Step-by-Step Guide

This step-by-step practice guide outlines how to plan for, use, and monitor Differential Reinforcement.



BEFORE YOU BEGIN…

Each of the following points is important to address so that you can be sure Differential Reinforcement is likely to address the interfering behavior of your learner on the spectrum.

HAVE YOU FOUND OUT MORE INFORMATION ABOUT…?

- ❑ Identifying the interfering behavior…?
- ❑ Collecting baseline data through direct observation…?
- ❑ Establishing a target goal or outcome that clearly states when the behavior will occur, what the target goal or outcome is, and how team members and/or observers will know when the skill is mastered…?

If the answer to any of the above questions is 'No,' review the process of how to select an appropriate EBP (https://afirm.fpg.unc.edu/selecting-EBP).

For more information about Differential Reinforcement, please visit https://afirm.fpg.unc.edu/ .

STEP 1: PLANNING FOR DR

The planning step details the initial steps and considerations involved to prepare for using Differential Reinforcement with a learner on the spectrum.

1. **Identify and define interfering behavior through an FBA**
   - To assist in identifying a behavior that interferes with learning and/or daily function, team members should complete a functional behavior assessment (FBA).
   - Team members should gather information from each other regarding the topography, frequency, intensity, location, and duration of the interfering behavior.

   Use the **Data Collection: ABC** and **FBA Worksheet** to determine the function of the interfering behavior.

   ✱Check out the Functional Behavior Assessment module to learn more about this process.

Keep in mind that the four **Differential Reinforcement** procedures are:

- Alternative (DRA)
- Incompatible (DRI)
- Low Rates (DRL)
- Other(DRO) Behaviors

While each procedure is different, the practice guide is applicable to all. When unique features are tied to a specific procedure, we will identify them through examples or cautions.

2. **Select a differential reinforcement strategy**
   When deciding which differential reinforcement procedure to use, determine what the main goal is for the interfering behavior. If the main goal is to eliminate the behavior and not introduce a replacement, then choose DRO. If the main goal is to reduce the interfering behavior, then choose DRL. If the main goal is to substitute the interfering behavior with a more functional and appropriate behavior, then choose DRA or DRI.
   - If using DRI, also select incompatible behavior.
   - If using DRA, also select alternative behavior.

   Use the **DR Types** to select a procedure.

3. **Collect baseline data on interfering behavior**
   - Collect data in a variety of settings and activities to determine how often the learner is using the interfering behavior.
   - Data sheets will help you collect data on the interfering behavior in order to determine if the trend is stable to begin using differential reinforcement.

   Use the **Frequency Data Sheet** to collect the frequency of an interfering behavior.
   Use the **Duration Data Sheet** to collect the duration of an interfering behavior.
   Use the **Partial Interval Data Sheet** to collect data on an interfering behavior during intervals.

4. **Identify reinforcers**
   - If choosing a DRO or DRL strategy, the reinforcer should be of at least equal strength or motivating value at which is currently maintaining the interfering behavior.
   - If choosing a DRI or DRA strategy, the reinforcer should be the same type and/or equivalent to the reinforcement they received when engaging in the interfering behavior.

5. **Determine schedule of reinforcement**
   The process for determining the schedule of reinforcement is different depending on the differential reinforcement procedure.
   - Schedule of reinforcement for DRO
     1. Determine the average IRT from baseline data.
     2. Start with a slightly smaller interval than the average IRT for the initial DRO interval.
   - Schedule of reinforcement for DRL
     1. Start the initial response criterion at the average occurrences from baseline.
     2. Response criterion will continue to decrease gradually until the learner is continually engaging in the interfering behavior at the predetermined, more appropriate rate.
   - Schedule of reinforcement for DRI/DRA
     1. When first beginning to use a DRI or DRA procedure, use continuous reinforcement.
     2. Once the learner is successful, move to using an intermittent schedule and gradually thin the reinforcement schedule.

6. **Prepare materials**
   - Team members should make sure they have all materials needed for using differential reinforcement such as data collection sheets, timers, and reinforcers.
   - Team members also need to determine if additional materials such as a self-monitoring chart or visuals will be used when implemented differential reinforcement procedures.

STEP 2: USING DR

This step details the process of implementing Differential Reinforcement with a learner on the spectrum.

1. **Meet with the learner**
   - DRI/DRA - Differential Reinforcement of Incompatible Behavior/Differential Reinforcement of Alternative Behavior
     - Discuss the replacement behavior (incompatible or alternative behavior) with the learner and explain how the learner can earn a reinforcer
     - Team members may also have to use an additional strategy such as functional communication training to teach the use of the replacement behavior.
   - DRL - Differential Reinforcement of Low Rates of Behavior
     - Discuss the interfering behavior you want the learner to reduce and explain how the learner can earn a reinforcer
     - Think about what tools you can use to help the learner understand what's being discussed at the meeting (e.g., pictures, video models).
     - If other procedures will be used with DRL, introduce them to the learner (e.g., self-monitoring chart).
     - Inform the learner about the number of instances allowed.
   - DRO - Differential Reinforcement of Other Behaviors
     - Discuss the interfering behavior you want the learner to eliminate and explain how the learner can earn a reinforcer.
     - Think about what tools you can use to help the learner understand what's being discussed at the meeting (e.g., pictures, video models).
     - If other procedures will be used with DRO, introduce them to the learner.

2. **Follow reinforcement schedule**
   - DRI/DRA - Differential Reinforcement of Incompatible Behavior/Differential Reinforcement of Alternative Behavior
     - If the interfering behavior occurs put the behavior on extinction or interrupt and redirect the learner to the replacement behavior.
     - Deliver reinforcer when replacement behavior used and meets criterion
     - If learner is successful with a continuous schedule of reinforcement, move onto an intermittent schedule.
   - DRL - Differential Reinforcement of Low Rates of Behavior
     - At the end of the interval or session if the limit is met, deliver the reinforcer.
     - If the limit is not met, withhold the reinforcer and provide feedback to the learner to help the learner monitor their rate of responding. Inform the learner they did not earn the reinforcer, but that they can try again.
     - As the learner makes progress, gradually reduce the number of responses allowed per session or interval. If using interval DRL, team members can also increase the duration of the interval.

- DRO - Differential Reinforcement of Other Behaviors
  - Deliver reinforcer if criterion is met.
  - If interfering behavior occurs, reset timer or wait for next interval to try again.
  - When the learner engages in the interfering behavior, inform the learner they did not earn the reinforcer, and they can try again.
  - To maintain the reinforcer as a motivator, make sure the learner does not have. access to the reinforcer outside of being used for the DRO procedure.
  - As the learner makes progress, gradually increase the DRO interval.

2. Generalize procedure to other settings

- When the interfering behavior is eliminated or predetermined criterion is met, team members should use DRO, DRL, DRI, or DRA procedures in additional settings or different times in the learner's natural environments.
- Having different team members such as teachers, the speech pathologist, and paraprofessionals use the DRO, DRL, DRI, or DRA procedure can also help generalize the intervention effects.

STEP 3: MONITORING DR

The following step details how to monitor the use of Differential Reinforcement with a learner on the spectrum and how to determine next steps based on the data.

1. Collect and analyze data

By collecting data on target behaviors and skills, team members are able to determine if the learner is making progress.

Use the **Frequency Data Sheet** to collect the frequency of an interfering behavior.
Use the **Duration Data Sheet** to collect the duration of an interfering behavior.
Use the **Partial Interval Data Sheet** to collect data on an interfering behavior during intervals.

2. Adjust reinforcement schedule based on performance criteria

- For DRI/DRA, if using a continuous schedule move to an intermittent schedule and continue to fade reinforcers.
- If using DRL, decrease the number of allowances as the learner is successful.
- If using DRO, increase the interval as the learner is successful.
- If the interfering behavior is not decreasing, team members can work together to determine potential solutions to issues.

3. Determine next steps based on learner progress

Collecting data will help team members decide about the effectiveness of using Differential Reinforcement and whether the learner on the spectrum is making progress. If a learner is making progress based upon data collected, team members should continue to use the selected strategies.

If team members determine that the learner is not making progress, consider the following:

- Is the target skill or behavior well defined?
- Is the skill or behavior measurable and observable?
- If using DRI or DRA, does the incompatible/alternative behavior need to be taught?
- Was differential reinforcement used with fidelity?
- If using DRO, DRL, or DRI, is the reinforcer strong enough?
- If using DRA, does the reinforcer provide the same function as the interfering behavior?
- Have you tried adjusting the reinforcement schedule?
- Are all team members using differential reinforcement consistently?

If these issues have been addressed and the learner on the spectrum continues not to show progress, consider selecting a different evidence-based practice to use with the learner on the spectrum.