you may need to plan for schedule stretching. That is, you will probably begin the intervention using a continuous schedule and end it on some intermittent schedule. You need to specify both the initial schedule and the terminal schedule in your plan. You also need to plan the size steps to use when moving from the initial to the terminal schedule. You must set criteria for taking each schedule stretching step. These criteria will usually be the same criteria set in the intervention goal.

Schedules are of two basic types, *continuous* and *intermittent*. A continuous schedule simply means that a reinforcer is presented for each appropriate response. Intermittent schedules are of several types. *Ratio schedules* are based on occurrence of responses. Ratio schedules can be of two types, fixed and variable. A fixed ratio schedule is one where one reinforcer is given for some fixed number of responses. For example, a FR 3 schedule means that there is one reinforcer for every three appropriate responses. A variable ratio schedule is one where one reinforcer is given for some average number of responses. For example, a VR 5 schedule means that while the first reinforcer may come after the third response, the second after the seventh response and the last reinforcer after the fifth response, the average number of responses between reinforcers is five ( $3+7+5=15$  [responses] and  $15/3$  [reinforcers] =5).

*Interval schedules* are based on the passage of time. Interval schedules can also be of two types, fixed and variable. For example, a FI 3" schedule means that there is one reinforcer given for the first appropriate response that occurs after at least three minutes has passed since the last reinforced response. A VI 5" schedule means that there is an average interval of five minutes between opportunities for reinforcement. For example, in a VI 5" schedule there might be a requirement for at least three minutes to have passed before the first response can be reinforced, at least seven minutes since the first reinforcement was given before a second opportunity and at least five minutes since the second reinforcement was given before a third opportunity exists for reinforcement ( $3+7+5=15$  [minutes] and  $15/3$  [reinforcers] =5). Note that the computation is based not on actual elapsed minutes but rather on the minimum number of minutes between opportunities. While an opportunity may arise after three minutes, four or five minutes may actually pass before a response occurs that warrants reinforcement.

A continuous schedule is best for establishing a new response or strengthening a weak response. Fixed ratio schedules are best for establishing relative high response rates. Fixed interval schedules are not very useful because they tend to produce pauses in responding after each reinforcement. Variable ratio schedules will produce very high response rates. Variable ratio schedules will also produce good resistance to extinction of a response (generalization of the response across time). Variable interval schedules will produce very steady or consistent responding. Variable interval schedules will also produce the greatest resistance to extinction of a response. One should use a ratio schedule when rapid responding is desired and a variable interval schedule when steady responding is desired.

You also need a criterion for *schedule strain*. This is a criterion to alert you to the possibility that you may need to change the criteria for stretching the schedule. The criterion for schedule strain is an unacceptable level of *response decay* following a stretching operation. Meeting this criterion usually means one of two meanings. First, you stretched too much and need to change the size of the schedule steps. Second, you stretched too soon and need to change your consistency criterion. Sometimes you may have both problems.

You should plan for generalization of the effect produced by an intervention. Thinning the reinforcement schedule will help the behavior generalize across time, particularly if you use a variable ratio or interval schedule. Shifting a response to a natural reinforcer before terminating a planned reinforcer will also help maintain a response. However, it may be important that the behavior occur in some other setting such as another classroom. It may also need to occur in the presence of some other agent such as a teaching aide. To produce these types of generalization, you must associate the intervention with the other setting(s) or agent(s). One way to associate an intervention with different settings is to conduct the intervention concurrently or sequentially in the settings. A way to associate an intervention with different agents is to have all agents concurrently or sequentially implement an intervention. When the generalization agent is also in a different setting the two types of generalization are combined. Planned generalization represents an ecological extension of an intervention.

In most plans you need to consider two types of intervention failure. First, plan what you will do if the intervention temporarily breaks down under trying circumstances. You need to have a planned back-up strategy, such as physical management, with criteria to tell you when to use it. Second, plan what you will do if the intervention is unsuccessful. You need to have criteria that define when failure has occurred and have an alternative intervention selected. Often the alternative will be from among the strategies at the next level of intervention intrusiveness.

### **Planning Forms and Examples Addendum**

The following planning forms and examples are guides to planning individualized behavioral interventions. If something is not clear to you about one of the blank forms, careful inspection of the example should clarify the item in question. It is not possible to design a form that will fit every conceivable situation. Therefore, you will at times need to adapt the forms to better fit your intervention.

There is a blank form for each type of intervention. These blanks are followed by examples of completed forms. There is an example for each type of basic plan and an example of an advanced supplement for each basic plan. When you use an advanced supplement, you will, in most cases, complete successive approximations first, then prompt fading and then schedule stretching. Finally, generalization across agents or settings will be done either concurrently or last depending on the approach used. If you are not using all of the advanced procedures, the order of implementation remains the same, except the procedure not being used is removed from the sequence.

**POSITIVE INTERVENTION, PLAN I**  
(Positive Strategies)

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

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

1. The target behavior: \_\_\_\_\_

(Note: This will be the substitute behavior, not the problem behavior, in interventions using DRO)

2. Objective for the target behavior:

3. Operational definition for the target behavior:

4. The measurement technique: \_\_\_\_\_

a. Description of the data recording procedures:

b. Conditions during baseline observations:

c. Plan an A-B graph format, with labels, to record data on.

5. Reinforcement strategy: \_\_\_\_\_





- a. Criteria for implementing the back-up strategy:
  - b. Description of the back-up procedure:
- 
7. Criteria for failure and termination of the intervention:
  8. The alternative intervention if the planned intervention fails, i.e., what you will do if this intervention doesn't work:

**NEGATIVE INTERVENTION, PLAN II**  
(Negative and Aversive Strategies)

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

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

1. The target behavior: \_\_\_\_\_  
(Note: The actual problem behavior.)

2. Objective for the target behavior:

3. Operational definition for the target behavior:

4. The measurement technique: \_\_\_\_\_

a. Description of the data recording procedures:

b. Conditions during baseline observations:

c. Plan an A-B graph format, with labels, to record data on.

5. Intervention strategy: \_\_\_\_\_

a. Rationale:

- b. What appropriate behavior will be established, concurrently, with this elimination procedure?
- c. Description of the intervention procedure:
  
- d. Schedule for implementing the intervention:
  - 1. \_\_\_ Daily
    - a. \_\_\_ Continuously
    - b. \_\_\_ Intermittently (Specify time(s)\_\_\_\_\_)
  - 2. \_\_\_ Less than daily (Specify schedule\_\_\_\_\_)
    - a. \_\_\_ Continuously
    - b. \_\_\_ Intermittently (Specify time(s)\_\_\_\_\_)
- 6. The back-up strategy for the intervention if the problem behavior temporarily gets out of control or otherwise requires attention:\_\_\_\_\_

  - a. Criteria for implementing the back-up strategy:
  - b. Description of the back-up procedure:

- 7. Criteria for failure and termination of the intervention:
- 8. The alternative intervention if the planned intervention fails, i.e., what you will do if this intervention doesn't work:

**ANTECEDENT INTERVENTION, PLAN III**  
(Stimulus Control Strategies)

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

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

1. The target behavior: \_\_\_\_\_

(Note: This may be a problem behavior to be reduced or an appropriate behavior to be increased.)

2. Objective for the target behavior:

3. Operational definition for the target behavior:

4. The measurement technique: \_\_\_\_\_

a. Description of the data recording procedures:

b. Conditions during baseline observations:

c. Plan an A-B graph format, with labels, to record data on.

5. Stimulus Control Strategy:

a. Description of the intervention procedure:

6. Schedule for implementing the intervention:
  - a. \_\_\_ Daily
    1. \_\_\_ Continuously
    2. \_\_\_ Intermittently (Specify time(s)\_\_\_\_\_)
  - b. \_\_\_ Less than daily (Specify schedule\_\_\_\_\_)
    1. \_\_\_ Continuously
    2. \_\_\_ Intermittently (Specify time(s)\_\_\_\_\_)
7. The back-up strategy for the intervention if the problem behavior temporarily gets out of control or otherwise requires attention: \_\_\_\_\_
  - a. Criteria for implementing the back-up strategy:
  - b. Description of the back-up procedure:
8. Criteria for failure and termination of the intervention:
9. The alternative intervention if the planned intervention fails, i.e., what you will do if this intervention doesn't work:

NOTES:

**ADVANCED INTERVENTION SUPPLEMENT, PLAN IV**

(Use ONLY in conjunction with a Basic Intervention Plan.)

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

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

1. The target behavior: \_\_\_\_\_

2. Reinforcement procedures:

a. Planned reinforcer: \_\_\_\_\_

b. Natural reinforcer: \_\_\_\_\_

c. The reinforcement schedules:

1. Initial schedule: \_\_\_\_\_

2. Terminal schedule: \_\_\_\_\_

3. Schedule increment: \_\_\_\_\_

d. Schedule stretching criteria:

1. Performance criterion: \_\_\_\_\_

2. Consistency criterion: \_\_\_\_\_

(Note: The two criteria above will often be the same criteria in the objective for the target behavior.)

3. Schedule strain criterion: \_\_\_\_\_

(Note: If shaping the performance characteristics of a response, don't begin schedule stretching until the final approximation has been established and/or all planned prompts have been faded.)

3. Intervention procedures:

a. If using successive approximations to the target behavior:

1. Specify the approximations:

2. Specify the criteria for shifting from one approximation to the next:

(Note: When approximations are performance levels and not performance characteristics, schedule stretching and successive approximations may be concurrent.)

b. If using prompts in the intervention:

1. Specify the prompt hierarchy from the initial to the terminal prompt:

2. Criteria for fading the prompt(s):

a. Performance criterion: \_\_\_\_\_

b. Consistency criterion: \_\_\_\_\_

(Note: The two criteria above will often be the same criteria in the objective for the target behavior.)

3. Describe procedures for fading prompt(s):





**POSITIVE INTERVENTION, PLAN I**  
(Example for Basic Plan I)

Student: Brian Date: 4-11-92

Teacher: Mr. Daniel

1. The target behavior: Completion of assignments

(Note: This is a substitute behavior, not the problem behavior, since the intervention uses DRO)

2. Objective for the target behavior:

Following intervention, Brian's assignment completion will increase to at least 80% on eight out of ten assignments.

3. Operational definition for the target behavior:

Completion of an assignment is defined as 80% accuracy on an entire task within whatever time limits have been specified.

4. The measurement technique: Permanent Product Recording

a. Description of the data recording procedures:

Each assignment will be graded at the end of the task period. Percentage scores will be recorded both on the assignment and in a student grade log.

b. Conditions during baseline observations:

Baseline will be taken under normal classroom routine. Assignments will be given out, instructions provided, a time limit specified and questions answered. No reminders or prompts will be given.

c. Plan an A-B graph format, with labels, to record data on.

(Note: Not provided in this example.)

5. Reinforcement strategy: DRO-I

- a. Planned reinforcer: 10 min. free-time tokens
- b. Natural reinforcer to be paired with the planned reinforcer for maintenance: Grades and Praise
- c. The initial reinforcement schedule: CRF 1 token per task.
- d. Description of the intervention procedure:

The procedures include the conditions in effect during baseline plus the reinforcement contingency. The reinforcement contingency will be explained to Brian privately. At the end of each task period Brian's work will be scored and the grade written on the assignment. If the criterion for reinforcement has been met, Brian will get a token and social reinforcement. Brian will be permitted to spend free-time tokens during the last class period each day.

- e. Schedule for implementing the intervention:
  - 1.  Daily
    - a.  Continuously
    - b.  Intermittently (Specify time(s) \_\_\_\_\_)
  - 2.  Less than daily (Specify schedule \_\_\_\_\_)
    - a.  Continuously
    - b.  Intermittently (Specify time(s) \_\_\_\_\_)
- 6. The back-up strategy for the intervention if the problem behavior for which the target behavior is a substitute, temporarily gets out of control or otherwise requires attention:  
Remove Brian from the classroom.
  - a. Criterion for implementing the back-up strategy:  
Brian's work refusal becomes too disruptive for classwork to continue normally.
  - b. Description of the back-up procedure:

Brian will be sent to Mr. Hardtack's office until the next period. If he refuses to go, he will be escorted or a student will be sent for Mr. Hardtack. All missed work will be made-up during a non-academic period or given as homework.

7. Criteria for failure and termination of the intervention:

Five consecutive days without attaining 80% accuracy on at least one assignment.

8. The alternative intervention if the planned intervention fails, i.e., what you will do if this intervention doesn't work:

Add after school detention to the DRO-I strategy. All unfinished work will follow Brian to detention.

**ADVANCED INTERVENTION SUPPLEMENT, PLAN IV**  
(Example for Basic Plan I)

Use ONLY in conjunction with a basic intervention plan.

Student: Brian \_\_\_\_\_ Date: 4-11-92 \_\_\_\_\_

Teacher: Mr. Daniel \_\_\_\_\_

1. The target behavior: Completion of assignments \_\_\_\_\_

2. Reinforcement procedures:

a. Planned reinforcer: 10 min. free-time tokens \_\_\_\_\_

b. Natural reinforcer: Grades and praise \_\_\_\_\_

c. The reinforcement schedules:

1. Initial schedule: CRF 1 token per assignment \_\_\_\_\_

2. Terminal schedule: FR5 1 token per 5 assignments \_\_\_\_\_

3. Schedule increment: Ratio will increase by 1's \_\_\_\_\_

d. Schedule stretching criteria:

1. Performance criterion: Current performance approximation (see below)

2. Consistency criterion: 8 out of 10 \_\_\_\_\_

(Note: The two criteria above are the same criteria in the objective for the target behavior in the basic plan.)

3. Schedule strain criterion: 50% reduction in gain over baseline.

(Note: If shaping the performance characteristics of a response, don't begin schedule stretching until the final approximation has been established and/or all planned prompts have been faded.)

3. Intervention procedures:

a. If A using successive approximations to the target behavior:

1. Specify the approximations:

Ten percent approximations to the 80% performance level beginning at 50%, that is, 50, 60, 70, and then 80%

2. Specify the criteria for shifting from one approximation to the next:

A shift will occur when the current approximation to the target performance level has been achieved on 8 out of 10 assignments.

(Note: When approximations are performance levels and not performance characteristics, schedule stretching and successive approximations may be concurrent.)

b. If using prompts in the intervention:

1. Specify the prompt hierarchy from the initial to the terminal prompt:

Up to 3 verbal prompts will be given, one following each 5 min. of work refusal. The prompt will be: "Brian, don't forget, if you get \_\_\_% correct on this assignment, you can earn free-time."

2. Criteria for fading the prompt(s):

a. Performance criterion: \_Current performance approximation (see above)

b. Consistency criterion: \_8 out of 10 \_\_\_\_\_

(Note: The two criteria are the same criteria in the objective for the target behavior in the basic plan.)

3. Describe procedures for fading prompt(s):

Up to 3 prompts at the 50% criterion; up to 2 prompts at the 60% criterion; no more than 1 prompt at the 70% criterion and no prompts at the 80% criterion.

4. Describe procedures for generalization as appropriate:

a. GEN across agents:

Mrs. Assist, the aide, will implement the same procedures concurrently with Mr. Daniel in the special education classroom.

b. GEN across settings:

Mrs. Assist will accompany Brian to Mrs. Reged's room and use the same procedures there. Mrs. Assist will progressively transfer responsibility for the procedures to Mrs. Reged and then withdraw from the class.

(Note: This results in generalization across settings and a second generalization across agents.)

**NEGATIVE/AVERSIVE INTERVENTION PLAN, PLAN II**  
(Example for Basic Plan II)

Student: Leo Date: 10-30-91

Teacher: Ms. Lyonhart

1. The target behavior: Verbal provoking

(Note: This is the problem behavior.)

2. Objective for the target behavior:

Verbal provoking will decrease by 85% from the mean baseline level for two consecutive weeks.

3. Operational definition for the target behavior:

Verbal provoking is defined as any remark, audible to the teacher, made by Leo to another student that contains emotion laden words likely to arouse a negative response. Examples include: "Only a fag would wear that shirt." Or "Is your mama still a retard?"

4. The measurement technique: Event Recording

a. Description of the data recording procedures:

A golf counter will be used to tally provocative remarks. The tally will cover two consecutive periods on three days each week. The per period average will be computed each day to summarize the data.

b. Conditions during baseline observations:

Baseline will include all of Leo's resource room time (2 periods, three days per week). Leo will continue to receive verbal reprimands for making provocative remarks.

c. Plan an A-B graph format, with labels, to record data on.

(Note: Not provided in this example.)

5. Intervention strategy: RC-B



a. Rationale:

The verbal provoking behavior frequently results in significant disruption of the instructional program and at times poses a threat to safety due to aggressive responses that sometimes elicited from the provoked student.

b. What appropriate behavior will be established, concurrently, with this elimination procedure?

A social skill: Making positive statements about others.

c. Description of the intervention procedure:

Each day that Leo comes to the resource room, he will be given a bowl of tokens equal to the mean number of provocative remarks recorded during baseline. When Leo makes a provocative remark, he will be fined one token (arguments about fines will result in additional fines). If Leo can keep 85% of the tokens he receives during a week, he will get to participate in a week-end activity provided by his parents and negotiated by the teacher.

d. Schedule for implementing the intervention:

1. \_\_\_ Daily

a. \_\_\_ Continuously

b. \_\_\_ Intermittently (Specify time(s)\_\_\_\_\_)

2. X Less than daily (Specify schedule M W F \_\_\_\_\_)

a. \_\_\_ Continuously

b. X Intermittently (Specify time(s) 10:00-11:30)

6. The back-up strategy for the intervention if the problem behavior temporarily gets out of control or otherwise requires attention: Detention Class \_\_\_\_\_

a. Criterion for implementing the back-up strategy:

Leo receives three consecutive fines for arguing, exhausts his tokens, or becomes highly disruptive.

b. Description of the back-up procedure:

Leo will be sent to detention for the rest of the class period. If he will not go, a student will be sent for Mr. Firmgrip. Any missed work will be given as homework.

7. Criteria for failure of the intervention:

Three consecutive weeks in which Leo fails to meet the criterion for reinforcement at least once.

8. The alternative intervention if the planned intervention fails, i.e., what you will do if this intervention doesn't work:

Ten minutes of after school detention for each recorded provocative remark.

NOTE: Negative and aversive intervention strategies should be accompanied by positive intervention strategies to enhance behavioral repertoire.

**ADVANCED INTERVENTION SUPPLEMENT, PLAN IV**  
(Example for Basic Plan II)

Use ONLY in conjunction with a basic intervention plan.

Student: Leo \_\_\_\_\_ Date: 4-11-92 \_\_\_\_\_

Teacher: Ms. Lyonhart \_\_\_\_\_

1. The target behavior: Verbal provoking \_\_\_\_\_
2. Reinforcement procedures:
  - a. Planned reinforcer: NA \_\_\_\_\_
  - b. Natural reinforcer: NA \_\_\_\_\_
  - c. The reinforcement schedules:
    1. Initial schedule: NA \_\_\_\_\_
    2. Terminal schedule: NA \_\_\_\_\_
    3. Schedule increment: NA \_\_\_\_\_
  - d. Schedule stretching criteria:
    1. Performance criterion: NA \_\_\_\_\_
    2. Consistency criterion: NA \_\_\_\_\_

(Note: The two criteria above will often be the same criteria in the objective for the target behavior.)

3. Schedule strain criterion: NA \_\_\_\_\_

(Note: If shaping the performance characteristics of a response, don't begin schedule stretching until the final approximation has been established and/or all planned prompts have been faded.)

3. Intervention procedures:

a. If using successive approximations to the target behavior:

1. Specify the approximations:

Each approximation will be equal to 15% of the baseline mean and will begin at 25%, that is, 25, 40, 55, 70 and then 85%

2. Specify the criteria for shifting from one approximation to the next:

A shift will occur when the current approximation to the target performance level has been achieved for two consecutive weeks.

(Note: When approximations are performance levels and not performance characteristics, schedule stretching and successive approximations may be concurrent.)

b. If using prompts in the intervention:

1. Specify the prompt hierarchy from the initial to the terminal prompt: NA

2. Criteria for fading the prompt(s):

a. Performance criterion: NA

b. Consistency criterion: NA

(Note: The two criteria above will usually be the same criteria in the objective for the target behavior.)

3. Describe procedures for fading prompt(s): NA

4. Describe procedures for generalization as appropriate:

a. GEN across agents:

After the intervention is successful in the resource room it will be implemented by Leo's regular class and gym teacher.

b. GEN across settings:

When the intervention is successful for all three teachers, there will be generalization across both agents and settings.

**ANTECEDENT INTERVENTION, PLAN III**  
(Example for Basic Plan III)

Student: Easy Dude Date: 5-1-94

Teacher: Mr. Whitewater

1. The target behavior: Mis-reading written directions

(Note: This may be a problem behavior to be reduced or an appropriate behavior to be increased.)

2. Objective for the target behavior:

Easy Dude will read the directions on assignments and correctly act on the critical words in the directions with 100% accuracy in 9 out of 10 consecutive trials.

3. Operational definition for the target behavior:

Miss reading directions is defined as completing assigned tasks using procedures different from those asked for in the directions, e.g., comparing instead of contrasting.

4. The measurement technique: Event Recording

a. Description of the data recording procedures:

Each time Easy completes an assignment, Mr. Whitewater will inspect the work and determine if the directions were followed. If so, a plus (+) will be recorded. If not, a minus (-) will be recorded. The date and time will also be recorded.

b. Conditions during baseline observations:

Conditions during baseline will be the normal classroom conditions under which assignments are given without any modification to the directions.

c. Plan an A-B graph format, with labels, to record data on.

(Note: Not provided in this example.)

5. Stimulus Control Strategy:

a. Description of the intervention procedure:

The intervention will be stimulus exaggeration. The written directions Easy receives will have all critical words highlighted with a yellow highlighting pen.

6. Schedule for implementing the intervention:

a.  Daily

1.  Continuously

2.  Intermittently (Specify time(s) 9 to 10:00 am)

b.  Less than daily (Specify schedule \_\_\_\_\_)

1.  Continuously

2.  Intermittently (Specify time(s) \_\_\_\_\_)

7. The back-up strategy for the intervention if the problem behavior temporarily gets out of control or otherwise requires attention: NA

a. Criteria for implementing the back-up strategy: NA

b. Description of the back-up procedure: NA

8. Criteria for failure of the intervention:

Five consecutive procedures on which Easy employs the wrong procedures.

9. The alternative intervention if the planned intervention fails, i.e., what you will do if this intervention doesn't work:

Add DRO-I to the stimulus control intervention.

NOTES:

**ADVANCED INTERVENTION SUPPLEMENT, PLAN IV**  
(Example for Basic Plan III)

(Use ONLY in conjunction with a Basic Intervention Plan.)

Student: Easy Dude \_\_\_\_\_ Date: 5-1-94 \_\_\_\_\_

Teacher: Mr. Whitewater \_\_\_\_\_

1. The target behavior: Miss reading written directions \_\_\_\_\_

2. Reinforcement procedures:

a. Planned reinforcer: NA \_\_\_\_\_

b. Natural reinforcer: Task Success \_\_\_\_\_

c. The reinforcement schedules:

1. Initial schedule: NA \_\_\_\_\_

2. Terminal schedule: NA \_\_\_\_\_

3. Schedule increment: NA \_\_\_\_\_

d. Schedule stretching criteria:

1. Performance criterion: NA \_\_\_\_\_

2. Consistency criterion: NA \_\_\_\_\_

(Note: The two criteria above will often be the same criteria in the objective for the target behavior.)

3. Schedule strain criterion: NA \_\_\_\_\_

(Note: If shaping the performance characteristics of a response, don't begin schedule stretching until the final approximation has been established and/or all planned prompts have been faded.)

3. Intervention procedures:

a. If using successive approximations to the target behavior:

1. Specify the approximations:

NA

2. Specify the criteria for shifting from one approximation to the next: NA

(Note: When approximations are performance levels and not performance characteristics, schedule stretching and successive approximations may be concurrent.)

b. If using prompts in the intervention:

1. Specify the prompt hierarchy from the initial to the terminal prompt:

a. Full highlighting of critical words in yellow.

b. Highlighting of the initial letter and underlining of each critical word.

c. Highlighting of the initial letter only of each critical word.

d. No stimulus exaggeration of any kind.

2. Criteria for fading the prompt(s):

a. Performance criterion: 100% correct \_\_\_\_\_

b. Consistency criterion: 9 of 10 (consecutive)

(Note: The two criteria above will often be the same criteria in the objective for the target behavior.)

3. Describe procedures for fading prompt(s):

When the above criteria are met under the full prompt condition (1a above) the second prompt condition (1b above) will be begun. When the criteria are met under the second condition, the third prompt condition will be begun. When the criteria are met under the third prompt condition, the normal, pre-intervention, condition will be returned to.

4. Describe procedures for generalization as appropriate (optional):



a. GEN across agents:

All of Easy's regular class teachers will implement the intervention concurrently.

b. GEN across settings:

The procedure will be implemented concurrently in all of the other classrooms attended by Easy.

### **Activities**

1. Conduct a functional analysis of a target behavior.
2. Develop a list of problem behaviors exhibited by your students.
3. Develop a classification system for the behaviors listed in (2).
4. Operationally define a behavior, select an appropriate recording technique, observe the behavior and collect data on the behavior.
5. Plan an individualized behavioral intervention for one of the problem behaviors from the list in (1) and select the intervention to be used based on the classification of the behavior in (3).

## References

- Alberto, P., & Troutman, A. (1998). Applied behavior analysis for teachers (5th ed.). Columbus, OH: Merrill.
- Ammerman, R., & Hersen, M. (1993). Handbook of Behavior Therapy with Children and Adults: A Developmental and Longitudinal Perspective. Needham Heights, MA: Allyn and Bacon.
- Burleson, S., Center, D., & Reeves, H. (1989). The effects of background music on task performance in psychotic children. The Journal of Music Therapy, 26, 198-205.
- Carr, E. (1994). Emerging themes in the functional analysis of problem behavior. Journal of Applied Behavior Analysis, 27, 393-399.
- Center, D. B. (1993). Selecting Behavioral Interventions. Paper presented at the Annual Conference on Severe Behavior Disorders in Children and Youth, Tempe, AZ.
- Center, D., Deitz, S., & Kaufman, M. (1982). Student ability, task difficulty, and inappropriate classroom behavior. Behavior Modification, 6, 355-374.
- Council for Exceptional Children (1983). Code of ethics and standards for professional practice. Exceptional Children, 50, 205-209.
- Deitz, S., & Hummel, J. (1978). Discipline in the schools. Englewood Cliffs, NJ: Educational Technology Publications.
- Foster-Johnson, L., & Dunlap, G. (1993). Using functional assessment to develop effective, individualized interventions for challenging behaviors. Teaching Exceptional Children, 25(3), 44-50.
- Hayes v. Unified School Dist., No. 377, 669 F.Supp. 1519 (D.Kan.1987).
- Iwata, B., Dorsey, M., Slifer, K., Bauman, K., & Richman, G. (1982). Toward a functional analysis of self-injury. Analysis and Intervention in Developmental Disabilities, 2, 3-20.
- Kazdin, A. (1994). Behavior modification in applied settings (5th ed.). Pacific Grove, CA: Brooks/Cole Pub.
- Lohrmann-O'Rourke, S., & Zirkel, P. (1998). The case law on aversive interventions for students with disabilities. Exceptional Children, 65(1), 101-123.

Mace, F. (1994). Functional analysis: contributions and future directions. Journal of Applied Behavior Analysis, 27, 385-392.

O'Neil, R., Horner, R., Albin, R., Sprague, J., Storey, K., & Newton, J. (1997). Functional assessment and program development for problem behavior: a practical handbook. Pacific Grove, CA: Brooks/Cole Publishing.

Rothstein, L. F. (1985). Accountability for professional misconduct in providing education to handicapped children. Journal of Law & Education, 14, 349-394.

Rutter, M. (1975). Helping troubled children. New York: Plenum Press.

Smith, M. (1993). Behavior modification for exceptional children and youth. Boston : Andover Medical Publishers.

Sulzer-Azaroff, B., & Mayer, G. (1977). Applying behavior-analysis procedures with children and youth. New York: Holt, Rinehart, and Winston.