Principles of Applied Behavior Analysis:

Evidence-Based Early Intervention Teaching Practices

Day 2

Review of Day 1

Analyze Assignment

Extinction

Reinforcement for a previously reinforced behavior is discontinued.

A means to decrease behavior that does not require punishment procedures

The main goals of extinction:

- Reduce and eliminate interfering behaviors
- Replace interfering behaviors with more acceptable and appropriate behaviors

When using **extinction** it is imperative to communicate one central message to the learner-

***The behavior is no longer effective and/or efficient at achieving its purpose and other, more appropriate behaviors, can achieve your goals*.**

Extinction procedures can be implemented to decrease or eliminate behaviors that interfere with or limit teaching opportunities. Typical extinction procedures include:

- Ignoring the behavior
- Removing **reinforcing** items or activities
- Removing the learner from the environment

Ignoring the behavior means:

no reprimands
no threats
no negative facial expressions
no physical consequences
no techniques to calm the child down
no attempts to verbally reason

Things to consider when using extinction

Extinction Burst

Spontaneous Recovery

Questions to Ask before implementing extinction

Can an increase in the behavior be tolerated?
Is the behavior likely to be imitated by others?
Do you know all of the reinforcers?
Can the reinforcers be withheld?
Have alternative behaviors to reinforce been identified?

(Alberto & Troutman)

Differential Reinforcement

Reinforce one behavior or response and not others

Two applications of differential reinforcement

1. Learning a new task
2. Decreasing an inappropriate behavior

Procedures of differential reinforcement

DRI
DRA
DRO
DRL

DRI

Differential Reinforcement of Incompatible behavior

delivers **reinforcement** upon the occurrence of a behavior that is physically incompatible with or cannot be exhibited at the same time as the inappropriate behavior.

DRA

Differential Reinforcement of Alternative behavior

similar to DRI in that both **reinforce** the occurrence of a behavior that is an alternative to the behavior selected for reduction.

However, the **target behavior** selected in DRA is not necessarily incompatible with the unwanted behavior.

In both DRI and DRA procedures, it is important to select an incompatible or alternative behavior that already exists or is present in the learner's repertoire of responses.

DRO

Differential Reinforcement of Other behavior

delivers **reinforcement** for any appropriate behavior whenever an undesirable behavior is not emitted during a specific period of time.

DRL

Differential Reinforcement of Low rates of responding

aims to decrease but not eliminate the behavior

Schedules of Reinforcement

"The schedule of reinforcement for a particular behaviour specifies whether every response is followed by reinforcement or whether only some responses are followed by reinforcement"

- Miltenberger (2007, p.86)

Continuous Schedules of Reinforcement (CRF)

Reinforcement is delivered after every single occurrence of the target behavior

Often used to teach new behaviors

Intermittent Schedules of Reinforcement (INT)

Reinforcement is delivered after some, but not all, occurrences of the behavior

Often used to maintain established behaviors

Thinning Intermittent Reinforcement

Gradually increasing the number of responses required or the amount of time before reinforcement.

Example: instead of delivering reinforcement after every second occurrence of the target behavior, only reinforce after every fourth occurrence.

Other considerations regarding reinforcement

Time-out

The withdrawal of the opportunity to earn positive reinforcement or the loss of access to positive reinforcers for a specified time.

(Cooper, Heron, Heward, 2007 p. 357)

Is the "time-in" environment reinforcing?

The **goal** is to decrease the future occurrence of a target behavior: time out should not be the method of first choice.

Consider using other positive reductive procedures (DRO, DRI)

Behavioral Momentum

A strategy used to increase a child's motivation to respond to tasks that are difficult or challenging.

Premack Principle

Professor's Definition:

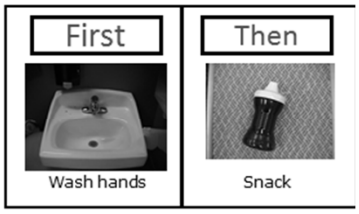
Making the opportunity to engage in a behavior that occurs at a relatively high free operant (or baseline) rate contingent on the occurrence of low-frequency behavior will function as reinforcement for the low-frequency behavior.

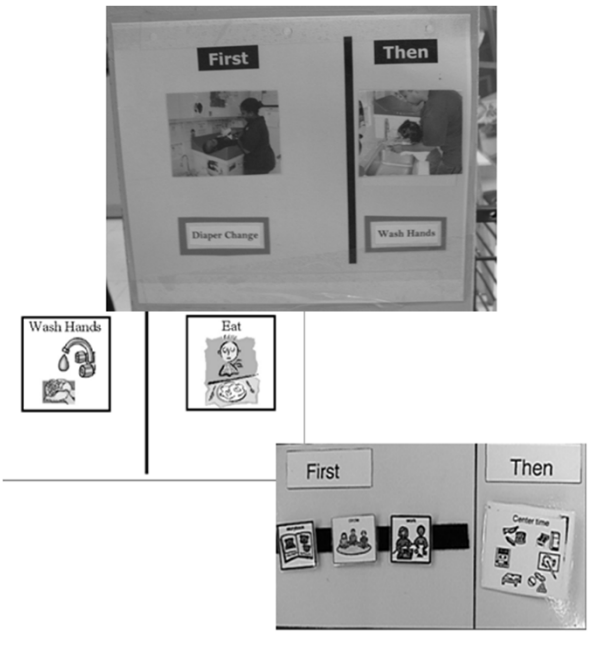
(Cooper, Heron, Heward, 2007, p. 271)

Grandma's Definition:

You have to eat your vegetables before you get your ice cream!

First – Then Board





Noncontingent Reinforcement

Stimuli with a known reinforcing property are delivered on a fixed time schedule independent of the learner's behavior.

Key elements for enhancing the effectiveness of Noncontingent Reinforcement

- Amount and quality of the reinforcer
- Pair with an extinction procedure
- Changes in reinforcer preference

**Remember to thin the schedule!*

Naturalistic Intervention

a collection of practices including environmental arrangement, **interaction** techniques, and strategies based on **applied behavior analysis** principles.

Naturalistic Intervention Step by Step

Seven steps with some sub-components to ensure implementation of naturalistic intervention with fidelity. These steps include:

1. Identifying the **Target Behavior**
2. Collecting **Baseline Data**
3. Identifying Contexts for Intervention
4. Providing Training/Professional Development to Team Members
5. Arranging the Environment to Elicit the Target Behavior
6. Eliciting the Target Behavior, Keeping the Learner Engaged, and Using **ABA** Strategies to Elicit Behaviors
7. Using Data to Monitor Progress and Determine Next Steps

Step 1: Target behavior IFSP/IEP goals

IFSP/IEP goals and target behavior

- **General Goal:** Connor will increase his use of language, (by vocalizing his requests to others.)
- **Possible Target Behavior(s):**
  - –Connor will ask his peers for a turn on the swing while on the playground
  - –Connor will request a push on the swing by asking his teacher to push him
  - –Connor will ask for his “blankie” before naptime

Step 2. Collecting Baseline Data

What's happening now related to this target behavior?

Example of Baseline Data Collection

Target Behavior: *Initiating communication with peers*

Date	Location	Tallies of Target Behavior	Notes (e.g., antecedents, prompts, etc.)
4-7	Circle Time	√	Asked Mitch, "What are we supposed to be doing?"
4-8	Lunchroom	√	Sat alone. Said "hey" when Matt bumped into his table.
4-8	Free Choice Time		Did not speak at all – sat alone in corner of classroom
4-9	Math Center	√	Asked Jason, "Where did you get these blocks?"

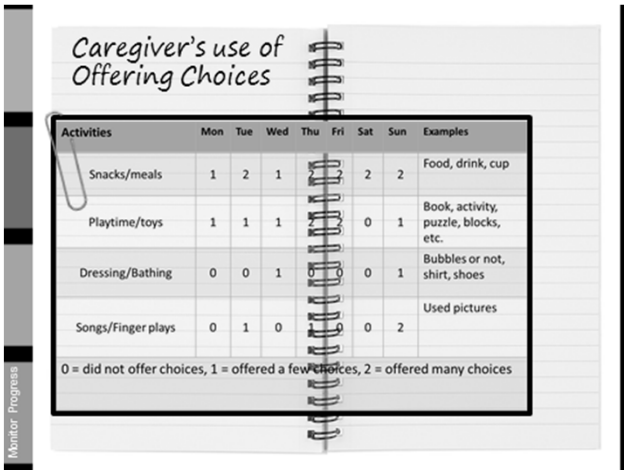
Step 3- Identifying Context for Intervention

Contexts may include:

- Routines- occur regularly. Team builds in opportunities for intervention within routines.
- Learner-directed – learners select what they want to do within a specific environment.
- Planned- set-up in advance (i.e., within a lesson plan/session note) to provide opportunities for learner to practice the target behavior

	General goal: Connor will increase his use of language
Daily Routine/Activity	Target behavior: Connor will make a vocal request for familiar activities or items
Breakfast	
Free choice	

Opportunities for intervention and tracking implementation



Step 4. Providing Training to Team Members

- Adults who interact with the child on a regular basis
- Clearly described procedures to elicit target skills
- Model, practice, video to ensure all adults feel confident and competent

Having multiple adults interact with learners encourages….

Outline procedures that teachers/adults will use

Target behavior: Connor will request a push on the swing

Intervention: Adult models a request

Procedure:

1.Connor's swing stops and the teacher approaches him expectantly,
2.if no request is made then teacher asks, "What do you need Connor?" Waits
3.If no response give him the words to say, "Say, push me." Connor responds, "Push me"
4.Teacher pushes him.

Step 5.
Arranging the Environment to Elicit the Target Behavior

Use what we know about the learner to arrange the learning environment in such a way that we maximize the likelihood that the learner will elicit the behavior.

- Use motivating materials and toys that promote communication and social play:
  - –Multiple parts
  - –Combine with another activity
  - –Require assistance
  - –Encourage turn taking or another person to be involved
- Consider ways that we can be interactive “toys” ourselves
- Materials should be managed by the teacher if we are to encourage communication.

Consider environmental arrangements

Target behavior: Connor will ask for his “blankie” before naptime

Target behavior: Connor will request more Legos from a peer or adult

	General goal: Connor will increase his use of language
Daily Routine/Activity	Target behavior: Connor will make a vocal request for familiar activities or items
Breakfast	Environmental arrangement: Breakfast items are within Connor's sight but out of reach
Free choice	Arrangement: Toys that require a partner are placed in block area

Step 6:
Eliciting the Target Behavior

Engaging the learner in the interaction by providing a language-rich environment and learner-centered interaction where the teacher is highly familiar and responsive to communicative attempts

- RESPONSIVE PARTNER
  - –Following the learner's lead
  - –Positioning so that you can engage in shared attention with the learner
  - –Responding to the learner's verbal and nonverbal initiations
  - –Providing meaningful verbal feedback
  - –Expanding the learner's utterances

Step 6
Eliciting the Target Behavior using Naturalistic Interventions

Set the stage for engagement and interaction to occur
Learner engagement is increased --- language-rich environment and learner-centered interaction

Teacher is highly familiar with and responsive to communicative attempts

Teacher acts as a responsive partner in the interaction

- Following the learner's lead
- Positioning and shared attention
- Responding to initiations
- Providing meaningful verbal feedback
- Expanding the learner's utterances (when appropriate)

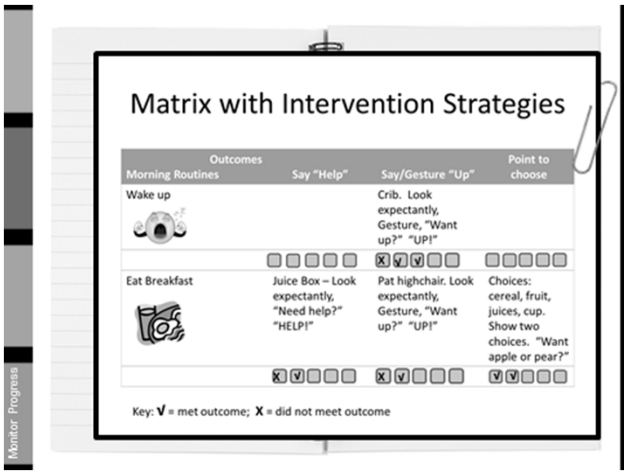
Using **ABA** Strategies to Elicit Behaviors

– Modeling
– Prompting
– Task analysis

Strategies to reinforce behavior once it occurs

	General goal: Connor will increase his use of language
Daily Routine/Activity	Target behavior: Connor will make a vocal request for familiar activities or items
Breakfast	Environmental arrangement: Breakfast items are within Connor's sight but out of reach Intervention: Adult asks, "What do you want for breakfast?" Wait for Connor to respond. If he doesn't then provide a verbal prompt, "Say, Lucky Charms". When Connor responds with "Lucky Charms" pour cereal into his bowl. Leave milk and spoon out of reach to allow Connor to request these items using the same strategy.
Free choice	Arrangement: Toys that require a partner are placed in block area Intervention: Connor chooses a toy and the adult is there to model asking a peer to play. Adult asks Connor if he wants to play with a nearby peer. Then prompts Connor to say, "Play with me?" to his peer. If peer plays then acknowledge, "(peer's name) is playing with you, Connor." If peer does not play then adult will respond to Connor with "I will play with you!" and join in play together.

Step 7: Using Data to Monitor Progress and Determine Next Steps



Fidelity

Fidelity - the degree to which interventions are carried out as planned

Determined by accuracy and consistency of implementation

Fidelity

Reduced by:

- Complex interventions
- Unclear directions or lack of specific instructions
- Lack of knowledge
- Prior history
- Expectations

Improved by:

- Clear directions and procedures
- Monitoring intervention implementation through self-checks or observations

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