



Differential Reinforcement



Definition

Differential reinforcement is the reinforcement of one form of behavior and not another, or the reinforcement of a response under one condition but not another. Differential reinforcement uses positive reinforcement to differentiate or separate **appropriate** student behavior from **inappropriate** behavior by increasing one while decreasing the other.

Things to Do

- ✓ Select behaviors to be decreased or increased.
- ✓ Select alternative, incompatible, or communicative behaviors to be taught.
- ✓ Determine time interval.
- ✓ Set criterion.
- ✓ Ignore inappropriate behaviors.
- ✓ Monitor the student's performance.

There are six strategies that comprise or make up differential reinforcement:

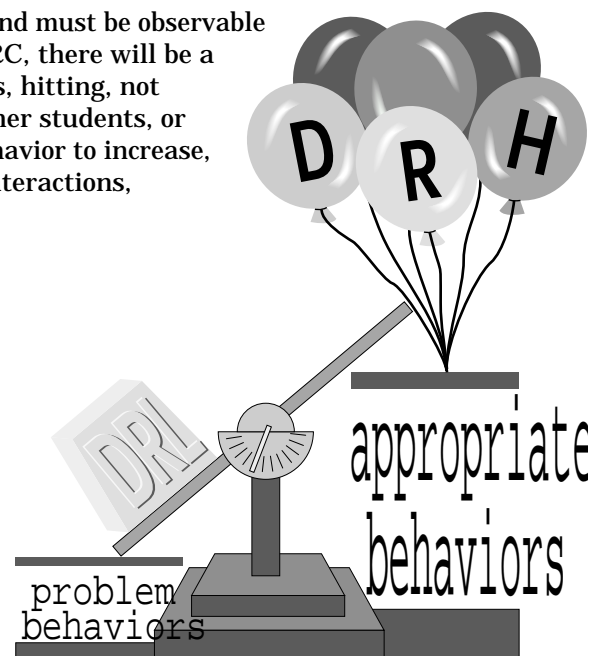
Differential **R**einforcement

of

O ther behaviors	DR O	The instructor ignores the problem behavior while reinforcing any appropriate/replacement behavior within a defined period of time.
H igh rates	DR H	The instructor reinforces the individual only after the appropriate behavior has occurred at a predetermined high rate.
L ow rates	DR L	The instructor reinforces the individual only after the target behavior occurs at a predetermined low rate.
A lternative behavior	DR A	The instructor reinforces an alternative behavior to the inappropriate behavior and ignores the inappropriate behavior.
I ncompatible behavior	DR I	The instructor reinforces an appropriate behavior that actually interferes (physically or functionally incompatible) with the inappropriate behavior and ignores the inappropriate behavior.
C ommunicative behavior	DR C	The instructor ignores inappropriate behavior and reinforces a communication skill that leads to a needed reward, activity, or alternative.

Select behaviors to be decreased or increased.

These behaviors should be objectively defined and must be observable and measurable. For DRO, DRI, DRA, and DRC, there will be a specific behavior to decrease, such as talk-outs, hitting, not following directions, out of seat, disrupting other students, or tantrums. For DRH, there will be a specific behavior to increase, such as contributing in class, positive social interactions, getting to class on time, or task completion.



✓ Select alternative, incompatible, or communicative behaviors to be taught.

For **DRA**, define an alternative behavior(s). This is **any** behavior that can serve as an alternative to the inappropriate behavior. For example, working on an assignment is an alternative behavior (DRA) to wandering around the classroom.

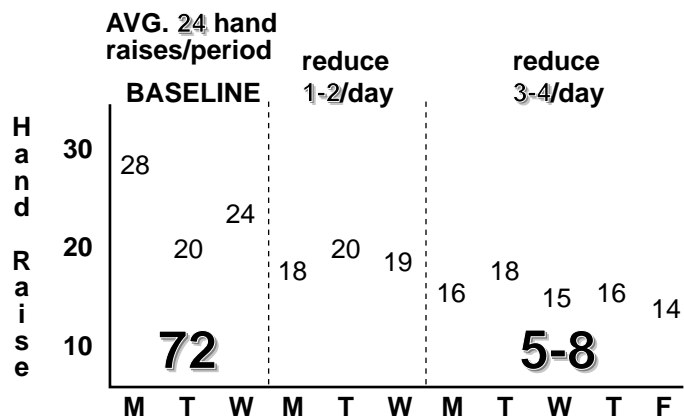
For **DRI**, select and define an incompatible behavior.

✓ Determine time interval.

The time interval for all differential reinforcement procedures specifies the time limits for a behavior to occur. The time interval can be from a few seconds to 1 or 2 hours. For example, when using DRO for talk-outs, the time interval might be 10 minutes for a reinforcer to be earned. When using the DRH procedure to increase classroom contributions, the time interval might be 30 minutes or one class period. It generally helps to set smaller time intervals when initially starting a differential reinforcement program.

✓ Set criterion.

The criterion is the number of behaviors that must occur during the specified time interval to earn a reinforcer. For **DRO**, the criterion is always **0** inappropriate behaviors. For **DRL**, the number is set lower than the behavior naturally occurs. For example, hand raising is not a problem unless it is done too often. Start by finding out how often the student raises his hand during instruction. Suppose during 3 days, Andy raises his hand 72 times. That's an average of 24 hand raises each day. This compares to 5 to 8 hand raises for the average student. To set the criterion, begin reducing Andy's hand raises by 1 or 2 per day. Continue to gradually decrease the number of hand raises per day until the student is performing the behavior at an acceptable level. For **DRH**, the number is set higher than the behavior occurs naturally.

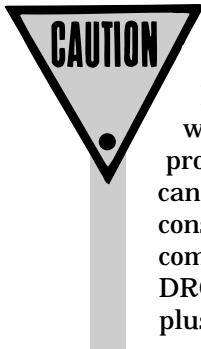


The general rule for DRH is to take the frequency of the appropriate behavior that you want to increase within the specified time interval. Then increase it by half to set the first criterion. This criterion can be slowly increased as the student becomes more proficient with the behavior.

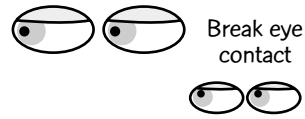
For **DRI**, **DRA**, and **DRC**, the number is usually set at **0**, but it can initially be set at a higher number and gradually be decreased.

✓ Ignore inappropriate behaviors.

Ignoring can be the most difficult part of the differential reinforcement procedure. To ignore inappropriate behavior, you should break eye contact, use stony silence, then move away. In other words, don't pay attention to the student.

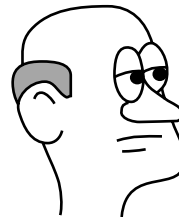


But be forewarned. When you first ignore, the student's misbehavior often escalates and becomes worse. So before using a differential procedure, decide whether your class can tolerate the disruption. If not, consider using another strategy or combination of strategies, such as DRO plus a behavior contract or DRO plus token economy and cost response.



Ignore

Don't pay attention!



Use stony silence



Otherwise, simply remind the student what behavior you're looking for. Then when the student performs the desired behavior, use praise and other forms of reinforcement.

To get the most out of your praise, remember to follow the I-FEED-V rules. This means praise the student "immediately" after the target behavior occurs. Praise "frequently" and "enthusiastically"—especially when working on a new behavior. Also be sure to use "eye contact" and specifically "describe" the target behavior. Finally, use a "variety" of praise statements.

PRAISE

- I** mmediately
- F** requently
- E** nthusiastically
- E** ye contact
- D** escribe behavior
- V** ariety

REMEMBER: *These strategies will work only when praising and ignoring are done consistently and correctly.*

✓ Monitor the student's performance.

It's important to monitor the student's performance over time to determine if the differential reinforcement procedure is working. By collecting data, instructors can easily evaluate the effectiveness of the intervention and make adjustments as needed.

Examples

Example 1

DRO

Bob constantly talks out in class and disrupts the other students. The teacher has indicated to Bob that he needs to “not talk out” for at least 10 minutes. If he can work quietly and not talk out, he will receive 2 minutes of extra free time. The teacher points out that in an hour, Bob could earn 12 minutes of free time. During the 10 minutes while he is quiet, the teacher makes several positive comments about his following the rules, working quietly, and completing his work. If Bob does talk out, he does not receive the extra 2 minutes for the 10-minute period and is ignored by the teacher.

Example 2

DRH

Mrs. Sadie wants Tim to contribute more in class during social studies. During this time, he seldom says a word. The teacher has indicated that Tim can have 10 minutes on the computer to play games if he will contribute at least three times during the class discussion. Once he consistently contributes at least three times, she increases the number of discussion contributions one per week until he is contributing at least five times per discussion period.

Example 3

DRL

Cathy thinks she knows all the answers and is constantly raising her hand in class. The instructor wants her to contribute but does not want her to monopolize the class discussion. She sets a limit for Cathy’s contributions at five. If Cathy limits her contributions to five during the period, she gets to be the teacher’s assistant for the next period. If she goes above five, another student is picked to be the assistant, and the teacher ignores her hand raises.

Example 4

DRA

Tricia is a first grader and is always out of her seat. She disturbs the rest of the class and wanders around the room when the teacher is talking. The teacher decides to ignore her when she is out of her seat without permission. However, when she is in her seat and coloring or completing her work, the teacher smiles and reinforces her for working hard.

Example 5

DRI

Danny is a boy with autistic behaviors. He self-stimulates by mouthing his hands. Because of the mouthing, sores are developing on his hands, and his doctor is concerned. His instructors have taught him to hold on to the side of his wheelchair or to play with a preferred toy as incompatible behaviors. When he mouths, his instructors simply take his hand out of his mouth and do not pay attention to him.

Example 6

DRC

Amy is unable to speak and becomes highly frustrated and tantrums when others cannot understand her or she is not given choices. A picture board has been developed with favored activities or “need” functions, such as drink of water, the bathroom, time to play, or time to be alone. When she starts to tantrum, she is given the choice of pointing to the board. If she points to the board, she is immediately reinforced and granted her request.

Variations of the Technique

👉 **Differential attention** is a name given to a technique that is very similar to DRO. Differential attention simply means that you ignore inappropriate behavior, wait, and then catch the student being appropriate. At this time, the instructor praises and reinforces the student with his/her attention.

👉 **Proximity praise** is a common technique used in many classrooms and work situations. Using this technique, the instructor ignores a student who is behaving inappropriately and praises students nearby who are demonstrating the correct behavior. Then when the student changes his behavior, the instructor immediately praises and reinforces him.

Potential Problems and Solutions

The Inappropriate Behavior Increases

The most common side effect with differential reinforcement is that the inappropriate behavior gets worse before it gets better. This is called an “extinction burst.” If at all possible, the misbehavior should be ignored. If the instructor pays attention to the student during an extinction burst, the behavior will get even worse.

Trivial Behaviors Are Taught

It is easy to pick an alternative or incompatible behavior that is either trivial or nonfunctional. For instance, a student is **taught to sit** and wait as an incompatible behavior to **wandering around**. Incompatible or alternative behaviors taught and reinforced with DRI and DRA procedures should be functional and relevant for the student.

The Differential Reinforcement Procedure Takes Substantial Time to Work



All of the differential reinforcement procedures take a substantial amount of time to be effective. If an inappropriate behavior is very disruptive or dangerous, use of a “faster” procedure that is higher in the LRBI intervention hierarchy may be warranted to protect the student or other students in the classroom or work environment.

Getting Ready

Practice ignoring skills, such as breaking eye contact, looking away, not talking to the student, or walking away. Ignoring is a difficult skill.

Be prepared for an “extinction burst” where the behavior gets worse before it gets better.

Materials and Supplies

-  A supply of reinforcers may be needed, such as edibles, activities, or favored objects or materials.
-  In addition, a timing device, such as a clock, stopwatch, or wristwatch, may be needed to time intervals.



References

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