

## Differential Reinforcement of Other Behavior

Sometimes low-intensity strategies—those easy-to-implement practices that require minimal time and preparation, such as choice making or precorrection—are not sufficient to prevent or de-escalate a student’s challenging behavior. In these cases, educators may want to implement a strategy such as differential reinforcement. Differential reinforcement involves either giving, reducing, or withholding reinforcement, depending on whether the behavior is desirable or undesirable.

### For Your Information

There are several types of differential reinforcement. One of the most common is *differential reinforcement of alternative behavior (DRA)*. DRA reinforces a positive alternative behavior that is a replacement for the undesired or challenging behavior. To learn more, view the IRIS Information Brief:

[Differential Reinforcement of Alternative Behavior \(DRA\)](#)

One type is *differential reinforcement of other behavior (DRO)*. When using DRO, reinforcement is delivered for all behaviors *except* the undesired behavior. As such, DRO reinforces the *absence* or *non-occurrence* of a challenging behavior. For example, Mira receives rewards (e.g., praise, PBIS ticket) for each interval she refrains from talking with her neighbor. The table below describes the steps to implement this strategy with students with challenging behavior and provides an example.

Step	Description	Example
1. Identify the undesired behavior.	Define the undesired or challenging behavior.	<b>Behavior:</b> Annalee often plays with materials during science lab and partner activities.
2. Decide which method of DRO to use.	Choose between two types of DRO: <ul style="list-style-type: none"> <li>• Whole-interval</li> <li>• Momentary</li> </ul> <p>(See below for information on each.)</p>	<b>Selected Method:</b> Momentary

3. Determine the length of the interval.	When deciding the interval length, keep in mind that behaviors that occur more frequently will need a shorter interval (e.g., five minutes for shouting out) and those that occur less frequently can have a longer interval (e.g., 10 minutes for out-of-seat).  Use a timer to cue the end of the interval.	<b>Interval Length:</b> Five minutes
4. Reinforce other behavior.	At the end of the interval, reinforce the student for the absence of challenging behavior.	At the end of each five-minute interval, the teacher checks to see if Annalee is playing with materials. If she is not playing with materials, the teacher gives her a token.

When implementing this strategy, determine which method of DRO you will use to deliver reinforcement. Regardless of which you choose, you will need a timer to cue the end of the observation period.

- Whole-interval
  - Observe the student for an entire interval (e.g., five minutes). Note that a class can be broken into multiple intervals. For example, a thirty-minute class can be divided into six five-minute intervals.
  - Deliver reinforcement at the end of the interval if the student does not engage in the challenging behavior at any point during the interval.
  - **Caution:** This type of DRO may be more difficult to implement because it requires constant observation for the entire interval. In cases where the strategy is being implemented during teacher-led instruction, a paraeducator or another adult could observe and reinforce the student.
- Momentary
  - Observe the student at the end of the interval.
  - Deliver reinforcement at the end of the interval if the student is not engaging in the challenging behavior at that exact time.
  - **Caution:** Although the challenging behavior is not occurring at the end of the interval, it may have occurred at some point during the interval. Even if the student exhibited the behavior at some point during the interval, the teacher still delivers the reinforcement.

Regardless of which of these two methods of DRO you use, keep in mind that you are focusing on decreasing undesired behavior but not teaching appropriate behavior. In fact, you may inadvertently reinforce other undesired behaviors because all behaviors except the identified undesired behavior will be reinforced. For example, a teacher may want to eliminate a student's interrupting behavior. To do this, she reinforces the student every time he goes five minutes without interrupting. However, the student doesn't interrupt for five minutes because he is busy shredding pieces of paper and throwing them onto the floor. Reinforcing him for not interrupting might inadvertently reinforce the paper shredding.

In addition to the steps listed above, the four actions below can be helpful when implementing this practice.

**Collect Data:** Before implementing differential reinforcement, collect data on the undesired behavior to determine how often that particular behavior is occurring. This can help you:

- Select a schedule of reinforcement—To determine when you will reinforce the student for desired behavior, it is helpful to know how often the student engages in the undesired behavior. For example, if you observe the student for 15 minutes and witness five instances of challenging behavior, then you know that the student engages in that behavior approximately every three minutes on average. As such, you may want to establish a schedule of reinforcement that is slightly less than every three minutes (e.g., every two and a half minutes).
- Evaluate the effectiveness of the strategy—You should also collect data after implementing the strategy for a while (e.g., a couple of weeks). This allows you to compare the occurrence of the behavior before and after implementing the intervention and to determine if the strategy is effective for the student.

This may be difficult for teachers, especially if they are trying to collect data during teacher-led whole-group or small-group instruction. In such instances, it may be helpful for another adult (e.g., paraeducator) to collect the data.

**Identify Reinforcers:** Educators should think about using the three types of positive consequences, or *reinforcers*: tangible (e.g., stickers, tokens), social (e.g., thumbs up, verbal praise), and activity related (e.g., extra computer time, drawing). Each student is different and the type of reinforcer that will prove effective may differ from one to another. They might also change over time. For these reasons, it is important that teachers talk to their students to learn more about their interests and preferences and revisit this conversation throughout the year. Additionally, educators should try to explicitly tie the reinforcer to the likely function of the behavior. For instance, if a student engages in an undesired behavior for attention (e.g., making noises during whole-group instruction), the educator may want to use a social reinforcer (e.g., behavior-specific praise) so that the student receives attention for the desired behavior (e.g., listening attentively during whole-group instruction).

**Gradually Fade Reinforcement:** Initially, reinforce the other behavior consistently at the end of each interval, in accordance with the DRO method you selected. Then, as the student becomes successful, gradually *fade* the reinforcement. You can do this by increasing the length of the interval or by reinforcing at every other interval. Continue to fade reinforcement over time until the student no longer engages in the undesired or challenging behavior.

**Offer Opportunities for Feedback:** Give students the opportunity to provide feedback on the strategy. Some may need more frequent reinforcement (e.g., every five minutes instead of every ten minutes).

## References

LeGray, M.W., Dufrene, B.A., Sterling-Turner, H., Olmi, D.J., & Bellone, K. (2010). A comparison of function-based differential reinforcement interventions for children engaging in disruptive classroom behavior. *Journal of Behavioral Education, 19*, 185-204. DOI 10.1007/s10864-010-9109-2

Zane, T., & Davis, C. (2013). Differential reinforcement procedures of other behavior (DRO). In F.R. Volkmar (Eds.), *Encyclopedia of autism spectrum disorders*. Springer, New York, NY. [https://doi.org/10.1007/978-1-4419-1698-3\\_1903](https://doi.org/10.1007/978-1-4419-1698-3_1903)