Module: Differential Reinforcement of Other Behaviors

Evidence-Based Practice Brief: Differential Reinforcement of Other Behaviors

This evidence-based practice brief on Differential Reinforcement of Other Behaviors includes the following components:

1. **Overview, which gives a quick summary of salient features of the practice, including what it is, who it can be used with, what skills it has been used with, settings for instruction, and additional literature documenting its use in practice**
2. **Steps for Implementation, detailing how to implement the practice in a practitioner-friendly step-by-step process**
3. **Implementation Checklist, to be used to monitor fidelity of the use of the practice**
4. **Evidence Base Summary, which details the NPDC-ASD criteria for inclusion as an evidence-based practice and the specific studies that met the criteria for this practice**
5. **Differential reinforcement data collection sheets**

Module: Differential Reinforcement of Other Behaviors

Overview of Differential Reinforcement of Other Behaviors

Bogin, J., & Sullivan, L. (2009). *Overview of differential reinforcement of other behaviors.* Sacramento, CA: The National Professional Development Center on Autism Spectrum Disorders, M.I.N.D. Institute, University of California at Davis School of Medicine.

Differential reinforcement of other behaviors means that reinforcement is provided for desired behaviors, while inappropriate behaviors are ignored. Reinforcement can be provided: (a) when the learner is *not* engaging in the interfering behavior, (b) when the learner is engaging in a specific desired behavior other than the inappropriate behavior, or (c) when the learner is engaging in a behavior that is physically impossible to do while exhibiting the inappropriate behavior. Differential reinforcement (DR) is a special application of reinforcement designed to reduce the occurrence of interfering behaviors (e.g., tantrums, aggression, self-injury, stereotypic behavior). The rationale for DR is that by reinforcing behaviors that are more functional than the interfering behavior or that are incompatible with the interfering behavior, the functional behavior will increase, and the interfering behavior will decrease.

Evidence

Differential reinforcement of other behaviors meets the criteria for an evidence-based practice with six single-subject design studies.

With what ages is differential reinforcement effective?

Differential reinforcement is effective for a range of learners. The evidence base supports the use of differential reinforcement for children from ages four to twelve. In middle school settings, differential reinforcement may be integrated into self-management plans.

What skills or intervention goals can be addressed with differential reinforcement?

Differential reinforcement procedures are most commonly used to reduce challenging or interfering behaviors as well as to increase pro-social or desired behaviors. Within the articles that comprise the evidence base, differential reinforcement has been shown to be effective in reducing interfering behaviors and to increase communication/language skills.

Where has differential reinforcement been effectively used?

Differential reinforcement can be used in a variety of settings. For example, differential reinforcement can be used effectively in both classroom and home environments. Educators working with learners can use differential reinforcement as part of a self-management system or as part of an educator directed behavior plan.

Module: Differential Reinforcement of Other Behaviors

Evidence Base

The studies cited in this section document that this practice meets the NPDC on ASD's criteria for an evidence-based practice. This list is not exhaustive; other quality studies may exist that were not included.

Preschool

Newman, B., Tuntigian, L., Ryan, C. S., & Reinecke, D. R. (1997). Self-management of a DRO procedure by three students with autism. *Behavioral Interventions, 12*(3), 149-156.

Elementary and Middle School

Adelinis, J., Piazza, C., & Han-Leong, G. (2001). Treatment of multiply controlled destructive behavior with food reinforcement. *Journal of Applied Behavior Analysis, 34*(1), 97-100.

Lee, R., McComas, J. J., & Jawor, J. (2002). The effects of differential and lag reinforcement schedules on varied verbal responding by individuals with autism. *Journal of Applied Behavior Analysis, 35*(4), 391-402.

Newman, B., Tuntigian, L., Ryan, C. S., & Reinecke, D. R. (1997). Self-management of a DRO procedure by three students with autism. *Behavioral Interventions, 12*(3), 149-156.

Piazza, C., Moes, D., & Fisher, W. (1996). Differential reinforcement of alternative behavior and demand fading in the treatment of escape-maintained destructive behavior. *Journal of Applied Behavior Analysis, 29*(4), 569-572.

Taylor, B., Hoch, H., & Weissman, M. (2005). The analysis and treatment of vocal stereotypy in a child with autism. *Behavioral Interventions, 20,* 239-253.

Shabani, D., & Fisher, W. (2006). Stimulus fading and differential reinforcement for the treatment of needle phobia in a youth with autism. *Journal of Applied Behavior Analysis, 39*(4), 449-452.

Selected Additional References

Bregman, J. D., Zager, D. & Gerdtz, J. (2005). Behavioral interventions. In F. R. Volkmar, R. Paul, A. Klin, & D. Cohen (Eds.) *Handbook of autism and pervasive developmental disorders (3nd Edition)* (pp. 897-924). New York: John Wiley & Sons, Inc.

Charlop-Christy, M. H., & Haymes, L. K. (1996). Using obsessions as reinforcers with and without mild reductive procedures to decrease inappropriate behaviors of children with autism. *Journal of Autism and Developmental Disorders, 26*(5), 527-546.

Gunter, P. L., Fox, J. F., McEvoy, M. A., Shores, R. E., & Denny, R. K. (1993). A case study of the reduction of aberrant, repetitive, responses of an adolescent with autism. *Education and Treatment of Children, 18*(2), 186-197.

Module: Differential Reinforcement of Other Behaviors

Horner, R. H., Carr, E. G., Strain, P. S., Todd, A. W., & Reed, H. K. (2002). Problem behavior interventions for young children with autism: A research synthesis. *Journal of Autism and Developmental Disorders, 32*(5), 423-446.

Kelley, M. E., Lerman, D. C., & Van Camp, C. M. (2002). The effects of competing reinforcement schedules on the acquisition of functional communication. *Journal of Applied Behavior Analysis, 35,* 59-63.

Scotti, J. R., Ujcich, K. J., Weigle, K. L., Holland, C. M., & Kirk, K. S. (1996). Interventions with challenging behavior of persons with developmental disabilities: A review of current research practices. *The Journal of the Association for Persons with Severe Handicaps, 21*(3), 123-134.

Module: Differential Reinforcement of Other Behaviors

Evidence Base for Differential Reinforcement of Other Behaviors

The National Professional Development Center on ASD has adopted the following definition of evidence-based practices.

To be considered an evidence-based practice for individuals with ASD, efficacy must be established through peer-reviewed research in scientific journals using:

- *randomized or quasi-experimental design studies.* Two high quality experimental or quasi-experimental group design studies,
- *single-subject design studies.* Three different investigators or research groups must have conducted five high quality single subject design studies, or
- *combination of evidence.* One high quality randomized or quasi-experimental group design study and three high quality single subject design studies conducted by at least three different investigators or research groups (across the group and single subject design studies).

High quality randomized or quasi experimental design studies do not have critical design flaws that create confounds to the studies, and design features allow readers/consumers to rule out competing hypotheses for study findings. High quality in single subject design studies is reflected by a) the absence of critical design flaws that create confounds and b) the demonstration of experimental control at least three times in each study.

This definition and criteria are based on the following sources:

Horner, R., Carr, E., Halle, J., McGee, G., Odom, S., & Wolery, M. (2005). The use of single subject research to identify evidence-based practice in special education. *Exceptional Children, 71,* 165-180.

Nathan, P., & Gorman, J. M. (2002). *A guide to treatments that work.* NY: Oxford University Press.

Odom, S. L., Brantlinger, E., Gersten, R., Horner, R. D., Thompson, B., & Harris, K. (2004). *Quality indicators for research in special education and guidelines for evidence-based practices: Executive summary.* Arlington, VA: Council for Exceptional Children Division for Research.

Rogers, S. J., & Vismara, L. A. (2008). Evidence based comprehensive treatments for early autism. *Journal of Clinical Child and Adolescent Psychology, 37*(1), 8-38.

Using these criteria, the empirical studies referenced below provide documentation for supporting differential reinforcement as an evidence-based practice. The studies cited in this section document that this practice meets the NPDC on ASD's criteria for an evidence-based practice. This list is not exhaustive; other quality studies may exist that were not included.

Module: Differential Reinforcement of Other Behaviors

Preschool

Newman, B., Tuntigian, L., Ryan, C. S., & Reinecke, D. R. (1997). Self-management of a DRO procedure by three students with autism. *Behavioral Interventions,12*(3),149-156.

Elementary and Middle School

Adelinis, J., Piazza, C., & Han-Leong, G. (2001). Treatment of multiply controlled destructive behavior with food reinforcement. *Journal of Applied Behavior Analysis, 34*(1), 97-100.

Lee, R., McComas, J. J., & Jawor, J. (2002). The effects of differential and lag reinforcement schedules on varied verbal responding by individuals with autism. *Journal of Applied Behavior Analysis, 35*(4), 391-402.

Newman, B., Tuntigian, L., Ryan, C. S., & Reinecke, D. R. (1997). Self-management of a DRO procedure by three students with autism. *Behavioral Interventions,12*(3),149-156.

Piazza, C., Moes, D., & Fisher, W. (1996). Differential reinforcement of alternative behavior and demand fading in the treatment of escape-maintained destructive behavior. *Journal of Applied Behavior Analysis, 29*(4), 569-572.

Taylor, B., Hoch, H., & Weissman, M. (2005). The analysis and treatment of vocal stereotypy in a child with autism. *Behavioral Interventions, 20,* 239-253.

Shabani, D., & Fisher, W. (2006). Stimulus fading and differential reinforcement for the treatment of needle phobia in a youth with autism. *Journal of Applied Behavior Analysis, 39*(4), 449-452.

Module: Differential Reinforcement of Other Behaviors

Differential Reinforcement of Other Behaviors: Steps for Implementation

Vismara, L., Bogin, J., & Sullivan, L. (2009). *Differential reinforcement of other behaviors: Steps for implementation.* Sacramento, CA: The National Professional Development Center on Autism Spectrum Disorders, M.I.N.D. Institute, University of California at Davis School of Medicine.

Differential reinforcement (DR) is a special application of reinforcement designed to reduce the occurrence of interfering behaviors (e.g., tantrums, aggression, self-injury, stereotypic behavior). The rationale for DR is that by reinforcing behaviors that are more functional than the interfering behavior or that are incompatible with the interfering behavior, the functional behavior will increase, and the interfering behavior will decrease. A variety of differential reinforcement strategies can be used to increase positive behaviors and decrease interfering behaviors. DR includes the following steps.

Step 1. Identifying the Interfering Behavior

1. Teachers/practitioners define the target behavior.

The first step in using a DR procedure is to identify the interfering behavior. Interfering behaviors are disruptive behaviors such as screaming or aggression or repetitive/stereotypic behaviors (e.g., lining up toys or blocks, spinning objects, etc.) that interfere with learning.

In addition to identifying the specific behavior that is interfering with learning, gathering information from team members regarding the following aspects of the interfering behavior will be helpful.

2. Teachers/practitioners gather information from team members regarding the following aspects of the interfering behavior:

    a. topography, or what the interfering looks like: (e.g., banging arms against the table);
    b. frequency, or how often the behavior happens: (e.g., from once or twice per day to a dozen or more times per day);
    c. intensity, or how severe the behavior is: (e.g., if the behavior is biting, how hard does the learner bite and does he cause tissue damage);
    d. location, or where the behavior is occurring: (e.g., in gym class, on the playground, during math class); and

Module: Differential Reinforcement of Other Behaviors

e. duration, or how long the behavior lasts: (e.g., a tantrum that lasts a few minutes or that can last for an hour).

This information can be summarized to aid in the assessment of the possible functions of the interfering behavior. For example, knowing that Joey loudly shouts profanities between three-four times for 30 seconds or more when in the lunchroom provides specific information about the interfering behavior that can be of value in planning intervention.

Step 2. Determining the Function of the Interfering Behavior

1. Teachers/practitioners use **functional behavior assessment** to identify the function of the interfering behavior.

An important part of determining the function of the interfering behavior will be interviewing team members about the nature of the problem behavior. To do so, you will need to complete a **functional behavior assessment** that will allow you to identify the current antecedents and consequences. **For more information about this procedure, please see *Functional Behavior Assessment: Steps for Implementation* (National Professional Development Center on Autism Spectrum Disorders, 2008).**

Step 3. Identifying Data Collection Measures and Collecting Baseline Data

1. Teachers/practitioners identify data collection measures to be used to assess the interfering behavior before implementing the intervention.

When collecting data for DR, it is important to focus on the frequency, topography, and intensity/severity of the behavior. Below are some examples of data sheets that may be particularly helpful in describing the interfering behavior.

Example: Frequency Data Collection Sheet

Learner's name _____
Interfering behavior hitting
Date_____ Observer_____

AM recess	√√√√√√√
Math	√√
Reading	√√
Gym	
Music	√√√√
PM recess	√√√√√
Daily Total	22

Module: Differential Reinforcement of Other Behaviors

Example: Topography Data Collections Sheet (often called A B C data)

Learner's name _____ Observer_____
Interfering behavior hitting Location math class
Date_____ Time Observed 9:30-10:15

Antecedent	**Behavior**	**Consequence**
Told to sit down	Smacked arms against desk	Moved to another desk
Asked a math question	Punched aide with closed fist	Removed from classroom
Told "ten minutes to reading"	Smacked self with open hands	Given silly putty

Example: Intensity Data Sheet (sometimes called a behavior rating scale)

Student's name_____ Observer_____
Date_____
Interfering behavior hitting

Behavior rating system

Time behavior occurred	Very severe/ intense (dangerous)	Pretty severe (potentially dangerous)	Somewhat severe (causes problems but is not dangerous)	Not at all severe (annoying, inconvenient or distracting)
9:15	4	3	2	1
10:05	4	3	2	1
10:23	4	3	2	1
10:40	4	3	2	1
11:30	4	3	2	1
Overall behavior today	Very severe/ intense (dangerous)			

2. Teachers/practitioners gather baseline data on the interfering behavior.

The data collection measures identified above are used, along with the information gathered in Steps 1 and 2, to determine the nature of the interfering behavior prior to the intervention.

Module: Differential Reinforcement of Other Behaviors

During the baseline phase, it is important to collect data for a long enough period of time to see if there is some consistency in the behavior. Teachers/practitioners should decide how long data will be collected (e.g., one week, two weeks), and what will happen if there are not enough data to inform intervention (e.g., redesign the data collection method, observe at a different time). Baseline data collection allows teachers/practitioners to assess the impact of the intervention on the interfering behavior over time. Typically the behavior should be observed for three or more days in different settings (e.g., science class, music).

3. Teachers/practitioners decide who will collect the initial data.

For example, it might be easiest for a paraprofessional to collect data across the day. The team also may decide that it would be easier to have an objective observer collect data rather than the classroom teacher who is in the middle of a lesson.

Step 4. Selecting a Differential Reinforcement Procedure

There are many types of **differential reinforcement procedures** included in the designation of DR. They include:

- **differential reinforcement of other behaviors** (DRO; e.g., reinforcing singing to replace screaming);
- **differential reinforcement of alternative behaviors** (DRA; e.g., reinforcing shaking hands to replace slapping);
- **differential reinforcement of incompatible behaviors** (DRI; e.g., reinforcing appropriate language to replace swearing); and
- **differential reinforcement of low rates of behavior** (DRL; e.g., reinforcing hand raising which rarely happens).

1. When deciding which procedure to use, teachers/practitioners:

    a. identify functionally similar behaviors (behaviors that serve the same functions--such as saying, “Help please” instead of grunting) that learners already have in their repertoire;

    b. determine the type and amount of functional skills (skills the learner currently has that are functional alternatives to the interfering behavior—e.g., he can tap teacher on the arm to secure her attention instead of screaming);

    c. determine how frequently these desired behaviors occur;

Module: Differential Reinforcement of Other Behaviors

d. consider the topography (what the behavior looks like), the frequency of the interfering behavior, how severe the behavior is, how the behavior is affecting the environment, and where the behavior is most likely to occur; and

e. consider their own professional judgment and comfort level with the proposed procedure.

The matrix below may be helpful in making decisions about which **differential reinforcement procedures** to use.

Topography (what the interfering behavior looks like)	**Severity/ intensity**	**Frequency of interfering behavior**	**Impact on environment**	**Procedure to consider**
Unacceptable (student looks extremely out of place and odd, e.g., twirling in circles in the lunch room.)	Very severe/ intense (dangerous)	Constant	Severe (very distracting or disruptive)	DRI

Module: Differential Reinforcement of Other Behaviors

Topography (what the interfering behavior looks like)	**Severity/ intensity**	**Frequency of interfering behavior**	**Impact on environment**	**Procedure to consider**
Odd/bizarre or different	Pretty severe (potentially dangerous)	Frequent	Significant (disrupts environment but not severely)	DRI or DRL
Slightly odd but not enough to cause stigma	Somewhat severe (causes problems but is not dangerous)	Occasional	Tolerable (environment is impacted to a tolerable amount)	DRO or DRA
Within what would be expected for a similar aged student	Not at all severe (annoying, inconvenient or distracting)	Rarely	Minimally (minimal impact on environment)	DRO, DRA, or DRH

Step 5. Creating an Intervention Plan

When creating a DR intervention plan, teachers/practitioners need to address several features.

1. Teachers/practitioners define other procedures that will be incorporated (e.g., extinction, functional communication training) with the differential reinforcement procedure. For example, a teacher/practitioner who decides to use DR for biting may also need to use functional communication training to teach the learner how to make requests.

2. Teachers/practitioners administer a *reinforcer assessment* to identify learner-preferred objects and activities that can be used as rewards for demonstrating the replacement behavior. The goal is to motivate the learner with tangible rewards for demonstrating a more positive, acceptable behavior that serves the same function as the problem behavior. The reinforcer assessment can be as informal as displaying a variety of objects or pictures of objects/activities related to the learner's interest and observing what the learner consistently chooses. In

Module: Differential Reinforcement of Other Behaviors

addition, asking the learner (if possible) and parents/family members about preferred reinforcers should be considered. Keep in mind that the learner's interest in reinforcers may decrease or change over time. For example, the learner's initial desire to "work" for time on the computer after completing assignments may no longer be a preferred reinforcer. When learner preferences change, other favorite objects/activities can be offered for selection. For more information aobut reinforce assessment, please see *Reinforcement Module* (National Professional Development Center on Autism Spectrum Disorders, 2009) at www.autisminternetmodules.org.

3. Teachers/practitioners decide on a schedule of reinforcement (how frequently the reinforcer is delivered). For example, decide on whether the learner gets a reward every time he engages in the replacement behavior or a reward for going 10 minutes without engaging in the interfering behavior.

4. Teachers/practitioners establish criteria for changing the schedule of reinforcement. For example, after three sessions in which the learner is reinforced every 5 minutes, he/she will be reinforced every 10 minutes for the following three sessions. **For more information about this procedure, please see *Positive Reinforcement: Steps for Implementation* (National Professional Development Center on Autism Spectrum Disorders, 2008).**

5. Teachers/practitioners specify the timeline for data collection. For example, the team decides that data should be reviewed after one week of implementation to identify the following week's schedule of data collection (to monitor student progress).

6. Teacher/practitioners clearly write-out the intervention plan and make it available to other team members.

The matrix below provides samples of four possible intervention plans based on common functions of interfering behavior. Each of the hypothesized functions is paired with DR procedures, examples of how the procedure might be implemented, and other behavior procedures that might be used in conjunction with DR.

Function of Interfering Behavior	**Differential Reinforcement Procedure**	**Example**	**Other Potential Behavioral Procedures**
Attention	Reinforce appropriate and desired attempts to get attention.	Teach learner to use pictures and/or hand gestures to get attention. Reinforce	• Functional Communication Training (FCT) • Extinction

Module: Differential Reinforcement of Other Behaviors

		the desired behavior by immediately responding to the appropriate attempt.	• Non-contingent Reinforcement
Escape/avoid	Reinforce requests for breaks.	Create a system for requesting breaks (e.g., picture cards) and reinforce attempts by giving a break as soon as desired behavior is demonstrated.	• Functional Communication Training (FCT) • Extinction • Non-contingent Reinforcement
Sensory/ autonomic (Behavior is reinforced because it feels good or because learner can escape discomfort.)	Identify movement, sounds or actions that are reinforcing. Find ways that those sounds or movements can occur without the interfering behavior and reinforce those activities.	Teach a learner who bangs his head on the wall to put his head in a soft space where he can not hurt himself and reinforce him for using the appropriate space.	• Response Redirection and Interruption • Functional Communication Training (FCT) • Extinction • Non-contingent Reinforcement
Tangible (to gain items, toys, etc.)	Reinforce the learner for requesting appropriately.	Teach learner who screams for the computer to wait quietly for a timer to buzz. Reinforce by allowing him/her to use the computer.	• Functional Communication Training (FCT) • Extinction • Non-contingent Reinforcement

Step 6. Implementing the Intervention

The next step in using a DR procedure is to implement the intervention plan that has been developed. During implementation of a DR procedure, two components should be addressed.

1. Before the interfering behavior occurs, teachers/practitioners should:

   a. choose which behavior to reinforce based on the intervention plan.

   b. explicitly teach the replacement or alternative skills.

Module: Differential Reinforcement of Other Behaviors

This may be done by using functional communication training, task analysis, graduated guidance, or other kinds of direct teaching procedures such as discrete trial training. For example, if the replacement behavior is requesting a break, teachers/practitioners may need to teach the learner how to request a break using pictures or scripts.

c. continuously reinforce the other/low rate/alternative/incompatible behaviors.

To continuously reinforce, rapidly reinforce every instance of the replacement behavior. For example, if you are reinforcing a learner for remaining seated, provide reinforcement the entire time the learner is in his/her seat.

d. match the reinforcement to the function of the behavior.

Because the function of a learner's interfering behavior can change, it is important to confirm that your intervention always matches the hypothesized function of the interfering behavior. For example, the function of calling out behavior may initially be for attention and may later shift to escape. The DR procedure must change as well to reinforce the function of the replacement behavior (i.e., not calling out).

2. If or when the interfering behavior occurs, teachers/practitioners prompt and immediately respond to the alternative behavior by:

   a. prompting frequently to assure that there are enough instances of the desired behavior to reinforce and

   b. being consistent.

If the desired behavior does not occur, prompt and immediately reinforce the prompted desired behavior. For example, if the learner is calling out to get attention, prompt him to raise his hand often so that he can be reinforced. Prompting the desired behavior immediately after it occurs will increase the likelihood of the learner displaying the desired behavior. For more information about this procedure, please see *Least-to-Most Prompting: Steps for Implementation* (National Professional Development Center on Autism Spectrum Disorders, 2008).

3. After the plan has been in place for a certain number of days as documented in the intervention plan (see step 5.3), teachers/practitioners can alter the schedule or reinforcement.

For example, if a learner is being reinforced every hour and meets the criteria for change according to the intervention plan, the learner may then be reinforced only twice per day.

Module: Differential Reinforcement of Other Behaviors

Step 7. Collecting Outcome Data

1. To determine the effectiveness of the DR procedure and whether modifications are necessary (e.g., a new interfering behavior is presenting), teachers/practitioners must regularly collect outcome data by:

    a. continuously assessing (e.g., A-B-C, frequency, and intensity data) the interfering behavior and

    b. consulting the original assessment and baseline data to ensure that they are using the same measures.

For example, if the frequency of the original behavior was assessed during baseline, assess the frequency of the desired behavior to monitor progress.

Step 8. Reviewing and Modifying the Intervention Plan

1. Teachers/practitioners review the outcome data and discuss the results with team members.

2. Teachers/practitioners summarize the results making sure to include both baseline and outcome measures.

3. Teachers/practitioners identify any new interfering behaviors that may have emerged and assess them for function.

It is possible that new interfering behaviors have the same function of the extinguished behavior. If this is the case, it may be that a similar intervention will work.

4. Teachers/practitioners modify the intervention plan depending on the baseline and outcome data.

For example, if the data show that a learner's hitting behavior has improved minimally, teachers/ practitioners may need to modify the plan to reinforce the desired behavior more frequently.

5. Teachers/practitioners conduct on-going checks of intervention effectiveness.

Interventions will most likely need to be reviewed and modified several times before the interfering behavior is extinguished.

Module: Differential Reinforcement of Other Behaviors

Implementation Checklist for Differential Reinforcement of Other Behaviors

Bogin, J., & Sullivan, L. (2009). *Implementation checklist for differential reinforcement of other behaviors.* Sacramento, CA: The National Professional Development Center on Autism Spectrum Disorders, M.I.N.D. Institute, University of California Davis Medical School.

Instructions: This checklist includes each step of the process of implementing differential reinforcement. Please complete all of the requested information including the site and state, individual being observed, and the learner's initials. To assure that a practice is being implemented as intended, an observation is *always* preferable. This may not always be possible. Thus, items may be scored based on observations with the implementer, discussions and/or record review as appropriate. Within the table, record a 2 (implemented), 1 (partially implemented), 0 (did not implement), or NA (not applicable) next to each step observed to indicate to what extent the step was implemented/addressed during your observation. Use the last page of the checklist to record the target skill, your comments, whether others were present, and plans for next steps for each observation.

Site: _____ State: _____

Individual(s) observed: _____Learner's Initials:_____

Skills below can be implemented by a practitioner, parent or other team member.

	Observation	1	2	3	4	5	6	7	8
	Date								
	Observer's Initials								
Planning (Steps 1-5)									
Step 1. Identifying the Interfering Behavior	**Score****								
1. Define the target interfering behavior.									
2. Gather information from team members regarding the following aspects of the interfering behavior:									
a. topography--what the behavior looks like,									
b. frequency--how often the behavior happens,									
c. intensity/severity--how severe the behavior is,									
d. location--where the behavior is occurring, and									

***Scoring Key: 2 = implemented; 1 = partially implemented; 0 = did not implement; NA = not applicable*

Module: Differential Reinforcement of Other Behaviors

	Observation	1	2	3	4	5	6	7	8
	Date								
	Observer's Initials								
e. duration--how long the behavior lasts.									
Step 2. Determining the Function of the Interfering Behavior		**Score****							
1. Use functional behavior assessment to identify the function of the interfering behavior.									
Step 3. Identifying Data Collection Measures and Collecting Baseline Data									
1. Identify data collection measures to be used to assess the interfering behavior before implementing the intervention that include:									
a. frequency,									
b. topography,									
c. intensity/severity.									
2. Gather baseline data on the interfering behavior.									
3. Decide who will collect the initial data.									
Step 4. Selecting a Differential Reinforcement Procedure									
1. When deciding which differential reinforcement procedure to use:									
a. identify functionally similar behaviors (behaviors which serve the same function) that learners already have in their repertoire to reinforce;									
b. determine the type and amount of functional skills (i.e., skills the learner currently has that are functional alternatives to the interfering behavior);									

***Scoring Key: 2 = implemented; 1 = partially implemented; 0 = did not implement; NA = not applicable*

Module: Differential Reinforcement of Other Behaviors

	Observation	1	2	3	4	5	6	7	8
	Date								
	Observer's Initials								
Step 4. Selecting a Differential Reinforcement Procedure (cont.)		**Score****							
c. determine how frequently desired behaviors occur;									
d. consider the topography (what the behavior looks like), the frequency of the target behavior, how severe the behavior is, how the behavior is impacting the environment, and where the behavior is most likely to occur;									
e. consider their professional judgment and comfort level with the procedure.									
Step 5. Creating an Intervention Plan									
1. Define other procedures that will be incorporated with the differential reinforcement procedure.									
2. Administer a reinforce assessment to identify learner-preferred, rewarding object and activities.									
3. Decide on a schedule of reinforcement.									
4. Establish criteria for changing the schedule of reinforcement.									
5. Specify the timeline for data collection.									
6. Clearly write-out the intervention plan and make it available to other team members.									
Intervention (Step 6)									
Step 6: Implementing the Intervention									
1. Before the interfering behavior occurs, teachers/practitioners should:									
a. choose which behavior to reinforce based on the intervention plan,									

***Scoring Key: 2 = implemented; 1 = partially implemented; 0 = did not implement; NA = not applicable*

Module: Differential Reinforcement of Other Behaviors

	Observation	1	2	3	4	5	6	7	8
	Date								
	Observer's Initials								
Step 6: Implementing the Intervention (cont.)		**Score****							
b. explicitly teach the replacement or alternative skills,									
c. continuously reinforce the other/alternative/incompatible behaviors, and									
d. match the reinforcement to the function of the behavior.									
2. If or when the interfering behavior occurs, teachers/practitioners prompt and immediately respond to the alternative behavior by:									
a. prompting frequently to assure that there are enough instances of the desired behavior to reinforce and									
b. being consistent.									
3. After the plan has been in place for a certain number of days (see step 5.3), implementer can alter the schedule of reinforcement.									
Progress Monitoring (Steps 7 - 8)									
Step 7: Collecting Outcome Data									
1. Regularly collect outcome data to determine the effectiveness of the DR procedure by:									
a. continuously assessing (e.g., A-B-C, frequency, and intensity data) the interfering behavior and									

***Scoring Key: 2 = implemented; 1 = partially implemented; 0 = did not implement; NA = not applicable*

Module: Differential Reinforcement of Other Behaviors

	Observation	1	2	3	4	5	6	7	8
	Date								
	Observer's Initials								
Step 7: Collecting Outcome Data (cont.)									
b. consulting the original assessment and baseline data to ensure that they are using the same measures.									
Step 8. Review and Modify the Intervention Plan		**Score****							
1. Review the outcome data and discuss the results with team members.									
2. Summarize the results making sure to include both baseline and outcome measures.									
3. Identify any new interfering behaviors that may have emerged and assess them for function.									
4. Modify the intervention plan depending on the baseline and outcome data.									
5. Conduct on-going checks of intervention effectiveness.									

***Scoring Key: 2 = implemented; 1 = partially implemented; 0 = did not implement; NA = not applicable*

Module: Differential Reinforcement of Other Behaviors

Date	Observer Initials	Target Skill/Behavior, Comments, and Plans for Next Steps
Date	**Observer Initials**	**Target Skill/Behavior, Comments, and Plans for Next Steps**
Date	**Observer Initials**	**Target Skill/Behavior, Comments, and Plans for Next Steps**
Date	**Observer Initials**	**Target Skill/Behavior, Comments, and Plans for Next Steps**

Module: Differential Reinforcement of Other Behaviors

Date	Observer Initials	Target Skill/Behavior, Comments, and Plans for Next Steps
Date	**Observer Initials**	**Target Skill/Behavior, Comments, and Plans for Next Steps**
Date	**Observer Initials**	**Target Skill/Behavior, Comments, and Plans for Next Steps**
Date	**Observer Initials**	**Target Skill/Behavior, Comments, and Plans for Next Steps**

Module: Differential Reinforcement of Other Behaviors

Frequency Data Sheet for Differential Reinforcement

Bogin, J. (2006). *Frequency data sheet for differential reinforcement.* Unpublished document.

Learner's name _____ **Person collecting data** _____

Date: _____

Target Interfering Behavior:

Time/Activity	Frequency count
Daily Total	

Date: _____

Target Interfering Behavior:

Time/Activity	Frequency count
Daily Total	

Date: _____

Target Interfering Behavior:

Time/Activity	Frequency count
Daily Total	

Module: Differential Reinforcement of Other Behaviors

Example: Frequency Data Sheet for Differential Reinforcement

Bogin, J. (2006). *Example: Frequency data sheet for differential reinforcement.* Unpublished document.

Learner's name_____ **Person collecting data** _____

Date: January 15, 2009

Target Interfering Behavior: Calling Out

Time/Activity	**Frequency count**
Bus to school	√√√√√
AM recess	√√√√√
Reading	√√
Gym	
Music	√√√√
PM recess	√√√√√
Daily Total	28 instances of calling out

Date: January 17, 2009

Target Interfering Behavior: Hitting

Time/Activity	**Frequency count**
Bus to school	√√√
AM recess	√
Reading	√√√√√
Gym	√√
Music	√√√√
PM recess	√√√√√
Daily Total	24 instances of hitting

Date: January 18, 2009

Target Interfering Behavior: Out of seat

Time/Activity	**Frequency count**
Bus to school	√√√
AM recess	
Reading	√√√√
Gym	
Music	√√
PM recess	
Daily Total	10 instances of calling out

Module: Differential Reinforcement of Other Behaviors

Severity/Intensity Data Sheet for Differential Reinforcement

Bogin, J. (2006). *Severity/intensity data sheet for differential reinforcement.* Unpublished document.

Learner's name _____ **Person collecting data** _____

Date: _____

Target Interfering Behavior:

Time behavior occurred	Very severe/ intense (dangerous)	Pretty severe (could potentially be dangerous)	Somewhat severe (causes problems but is not dangerous)	Not at all severe (may be annoying, inconvenient or distracting)
	4	3	2	1
	4	3	2	1
	4	3	2	1
	4	3	2	1
	4	3	2	1
Overall behavior today				

Date: _____

Target Interfering Behavior:

Time behavior occurred	Very severe/ intense (dangerous)	Pretty severe (could potentially be dangerous)	Somewhat severe (causes problems but is not dangerous)	Not at all severe (may be annoying, inconvenient or distracting)
	4	3	2	1
	4	3	2	1
	4	3	2	1
	4	3	2	1
	4	3	2	1
Overall behavior today				

Module: Differential Reinforcement of Other Behaviors

Example: Severity/Intensity Data Sheet for Differential Reinforcement

Bogin, J. (2006). *Example: Severity/intensity data sheet for differential reinforcement.* Unpublished document.

Learner's name _____ **Person collecting data** _____

Date: September 24, 2008

Target Interfering Behavior: Head banging

Time behavior occurred	Very severe/ intense (dangerous)	Pretty severe (could potentially be dangerous)	Somewhat severe (causes problems but is not dangerous)	Not at all severe (may be annoying, inconvenient or distracting)
9:15	**4**	**3**	**2**	**1**
10:05	**4**	**3**	**2**	**1**
10:23	**4**	**3**	**2**	**1**
10:40	**4**	**3**	**2**	**1**
11:30	**4**	**3**	**2**	**1**
Overall behavior today	Very severe/ intense (dangerous)			

Date: September 25, 2008

Target Interfering Behavior: Kicking

Time behavior occurred	Very severe/ intense (dangerous)	Pretty severe (could potentially be dangerous)	Somewhat severe (causes problems but is not dangerous)	Not at all severe (may be annoying, inconvenient or distracting)
8:40	**4**	**3**	**2**	**1**
9:10	**4**	**3**	**2**	**1**
9:45	**4**	**3**	**2**	**1**
10:00	**4**	**3**	**2**	**1**
11:42	**4**	**3**	**2**	**1**
Overall behavior today	Somewhat severe (causes problems but is not dangerous)			

Module: Differential Reinforcement of Other Behaviors

Topography (A-B-C) Data Sheet for Differential Reinforcement

Learner's name _____ **Person collecting data** _____

Date _____ **Activity** _____

A- Antecedent *Describe the activity and specific events preceding the behavior*	**B-Behavior** *Describe exactly what the behavior looked like*	**C-Consequence** *Describe events that followed or results of the behavior*

Module: Differential Reinforcement of Other Behaviors

Example: Topography (A-B-C) Data Sheet for Differential Reinforcement

Learner's name _____ **Person collecting data** _____

Date _____ **Activity** _____

A-Antecedent *Describe the activity and specific events preceding the behavior*	**B-Behavior** *Describe exactly what the behavior looked like*	**C-Consequence** *Describe events that followed or results of the behavior*
Told to sit down for class	Lifted hands over head and slammed them down on desk	Removed from chair/ desk
Told to get lunch box	Grabbed book display from shelf and threw it at the aide	Hand over hand prompted to get lunch box
Asked where she would like to sit	Reached up and pulled aide's hair for several seconds	Physically moved away from aide
Given a choice between two markers	Grabs aide's hand and bites down (not breaking skin)	Physically moved from aide, put in time-out