Evidence Based Practice Training

Reinforcement

CSESA

The Center on Secondary Education for Students with Autism Spectrum Disorders

Objectives

- Become aware of 27 EBPs identified for students with ASD
- Describe key steps to using reinforcement
  - How to prepare for implementation
  - How to implement
  - How to assess progress
- Identify key pitfalls and ways to avoid them
- Identify ways to learn more about how to implement reinforcement

What are EBPs?

Focused interventions that:

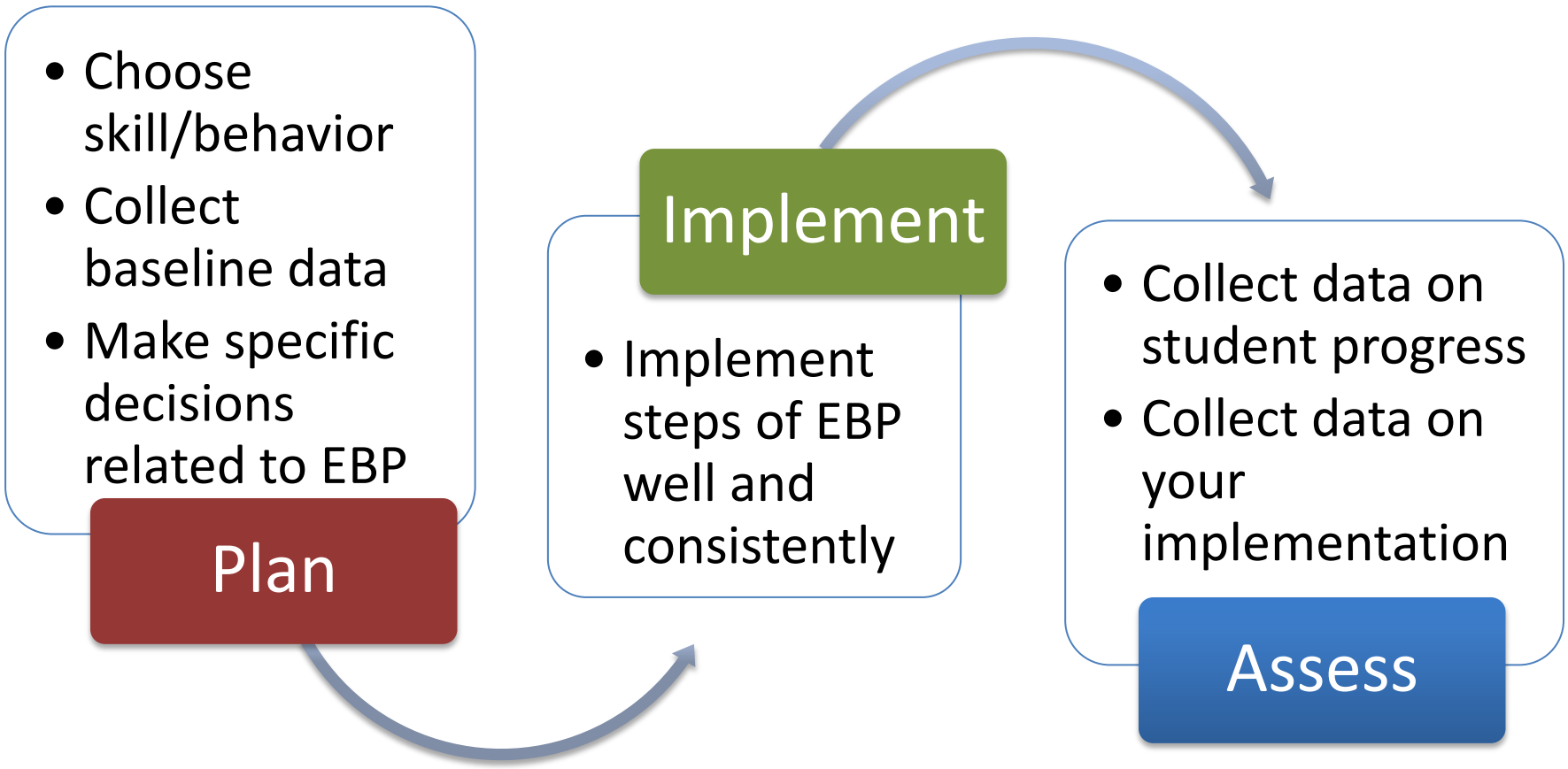
- Produce specific behavioral and developmental outcomes for a student
- Have been demonstrated as effective in applied research literature
- Can be successfully implemented in educational settings

(Odom, Colett-Klingenberg, Rogers, & Hatton, 2010)

Evidence – Based Practices (2014)

- Antecedent-based interventions
- Cognitive behavioral intervention*
- Differential reinforcement
- Discrete trial training
- Exercise
- Extinction
- Functional behavior assessment
- Functional communication training
- Modeling
- Naturalistic interventions
- Parent-implemented intervention
- Peer-mediated instruction/intervention
- Picture Exchange Communication System™
- Pivotal response training
- Prompting
- Reinforcement
- Response interruption/redirection
- Scripting
- Self-management
- Social narratives
- Social skills training
- Structured play groups
- Task analysis
- Technology-aided intervention/instruction
- Time delay
- Video modeling
- Visual supports

For All EBPs


• Choose skill/behavior
• Collect baseline data
• Make specific decisions related to EBP
Plan
Implement
• Implement steps of EBP well and consistently
• Collect data on student progress
• Collect data on your implementation
Assess

Reinforcement

Who uses Reinforcement?

Common Pitfalls

- Staying on primary reinforcer
- Reinforcer not actually motivating for student
- “He doesn’t like anything”
- Not giving immediately
- Not changing schedule of reinforcement once skill is learned
- Reinforcer becoming boring for student

Definition of Reinforcement

- Reinforcement describes an association between a behavior and the consequence that follows the behavior.

- The association is only considered reinforcement if the consequence INCREASES the likelihood that the behavior will occur in the future.

Target Skills Addressed

- Reinforcement is used in conjunction with other EBPs …
  - Such as, prompting, time delay, functional communication training, video modeling
- In order to …
  - Increase adaptive behavior and use of a variety of skills
  - Decrease challenging behavior

3 Types of Reinforcement

Positive Reinforcement

- Present a reinforce after the occurrence of the behavior
- Primary – food, shelter, thirst, warmth (e.g. favorite snack)
- Secondary – praise, tangible (e.g. time on iPad)

Token Economy

- Secondary reinforce system in which student receives tokens for engaging in target behavior/skill. A certain # of tokens are traded in for a reinforcer. (e.g. earn points to trade in for extra time in library)

Negative Reinforcement

- Removing an aversive event following the occurrence of the desired skill/behavior (e.g. take away a difficult task when the student asks for a break appropriately)
- NOT the same as punishment

Steps for Implementation

Steps for Implementation: Positive Reinforcement

Neitzel, J. (2009). *Steps for implementation: Positive reinforcement.* Chapel Hill, NC: The National Professional Development Center on Autism Spectrum Disorders, Frank Porter Graham Child Development Institute, The University of North Carolina.

Reinforcement is an evidence-based practice used to increase appropriate behavior and teach new skills (e.g., replacement behavior in place of an interfering behavior). This document outlines the steps for implementing positive reinforcement with learners with ASD. *Positive reinforcement* is the contingent presentation of a stimulus (i.e., reinforcer) immediately following a learner's use of a target skill/behavior. This relationship between the use of a target skill/behavior and receiving reinforcement increases the future rate and/or probability that the learner will use the skill again.

When planning for and implementing positive reinforcement with learners with ASD, the following steps are recommended.

Step 1. Identifying the Target Skill/Behavior

In Step 1, teachers/practitioners identify a target skill/behavior for a learner with ASD that they would like to increase.

1. Teachers/practitioners define the target skill/behavior in observable and measurable terms.

Example: Sarah will stay seated during English class for 30 minutes.

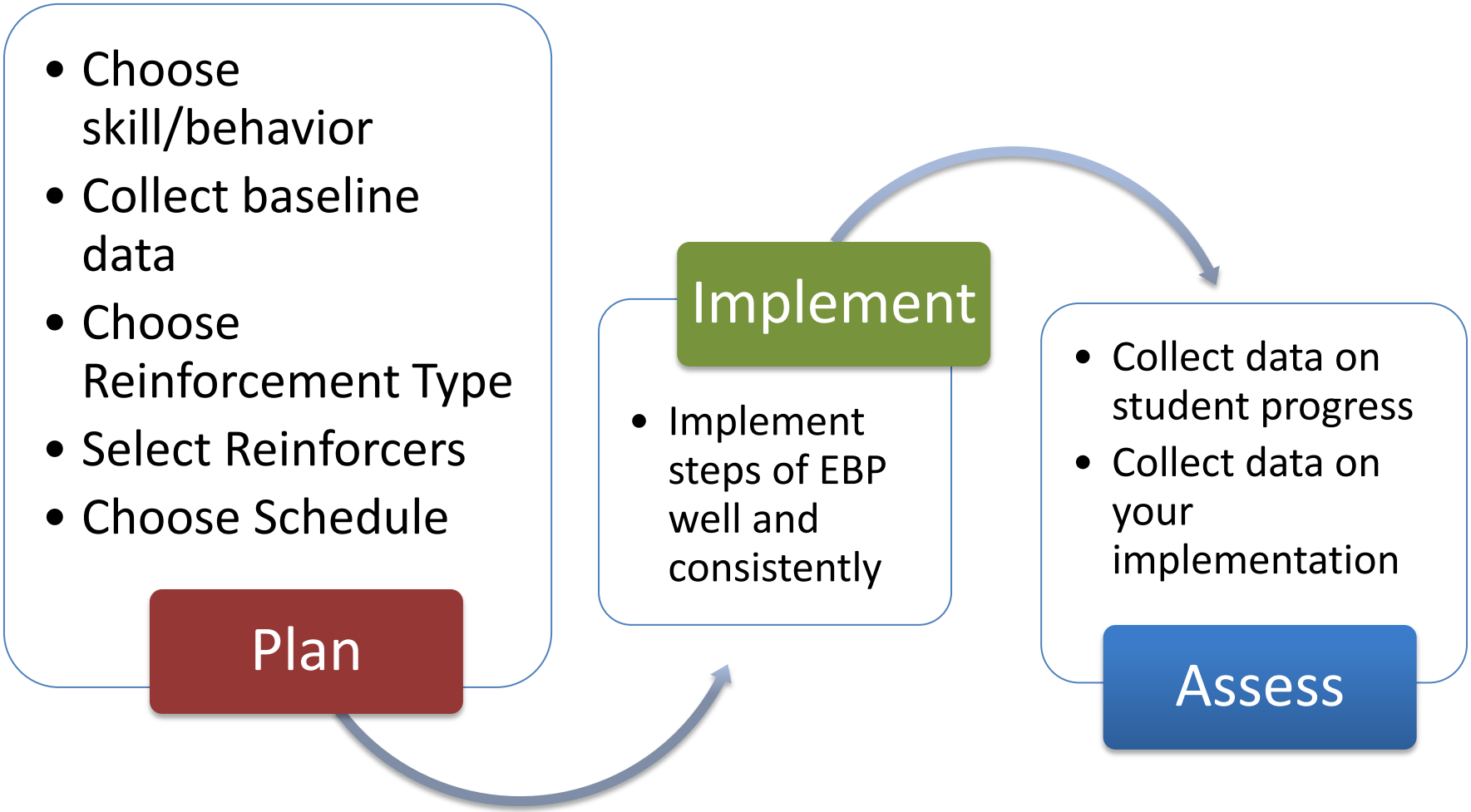
Describing the target skill/behavior in measurable and observable terms allows teachers and other practitioners to collect accurate and reliable baseline data, deliver reinforcement when the learner uses the target skill/behavior correctly, and ensures that all staff members understand what the target skill/behavior looks like so that reinforcement can be delivered consistently across classes and activities.

Step 2. Collecting Baseline Data

Once the target skill/behavior is identified, teachers/practitioners collect baseline data to determine how often the learner with ASD is currently using the target skill/behavior.

http://autismpdc.fpg.unc.edu/content/reinforcement

Implementing Reinforcement



Plan

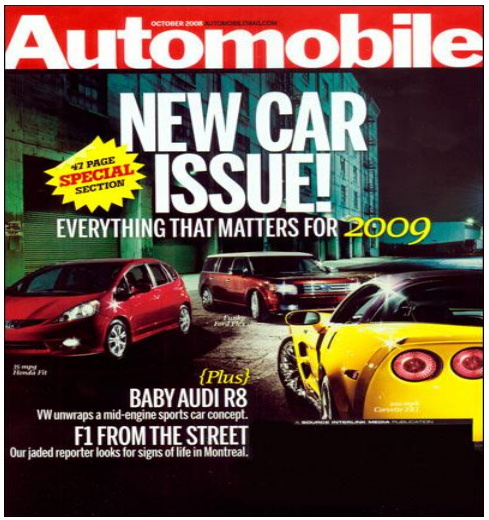
Selecting a Reinforcer

Reinforcer must be *individualized* to the student.
We don't all find the same things reinforcing.

- Indirect methods—use observation, reinforcer survey, or team/family member interviews

- Direct methods—conduct a preference assessment which is direct presentation and observation of the student engaged with potential reinforcers

Reinforcer survey — survey the student using a written or picture list of different reinforcers



Reinforcer Selection – As part of task

If I stay in my seat for 10 minutes, I would like to earn
❑ 10 minutes of extra time on the computer
❑ Extra iPad time
❑ 10 minutes to work on Puzzle
❑ 5 minute walk

Reinforcement Assessment

Examples:

1. Present a number of reinforcing stimuli to the student (no more than 7)
2. Tell the student what each stimulus is and how to operate it if needed
3. Allow the student to engage with each stimulus
4. Record the amount of time the student engages with the stimulus
5. Re-arrange the order of the stimuli & represent
6. Select most reinforcing stimulus based on how long the individual engaged with each one

Plan

Schedules of Reinforcement

Varying schedules of reinforcement offers opportunities for avoiding satiation and building in fading

- Continuous Reinforcement
  - reinforcement of all instances of target behavior
- Intermittent Reinforcement
  - reinforcement after some but not all instances of target behavior
- Fixed/Variable Ratio
  - Reinforcing after every/a number of behavior/skills
- Fixed/Variable Interval
  - Reinforcing after same/different time passes

Continuous vs. Intermittent Reinforcement

Continuous

- Often used when individual is learning a new skill

Intermittent

- Often used when attempting to get individual to maintain a learned skill

- Intermittent Example:
  - Mystery bag—have various reinforcers on cards and have students choose from them at various times in class period for correct responses or use of skills

Examples

	=	1 point

Use your points to buy treats:

candy 5 points	ipod break 8 points	break area 5 points
ipad break 10 points	computer 10 points	coloring break 8 points

Token Reinforcement

I'm working for:

- ☐ Computer time 10pts
- ☐ iPad time 10pts
- ☐ Walk 5pts
- ☐ Break in library 5pts

Points Earned:

☐ ☐ ☐ ☐ ☐

☐ ☐ ☐ ☐ ☐

Natural
Long term Reinforcement

Social Reinforcement

Collecting Data - Example

Identify when Reinforcement was started!

Date/Time	Requested How	Highest Prompt Used	Requested What	With Whom	Before or During reinforcement?
11/16 9:30	Yell	-	Get out of task	Ms. Ryan	Before
9:50	Yell Scream	-	Get out of task	Mr. Bernard	Before
10:20	Yell	-	Get out of task	Mr. Bernard	Before
10:22	Yell	-	Get out of task	Mr. Bernard	Before
10:40	Reach!!! ☺	-	Snack	Ms. Ryan	Before
11:02	Reach!	-	Snack	Ms. Ryan	Before
11:15	Yell	-	Get out of task	Mr. Bernard	Before
11/18 110:00	Yell	Verbal	Get out of task	Mr. Bernard	During
	Reach!	Verbal	Get out of task	Mr. Bernard	During
11/19	Reach ☺	Verbal	Get out of task	Ms. Ryan	During
	Reach	Ver+Vis	Snack	Ms. Ryan	During
	Reach	Ver+Vis	Get out of task	Ms. Ryan	During
11/20	Reach	Ver+Vis	Get out of task	Ms. Ryan	During
	Reach	Vis	Get out of task	Mr. Bernard	During
	Reach	Vis	Get out task	Mr. Bernard	During
	Reach	Vis	Get out of task	Ms. Ryan	During
111:30	Reach	Vis	Get out of task	Mr. Bernard	During
	Reach	Vis	Snack	Mr. Bernard	During
	Reach	Vis	Get out of Task	Mr. Bernard	During
	Reach	Vis	Get out of Task	Mr. Bernard	During

Collecting Data
"Staying On Task"

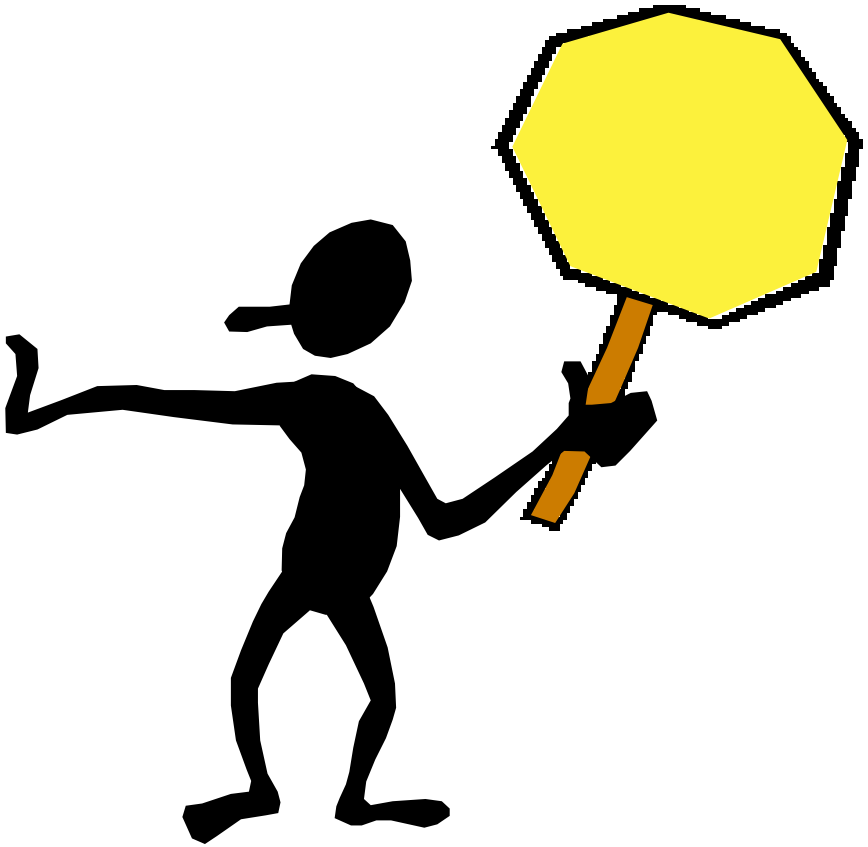
Date	Start time	End Time	Total minutes	Setting/activity	Before, during, or after reinforcement
7/26/08	9:00	9:01	1	Reading	Before
7/27/08	9:05	9:06	1	Math	Before
7/28/08	9:00	9:02	2	Science	Before
7/29/08	9:10	9:12	2	Resource room	Before
7/30/08	9:10	9:14	4	Science	During
7/31/08	9:15	9:20	5	Resource room	During
8/01/08	9:05	9:10	5	Reading	During

Common Problems and Solutions

Potential Reason	Potential Solution
Is the reinforcer of value to the student? How do you know?	Conduct reinforcement sampling to identify reinforcers that the student prefers and ones that he or she doesn't.
Is the student satiated/bored with the reinforcer? Is the reinforcer overused?	Only use the specific reinforcer when expecting the student to use a specific behavior/skill. For example, if using time to play games on the computer, only give student access to the computer to play games as reinforcer. Student shouldn't have access throughout the day otherwise.
Is the schedule of reinforcement inconsistent with what the student needs?	If the student hasn't made the connection between the desired behavior/skill and the reinforcer, he or she will require the reinforcement to be provided after every successful use of the behavior/skill. Shifting to another schedule or reinforcement (a different ratio or different interval) will have to wait.
Are you not sure if the reinforcer is working?	Collecting data is important in order to best understand if reinforcement is or isn't impacting the student's responses. When taking data on student responses make note of the reinforcers used to identify if some support the student's use of the target skill/behavior better than others.

CAUTION!

Avoid Satiation



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Avoid Satiation!

To Avoid Satiation:	How to:
Menu of reinforcers	After conducing reinforcer sampling, observation and/or interest inventory keep on hand a number of the reinforcers identified.
Vary reinforcers	If the student very much enjoys car and motorcycle magazines, alternate between these when providing reinforcement for a skill/behavior.
Teach during several short sessions	Several short sessions helps to ensure that the student won't tire of the reinforcer before he has enough opportunities to practice the skill/behavior.
Avoid using edibles. If they must be used, use a variety.	Edibles (a primary reinforcer) should be used only when other reinforcers have not been identified or if the edible is a natural reinforcer (e.g., the student is working on requesting and requests popcorn. Then popcorn is provided). If used, various types should be used and they should be paired with other types of reinforcement (e.g., social).
Shift from primary reinforcers to secondary reinforcers as soon as possible and pair them from the beginning.	Since students with ASD are less likely than their typically developing peers to value secondary reinforcers, pair these with more valued reinforcers from the beginning. As the student becomes more motivated by secondary reinforcer, fade the primary reinforcer.
If student does lose interest in reinforcer, choose a new one.	If the student stops using the skill/behavior after mastering it or shows disinterest in reinforcer, change it. An inventory or reinforcer sampling may need to be repeated if no other reinforcers are immediately apparent.

Fading Reinforcement?

- We often move to this step too quickly. No one wants their paycheck faded.
- The more pertinent question to ask is:

How do I make the reinforcer more natural both in

- *type of reinforcers used and*
- *the schedule of reinforcement)?*

Key to Reinforcement

Reinforcement is most likely to be effective when it:

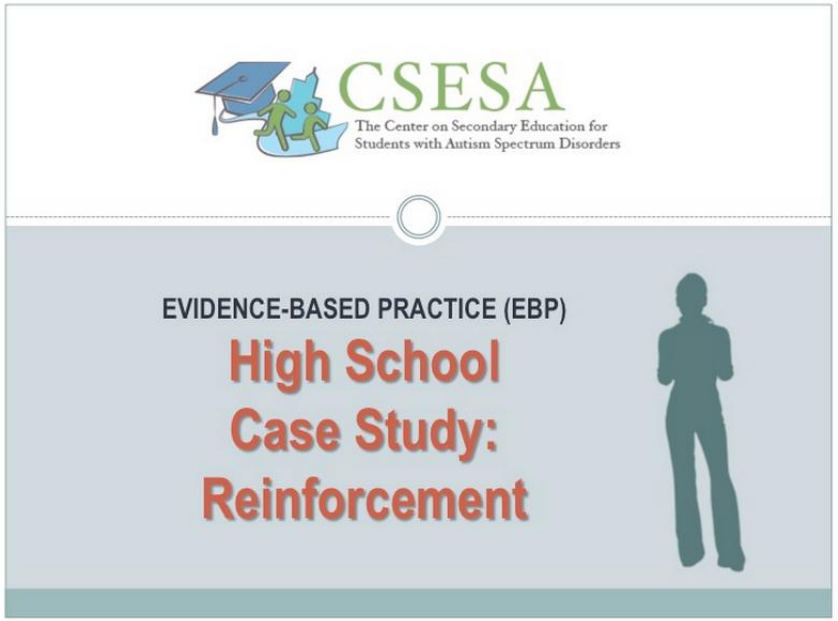
- Immediately follows the target behavior
  - Give reinforcer
  - Remove mildly aversive situation
- Fits the target behavior
- Is meaningful to the student with ASD
- Is used in conjunction with other reinforcers

To Learn More…

Find additional information on Reinforcement and other

Evidence Based Practices within the following resources.

EBP Case Studies for High School



Reinforcement case study files:

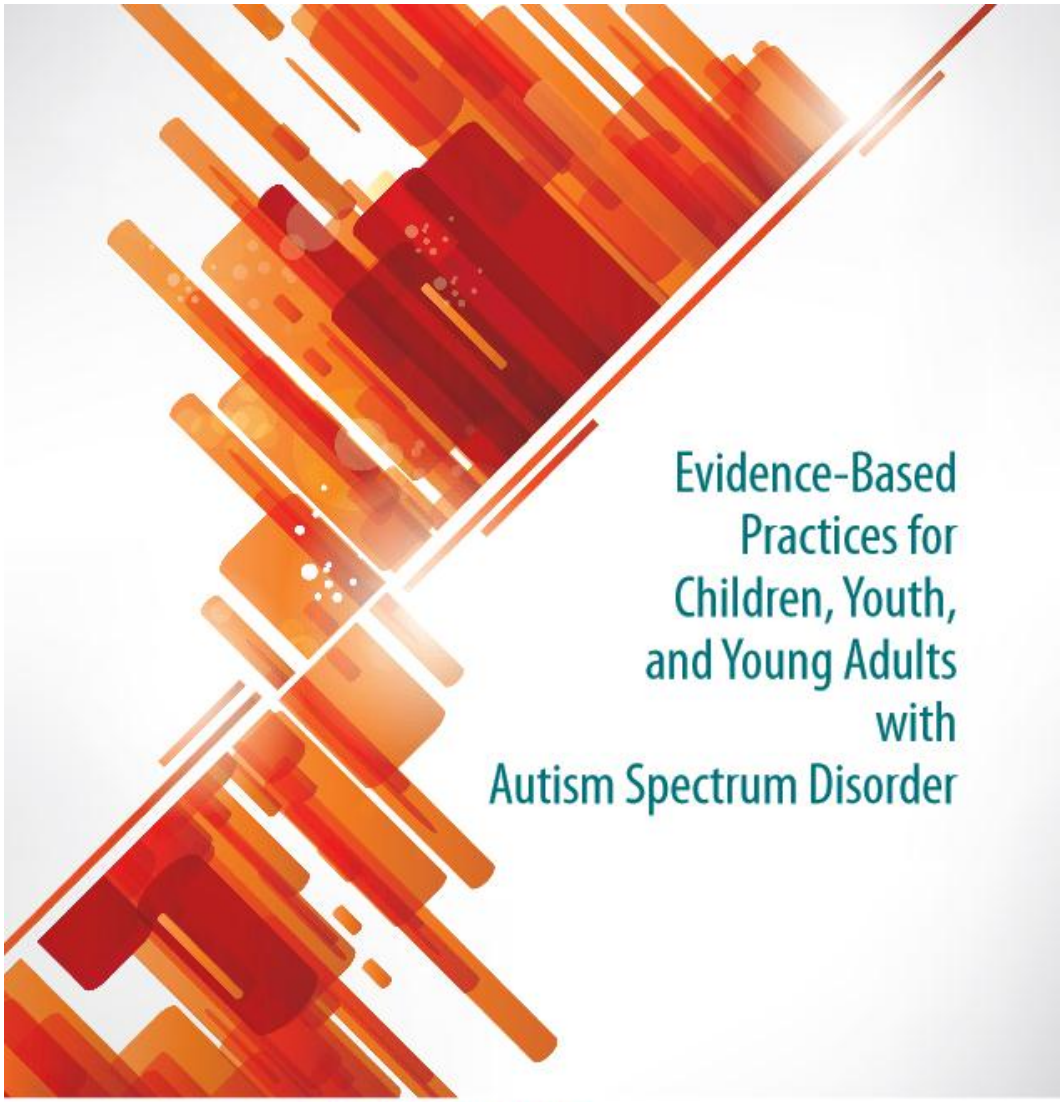
- Reinforcement Case Study GAS Goal 1 form [PDF]
- Reinforcement Case Study GAS Goal 2 form [PDF]

Reinforcement EBP Brief

http://csesa.fpg.unc.edu/high-school-case-studies

Evidence-based Practice Resources

- EBP literature review http://autismpdc.fpg.unc.edu/sites/autismpdc.fpg.unc.edu/files/2014-EBP-Report.pdf
- EBP Case Studies for High School
- EBP Briefs (http://autismpdc.fpg.unc.edu)
  - Overview
  - Evidence Base
  - Steps for Implementing
  - Implementation Checklist
  - Sample Data Collection Forms (optional)
- Autism Internet Modules (http://www.autisminternetmodules.org)



EBP Literature Review

Example: Step-by-Step Directions

Step 1. Identifying and Setting Up the Device

In Step 1, teachers/practitioners focus on identifying an appropriate SGD device for the learner with ASD by taking into account a number of factors including learner needs and characteristics, and available training and technical assistance.

1. Teachers/practitioners select an appropriate device, taking into account how the information is displayed, the learner's present and potential abilities (e.g., attention span, experience with symbols, ability to establish joint attention), portability of the device, available training and technical assistance, and funding sources.

Teachers/practitioners also choose a number of symbols in the visual field that the learner will be able to discriminate easily by considering the learner's attention span, experience with symbols, and ability to establish joint attention (Ogletree & Harn, 2001).

2. Teachers/practitioners introduce the device to the learner by having a device with few symbols and/or buttons with nothing on them.

To begin, teachers/practitioners introduce a single symbol and have buttons with nothing on them to introduce the idea that the symbol, not the button, is the important factor.

3. Teachers/practitioners include desirable and undesirable symbols to facilitate the learner's ability to discriminate.

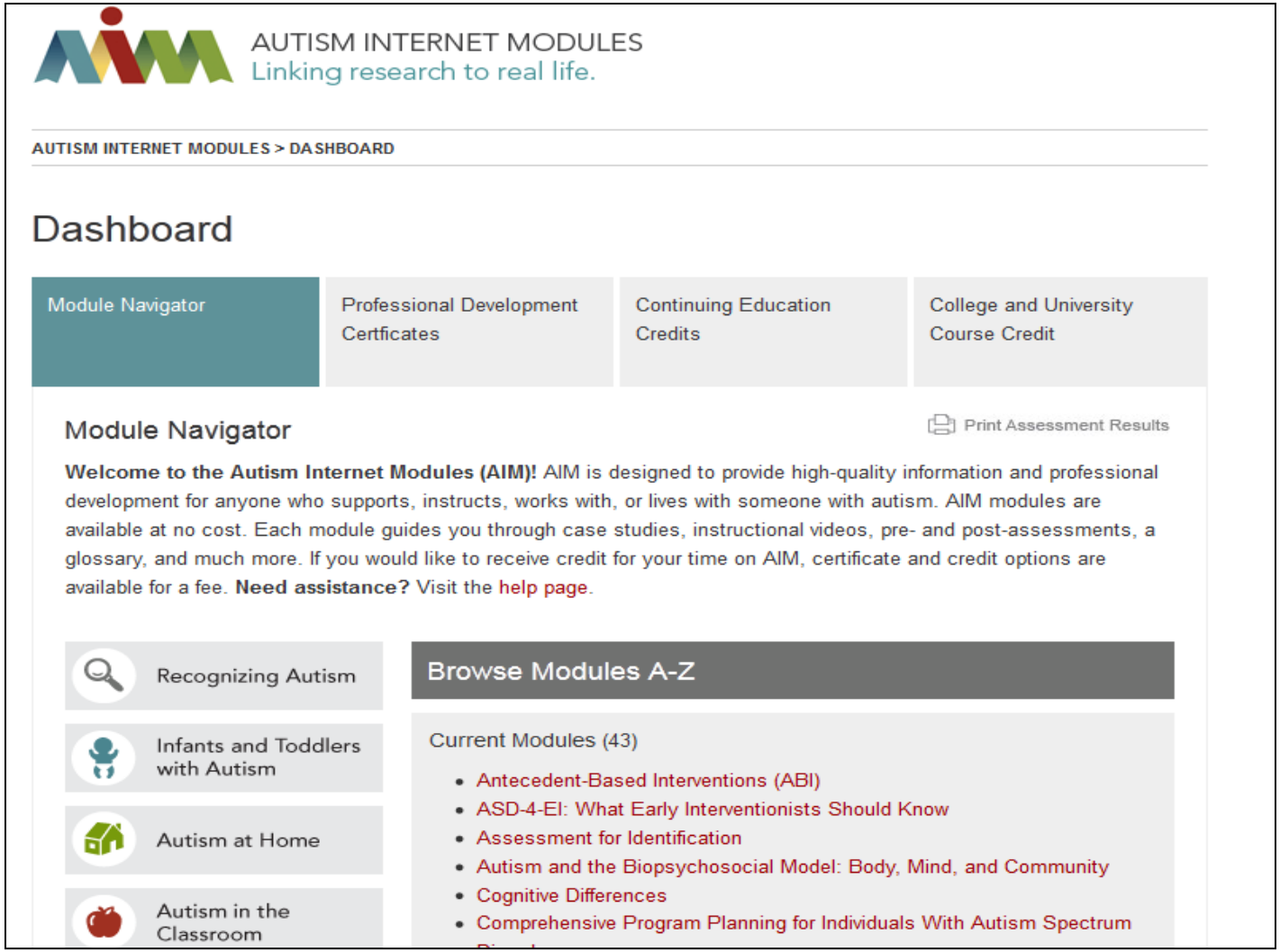
Example: Implementation Checklist

	Observation	1	2	3	4	5	6	7	8
	Date	6/14/11							
	Observer's Initials	AC							
Planning (Steps 1 – 5)									
Step 1. Identifying and Setting Up the Device		**Score****							
1. Select an appropriate device, taking into account how the information is displayed, the student's present and potential abilities (e.g., attention span, experience with symbols, ability to establish joint attention), portability of the device, available training and technical assistance, and funding sources.		**2**							
1. Introduce the device to the student by having a device with few symbols and/or buttons with nothing on them.		**2**							
1. Include desirable and undesirable symbols to facilitate the student's ability to discriminate.		**0**							
Step 2. Introducing Direct Support Persons to the Device									
1. Team members are identified and trained in how to program and use the device.		**2**							
1. One or two key members of the team are identified as primary contacts regarding its use.		**0**							

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

Autism Internet Modules

- http://www.autisminternetmodules.org/



Action Plan

What will I do tomorrow:

1.
2.
3.

Questions