

# Florida State University's Autism Institute

## 2023 Summer Training Institute on Autism: *Advances in Evidence-Based Practice for Autism Spectrum Disorder*

June 13 – June 15, 2023

Presenter: Kara Hume, Ph.D

Title and Format: Using Evidence Based Practices to Support Meaningful Outcomes for Autistic Students  
(PDF of PowerPoint slides)

Date: June 14, 2023

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# Using Evidence Based Practices to Support Meaningful Outcomes for Autistic Students

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Evidence and Practice,  
<https://ncaep.fpg.unc.edu/>



THE UNIVERSITY  
of NORTH CAROLINA  
at CHAPEL HILL

*Language use: Will be using identity first language, or “on the spectrum” per Botha, Hanlon, & Williams, 2021*

# About Me



# Learning Objectives



1

Identify evidence-based practices (EBPs) for children & youth with autism

2

Describe the process for selecting EBPs to address meaningful outcomes for children & youth with autism

3

Know where to access internet supports for learning how to plan for, use, and monitor EBPs for children & youth with autism



# Identifying Evidence-Based Practices

1



## REFLECTION ACTIVITY

# How do you define evidence-based practices?

- Practices that works in your classroom?
- Practices a colleague told you about it?
- First person or Family recommendations?
- Internet searches?
- Review of research?



## IDENTIFYING EBPS

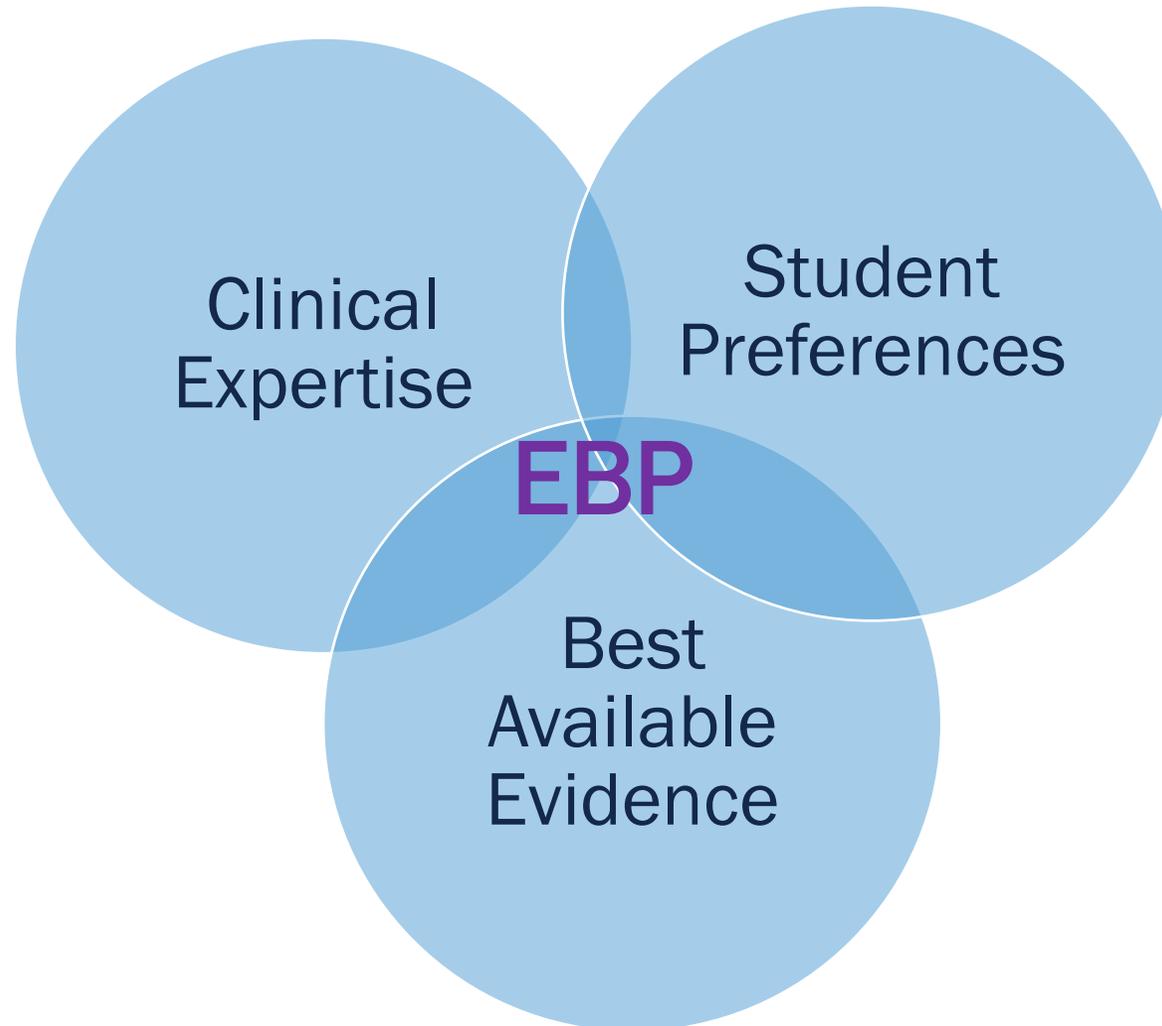
# How do we define EBPs?

### Focused interventions that:

- Support meaningful outcomes for a child
- Have been demonstrated as effective in applied research literature
- Can be successfully implemented in educational settings



# Define EBPs



## IDENTIFYING EBPS

# Why EBPs?

- We know they work-empirically based evidence
- We know we can implement them effectively
- We can see if child is making progress and shift if needed



# How do we use EBPs?

## With practitioners & Technical Assistance providers:

- Providing training/fidelity
- Providing technical assistance/coaching
- Monitoring progress
- Measuring outcomes

## With children & youth:

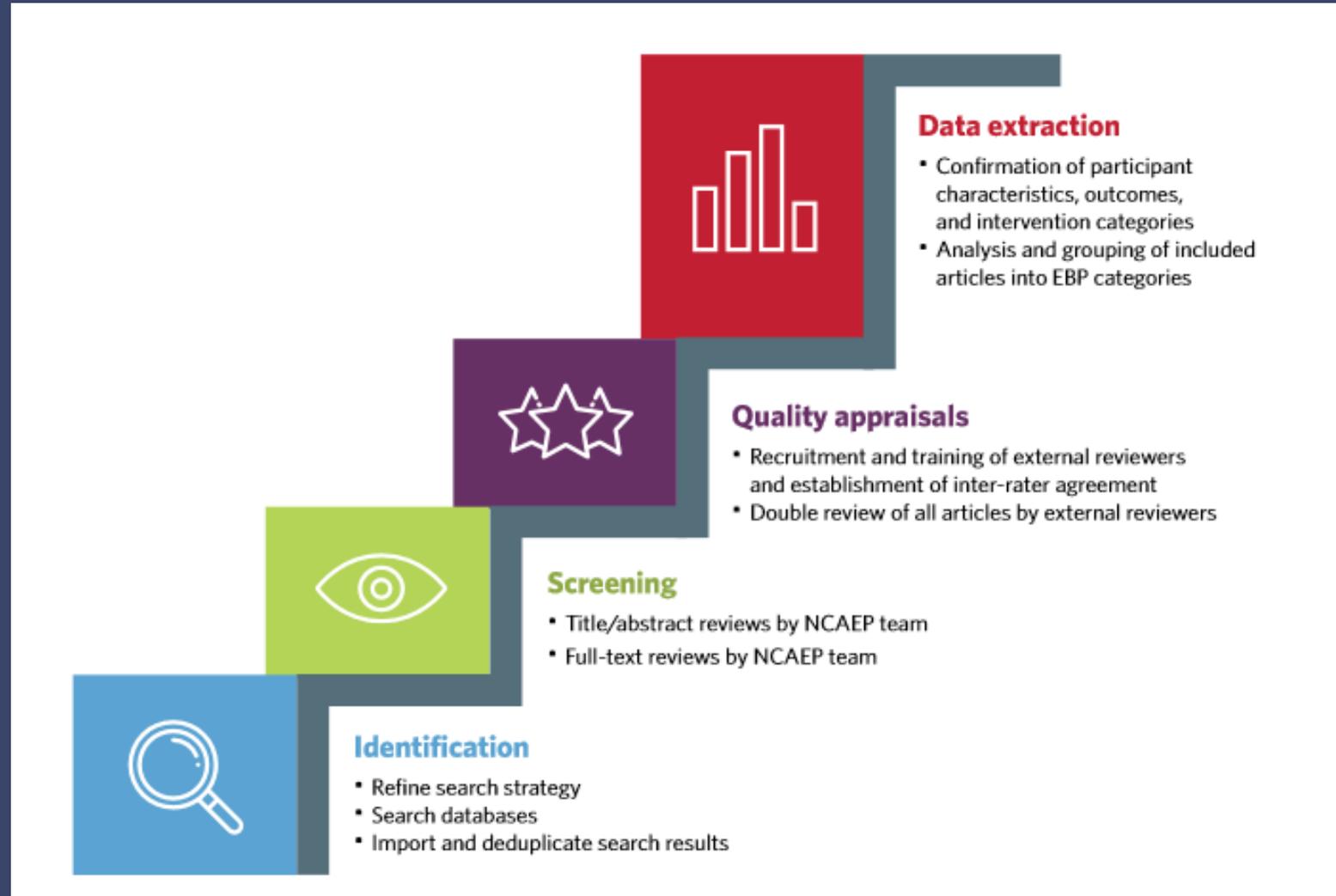
- Achieving IEP goals
- Developing priority skills
- Monitoring progress

## IDENTIFYING EBPS

# Current Review of EBPs

The screenshot shows the homepage of the National Clearinghouse on Autism Evidence & Practice (NCAEP). The header features the organization's logo, a 'GIVE NOW' button, social media icons for Facebook and Pinterest, and a search bar. A navigation menu includes 'Home', 'About NCAEP', 'News & Updates', and 'Research & Resources'. A prominent orange banner announces that the 'NEW and much anticipated report on Evidence-Based Practices is complete and ready for you. View Report >'. Below this, three main content blocks are displayed: 1) 'BRIDGING SCIENCE AND PRACTICE' with a photo of a woman and child, describing NCAEP as a continuation of the NPDC's work, and a 'LEARN MORE' button. 2) '2020 EVIDENCE-BASED PRACTICES REPORT' with a report cover image, titled 'Evidence-Based Practices for Children, Youth, and Young Adults with Autism', and a 'DOWNLOAD HERE' button. 3) 'AUTISM FOCUSED INTERVENTION RESOURCES AND MODULES' with the AFIRM logo, describing it as a free online tool, and a 'LOGIN' button.

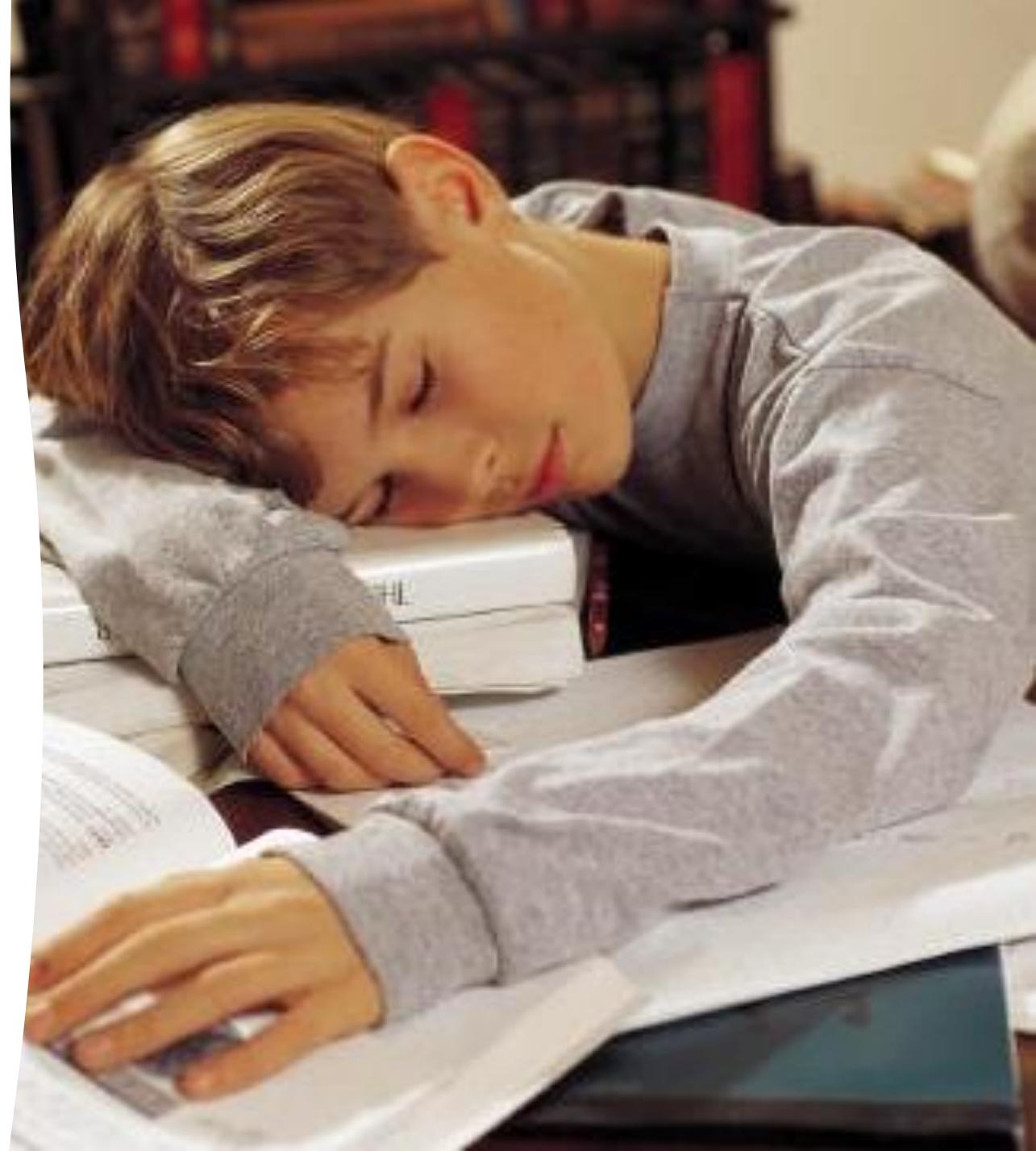
# Current Review of EBPs



<https://ncaep.fpg.unc.edu>

### 3RD GENERATION

- Screened more than 31,000+ articles published from 2012-2017
- 634 included for full text review
  - 545 with effects



# Criteria for Evidence-Based Practices



## IDENTIFYING EBPS

# How many EBPs?

28

Steinbrenner et al., 2020

<https://ncaep.fpg.unc.edu/research-resources>

NATIONAL CLEARINGHOUSE ON AUTISM EVIDENCE & PRACTICE

## Evidence-Based Practices for Children, Youth, and Young Adults with Autism

Jessica R. Steinbrenner, Kara Hume, Samuel L. Odom,  
Kristi L. Morin, Sallie W. Nowell, Brianne Tomaszewski,  
Susan Szendrey, Nancy S. McIntyre,  
Şerife Yücesoy-Özkan, & Melissa N. Savage

The National Clearinghouse on  
Autism Evidence & Practice  
NCAEP • BRIDGING SCIENCE AND PRACTICE

National Clearinghouse on Autism Evidence  
and Practice Review Team

 **UNC** | FRANK PORTER GRAHAM  
CHILD DEVELOPMENT INSTITUTE

## Evidence-Based Practices

- A set of manualized interventions grouped within established EBP categories now themselves have sufficient evidence to be classified as evidence-based: PECS®, PRT, JASPER, Milieu Training, Project ImPACT, Stepping Stones/Triple P, Social Stories™, PEERS®, Mindreading, and FaceSay®.

### Antecedent-Based Interventions

Augmentative and Alternative Communication

Behavioral Momentum Intervention

Cognitive Behavioral/Instructional Strategies

Differential Reinforcement of Alternative, Incompatible, or Other Behavior

Direct Instruction

Discrete Trial Training

Exercise and Movement

Extinction

Functional Behavioral Assessment

Functional Communication Training

Modeling

Music-Mediated Intervention

Naturalistic Intervention

### Parent-Implemented Intervention

Peer-Based Instruction and Intervention

Prompting

Reinforcement

Response Interruption/Redirection

Self-Management

Sensory Integration®

Social Narratives

Social Skills Training

Task Analysis

Technology-Aided Instruction and Intervention

Time Delay

Video Modeling

Visual Supports

Find the EBP definitions at <http://go.unc.edu/2020EBPs>.

# Changes in Practices

## New Practices

- Augmentative & Alternative Communication (AAC)
- Behavioral Momentum (BM)
- Direct Instruction (DI)
- Music-Mediated (MMI)
- Peer-Based (PBII)
- Sensory Integration (SI)

## Merged Practices

- PECS → AAC
- PRT → Naturalistic
- Scripting → Visual Supports
- Structured Play Groups → PBII
- Peer-Mediated → PBII

# Read the Full Report

<https://ncaep.fpg.unc.edu/research-resources>

- Summary
- Research Article
- Null Findings
- Sensory Integration Companion Guides



# EBP DATABASE

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The EBP database is designed to help you in the EBP selection process. First, select the relevant age range and choose the domain you are targeting. Next, click "Apply". The information will be presented in two ways.

On the right side of the screen you will see all of the included articles that target your selected age range and domain, along with the associated EBPs.

On the left side of the screen you will see the menu of EBPs that have proven effective in addressing the selected outcome for the targeted age range. You will also see the number of articles associated with each EBP in parentheses after the EBP. You can click the EBP to see the articles that contribute to the evidence base for each practice.

Age

6-11.9 years



Domains

Play



APPLY

CLEAR

EBP

Antecedent-based interventions (1)

Augmentative and alternative communication (2)

Displaying 1 - 40 of 65

[A comparison of video modeling with in vivo modeling for teaching children with autism](#)

**Age(s):** 6-11.9 years

**Domain(s):** Communication, Play, Social

**EBP(s):** Video modeling

<b>Name of EBP</b>	<b>Augmentative and Alternative Communication (AAC)</b>
<b>Definition of EBP</b>	<p>Augmentative and Alternative Communication (AAC) interventions use and/or teach the use of a system of communication that is not verbal/vocal including aided and unaided communication systems. Unaided communication systems do not use any materials or technology (e.g., sign language and gestures). Aided communication systems include low tech systems (e.g., exchanging objects/pictures or pointing to letters) and extend to high tech speech generating devices (SGDs) and applications that allow other devices (i.e., phones, tablets) to serve as SGDs. Methods of teaching AAC use are also included in this category (e.g., Aided Language Modeling) which may include other EBPs such as prompting, reinforcement, visual supports, and peer-mediated interventions.</p> <ul style="list-style-type: none"> <li>Manualized Interventions Meeting Criteria: Picture Exchange Communication System® (PECS®; Bondy and Frost, 1985).</li> </ul>

Outcome Areas		Age Ranges					
		0-2 Toddlers	3-5 Preschoolers	6-11 Elementary School	12-14 Middle School	15-18 High School	19-22 Young Adults
	Communication	✓	✓	✓	✓	✓	
	Social	✓	✓	✓		✓	
	Joint attention	✓	✓	✓			
	Play	✓	✓	✓			
	Cognitive						
	School readiness						
	Academic/ Pre-academic		✓	✓			
	Adaptive/ self-help						
	Challenging/ Interfering behavior		✓	✓			
	Vocational						
	Motor					✓	
	Mental health						
	Self-determination						

**References**

1. Agius, M. M., & Vance, M. (2016). A comparison of PECS and iPad to teach requesting to pre-schoolers with autistic spectrum disorders. *Augmentative and Alternative Communication*, 32(1), 58-68. <https://doi.org/10.3109/07434618.2015.1108363>
2. Ali, E., MacFarland, S. Z., & Umbreit, J. (2011). Effectiveness of combining tangible symbols with the Picture Exchange Communication System to teach requesting skills to children with multiple disabilities including visual impairment. *Education and Training in Autism and Developmental Disabilities*, 46(3), 425-435.
3. Almirall, D., DiStefano, C., Chang, Y.-C., Shire, S., Kaiser, A., Lu, X., Nahum-Shani, I., Landa, R., Mathy, P., & Kasari, C. (2016). Longitudinal effects of adaptive interventions with a speech-generating device in minimally verbal children with ASD. *Journal of Clinical Child & Adolescent Psychology*, 45(4), 442-456. <https://doi.org/10.1080/15374416.2016.1138407>
4. Alzrayer, N. M., Banda, D. R., & Koul, R. (2017). Teaching children with autism spectrum disorder and other developmental disabilities to perform multistep requesting using an iPad. *Augmentative and Alternative Communication*, 33(2), 65-76. <https://doi.org/10.1080/07434618.2017.1306881>

# Limitations in the Studies

Figure 3.4 Age of participants across review periods

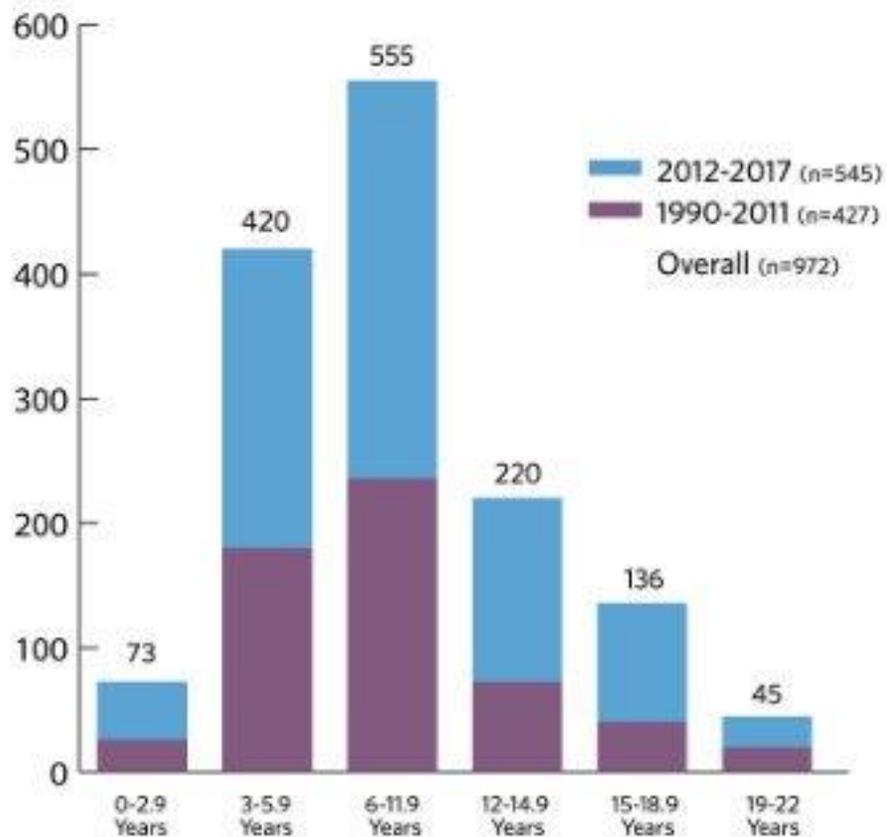


Table 3.4 Race/ethnicity/nationality and gender/sex of participants in 2012-2017 review period

Gender/Sex	2012-2017	
	Articles (n=545)	Participants
Male	485	5934
Female	259	1097
Not reported	38	
<b>Total</b>		<b>7031</b>
Race/Ethnicity/Nationality		
African American/Black	74	343
Asian	52	314
Hispanic/Latino	52	281
Middle Eastern	9	45
Native American	1	1
Native Hawaiian/Pacific Islander	3	3
White	130	2101
Two or more/Multi-racial	24	119
Other	29	257
Not specified	7	88
Not reported	381	
<b>Total</b>		<b>3552</b>



## The evidence-based practices for children, youth, and young adults with autism report: Concerns and critiques

Justin B. Leaf<sup>1,2</sup>  | Sara K. Sato<sup>1</sup> | Asim Javed<sup>1</sup> |  
Shannon M. Arthur<sup>1</sup> | Ashley N. Creem<sup>1</sup> | Joseph H. Cihon<sup>1,2</sup>  |  
Julia L. Ferguson<sup>1,2</sup>  | Misty L. Oppenheim-Leaf<sup>3</sup>

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<sup>3</sup>Research Department, Behavior Therapy and Learning Center, Seal Beach, California, USA

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### Abstract

For individuals diagnosed with autism spectrum disorder (ASD) to make meaningful progress comprehensive intervention using evidence-based practices is required. To assist with this, the National Clearinghouse on Autism Evidence and Practice (NCAEP) recently published the *Evidence-Based Practices for Children, Youth, and Young Adults with Autism Report* (Steinbrenner et al., 2020). The purpose of the NCAEP report was to provide consumers with a list of interventions that have evidence of positive effects for individuals diagnosed with ASD. The NCAEP report identified 28 interventions that were considered evidence based. Given the broad nature and visibility of the NCAEP report, it may be useful to review and discuss any potentially problematic aspects of the methods and results of the NCAEP report to help inform future updates and consumers in interpreting the findings and recommendations within the NCAEP report. Thus, the purpose of this paper is to provide a review of the *Evidence-Based Practices for Children, Youth, and Young Adults with Autism report* and provide recommendations to behavior analysts in regard to the report.

### KEYWORDS

empirically supported, evidence-based practices, functional control, national standards, pseudoscience

- Criticism for including single case design studies AND for excluding some types of SCD studies
- Broad categories of interventions
- How to handle null findings

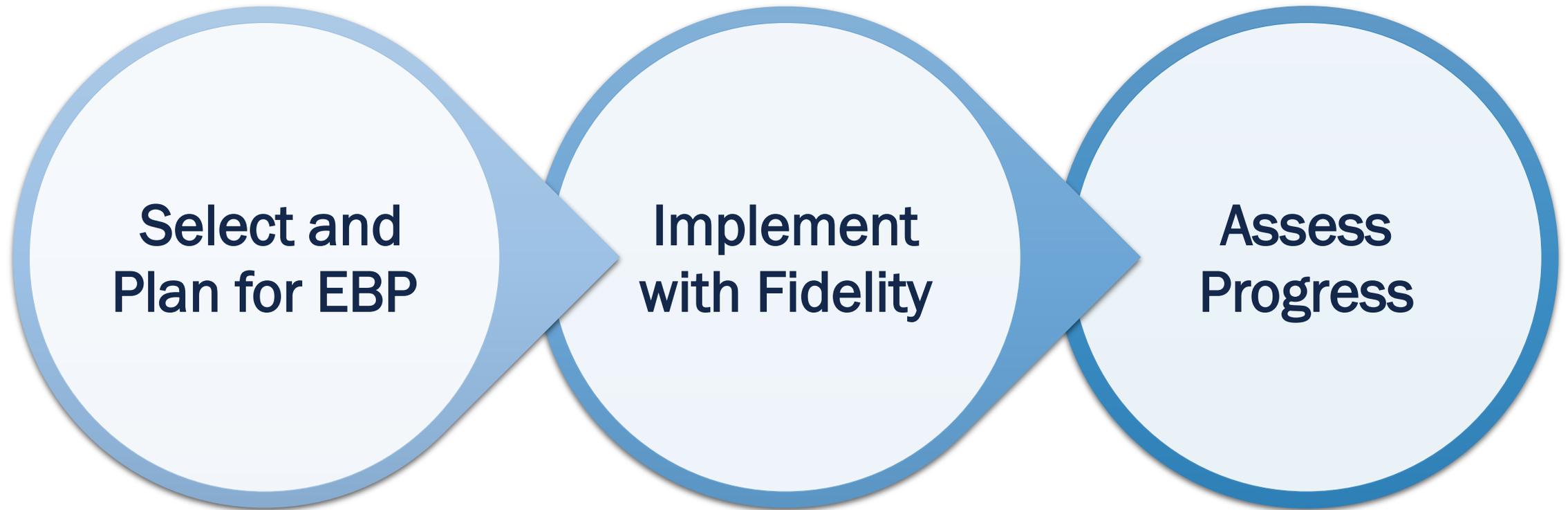


# Selecting Evidence-Based Practices

2

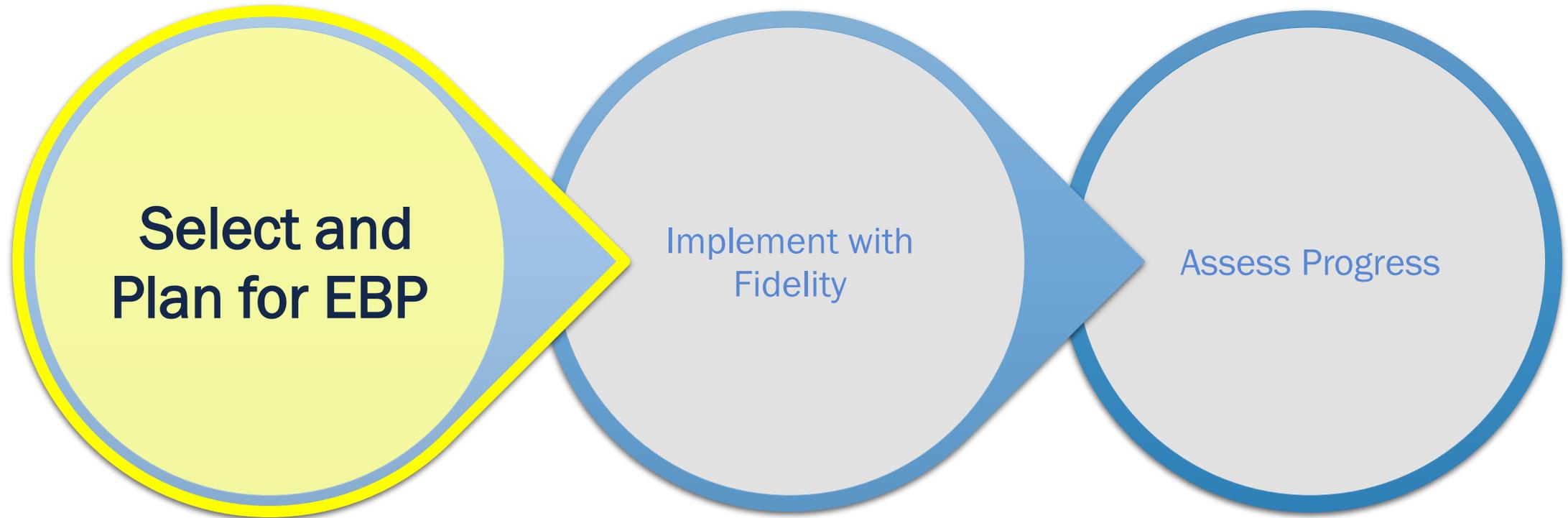
SELECTING EBPS

# The EBP Process



SELECTING EBPS

# The EBP Process



# Priority Outcomes



**Table 4.** Online survey participants who endorsed “This Outcome Matters to Me” and weighted rank ( $n = 136$ ).

Outcome	“Yes—matters to me,” $f$ (%)	Relative weighted rank <sup>a</sup>
Quality of life	130 (95.6)	1
Anxiety	122 (89.7)	2
Depression	111 (81.6)	3
Social well-being	107 (78.7)	4
Sleep	107 (78.7)	5
Interpersonal relationships	103 (75.7)	6
Suicidal ideation	92 (67.6)	7
Level of participation in activities of daily living	94 (69.1)	8
Level of participation in work	92 (67.6)	9
Suicidal attempts	87 (64.0)	10
Level of participation in your community	79 (58.1)	11
Intimacy and/or sex	76 (55.9)	12
Level of participation in leisure activities	77 (56.6)	13
Brain activity/EEG	47 (34.5)	14
Heart rate	44 (32.4)	15

<sup>a</sup>Weighting for ranks were calculated as the sum of the number of participant responses ranking that item as “1,” “2,” . . . “15” multiplied by the weight. A rank of “1” was given a weight of 15, and a rank of “15” was given a weight of “1.”

Benevides, T. W., Shore, S. M., Palmer, K., Duncan, P., Plank, A., Andresen, M. L., ... & Coughlin, S. S. (2020). Listening to the autistic voice: Mental health priorities to guide research and practice in autism from a stakeholder-driven project. *Autism*, 24(4), 822-833.

# Priority Outcomes

- [https://csesa.fpg.unc.edu/sites/csesa.fpg.unc.edu/files/resources/SSS-C\\_STUDENT.pdf](https://csesa.fpg.unc.edu/sites/csesa.fpg.unc.edu/files/resources/SSS-C_STUDENT.pdf)

## Top 5 Priorities

We used the Secondary Skills Success Checklist (SSSC) to gather information from teens, families, and teachers about needs and priorities for students on the autism spectrum.

Below is a list of the top priorities for each of the three groups of responders. You can see that there is a lot of common ground between families, teachers, and the teens.

Skill	This is <b>NOT</b> like me.	This is <b>sort of</b> like me.	This is <b>very much</b> like me.	I have <b>not had a chance</b> to try this.	<b>Not sure</b>	I would <b>NOT</b> like to learn this.	I would <b>sort of</b> like to learn this.	I <b>really want</b> to learn this.	I <b>already know how</b> to do this.
 1. Read each skill:	2. Choose only <b>one</b> answer in the grey boxes that best describes you <b>today</b> .				3. Then choose <b>one</b> answer in the white boxes that best describes how much you want to learn the skill.				
1. I keep track of my homework and turn it in on time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I bring everything I need to my classes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I ask teachers for help if I need it during class.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. When I have a problem in class I can figure out a solution.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I look clean when I go to school.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I talk with other students about things they like.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Students



- HAVE IDEAS ABOUT GOALS AFTER HIGH SCHOOL
- COMPLETE ASSIGNMENTS
- NAVIGATE HIGH SCHOOL CAMPUS
- BRING MATERIALS TO CLASS
- KEEP TRYING DURING HARD TASK

### Parents

- COMPLETE ASSIGNMENTS
- LISTEN TO OTHERS DURING INTERACTIONS
- SOLVE PROBLEMS IN CLASS
- ASK TEACHERS FOR HELP
- ASK TEACHERS FOR CLARIFYING INFORMATION



### Teachers

- KEEP TRYING DURING HARD TASK
- ASK TEACHERS FOR HELP
- LISTEN TO OTHERS DURING INTERACTIONS
- ASK TEACHERS FOR CLARIFYING INFORMATION
- HAVE IDEAS ABOUT GOALS AFTER HIGH SCHOOL





Table 3.5 Outcomes identified across review periods

<https://ncaep.fpg.unc.edu/sites/ncaep.fpg.unc.edu/files/imce/documents/NCAEP%20Report%20-%20Table%203.5%20-%20Outcomes.pdf>

Domain/Instructional Outcome	Definitions	1990-2011 (n)	2012-2017 (n)	1990-2017 (n)
Academic/Pre-academic	Outcomes broadly related to performance on tasks typically taught and used in school settings	55	96	<b>151</b>
Adaptive/Self-help	Outcomes related to independent living skills and personal care skills	52	53	<b>105</b>
Challenging/Interfering behavior	Outcomes related to decreasing or eliminating behaviors that interfere with the individual's ability to learn	147	121	<b>268</b>
Cognitive	Outcomes related to performance on measures of intelligence, executive function, problem solving, information processing, reasoning, theory of mind, memory, creativity, or attention	15	22	<b>37</b>
Communication	Outcomes related to ability to express wants, needs, choices, feelings, or ideas	173	159	<b>332</b>
Joint attention	Outcomes related to behaviors needed for sharing interests and/or experiences	36	27	<b>63</b>
Mental health	Outcomes related to emotional well-being	1	16	<b>17</b>
Motor	Outcomes related to movement or motion, including both fine and gross motor skills, or related to sensory system/sensory functioning	17	16	<b>33</b>
Play	Outcomes related to the use of toys or leisure materials	73	50	<b>123</b>
Self-determination	Outcomes related to self-directed actions in setting and achieving goals or making decisions and problem-solving	0	2	<b>2</b>
School readiness	Outcomes related to task performance versus task content or curriculum area (e.g., on task behavior, engagement)	63	46	<b>109</b>
Social	Outcomes related to skills needed to interact with others	152	150	<b>302</b>
Vocational	Outcomes related to employment or employment preparation or relate to technical skills required for a specific job	11	20	<b>31</b>

## SELECTING EBPS

# When Selecting an EBP, Consider:

Child & Family Priorities & Characteristics

Clues found in the Outcome/Goal

EBP

Teacher/Team Characteristics

Other Resources Available

## SELECTING EBPS

# When Selecting an EBP, Consider:

Identify characteristics, clues, and resources:

### *Child & Family Characteristics*

- Student Strengths: \_\_\_\_\_
- Student Challenges: \_\_\_\_\_
- Has worked before (home/school): \_\_\_\_\_  
\_\_\_\_\_
- Has not worked before (home/school): \_\_\_\_\_  
\_\_\_\_\_

### *Teacher/Team Characteristics*

- Knowledge level: \_\_\_\_\_  
\_\_\_\_\_
- Successfully used EBPs: \_\_\_\_\_  
\_\_\_\_\_

### *Clues found in IEP Goal*

- Goal Domain: \_\_\_\_\_
- Potential EBPs (Use Domain Matrix): \_\_\_\_\_  
\_\_\_\_\_

Identify characteristics, clues, and resources (continued):

### *Other Resources*

- Current student supports: \_\_\_\_\_
- Available equipment: \_\_\_\_\_
- Team members: \_\_\_\_\_
- Additional learning experiences: \_\_\_\_\_  
\_\_\_\_\_



## PRACTICE ACTIVITY



**Matthew**  
*would like to interact more with peers during lunch bunch, currently he watches his classmates.*

- Review the goal
- Determine the outcome for Matthew

Table 3.5 Outcomes identified across review periods

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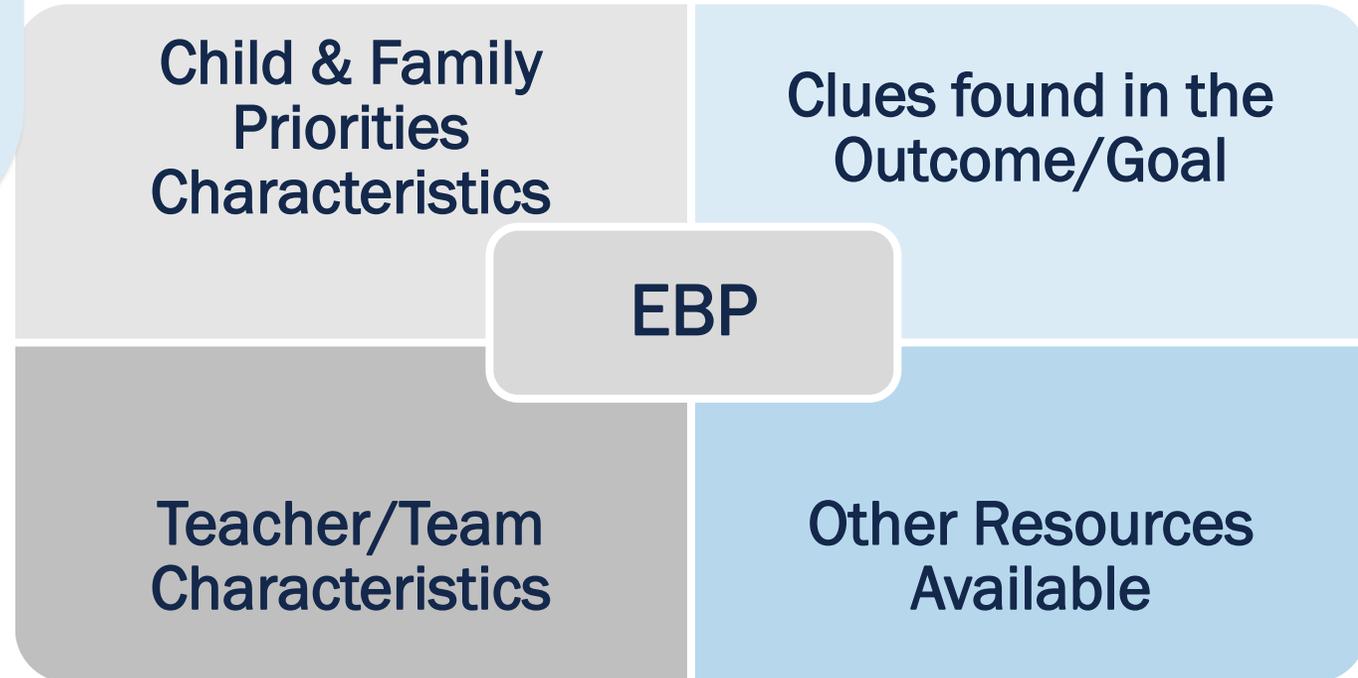
## PRACTICE ACTIVITY



**Matthew**

***would like to interact more with peers during lunch bunch, he currently watches his classmates.***

- More information is needed!





## PRACTICE ACTIVITY



### **Matthew**

***would like to interact more with peers during lunch bunch, he currently watches his classmates.***

#### **Child & Family Priorities & Characteristics:**

- 10 years old, student priority
- Served primarily in special education setting but attends specials with peers in general education setting
- Matthew and his family love sports (Go Heels!), he loves YouTube videos and comic books
- Matthew's neighbor is also in his grade and they go on bike rides together

#### **Clues found in the Outcome/Goal:**

- Social
- Communication

EBP

#### **Teacher/Team Characteristics:**

- Teacher has hosted lunch bunch for years
- Teacher and the paraprofessional have tried giving reminders and points for participating in a conversation without success
- Teacher and family are very busy with learning/work/etc.

#### **Other Resources Available:**

- Matthew receives speech services twice a week



## PRACTICE ACTIVITY

# What practices did you consider?



***Matthew***

***would like to interact more with peers during lunch bunch, he currently watches his classmates.***

## EBP

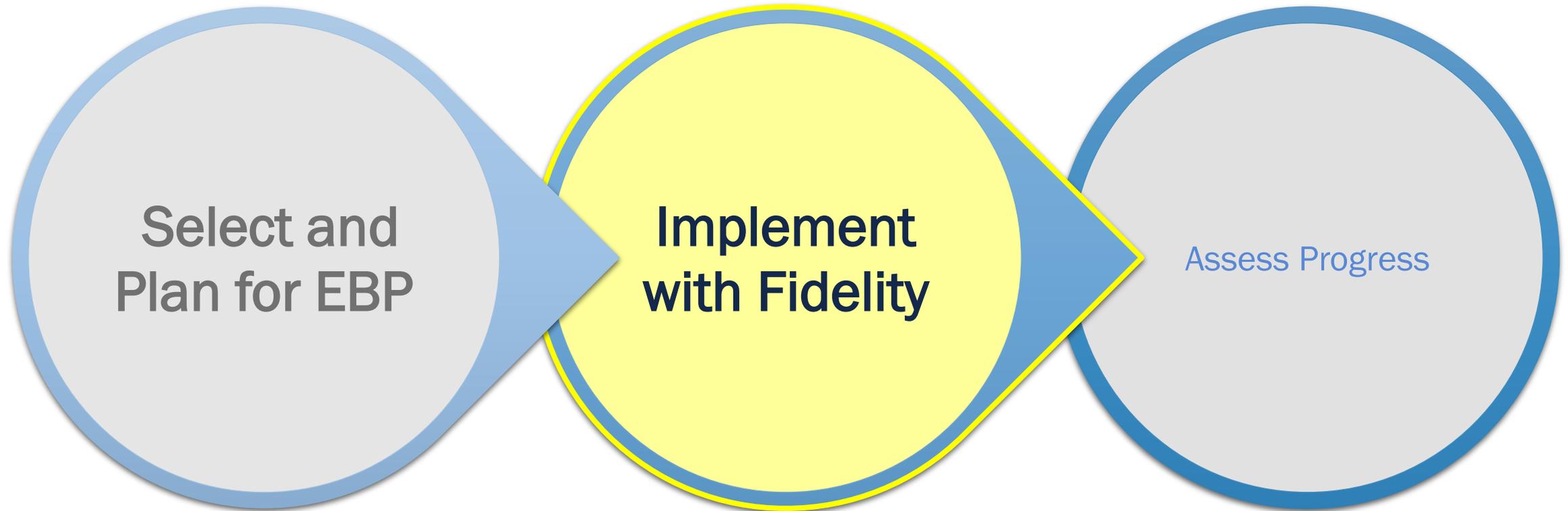
- Prompting- Teacher and para are trying this
- Reinforcement – Teacher & para are trying this
- Peer Based Instruction & Intervention- has a relationship with a peer/neighbor
- Social narratives- he likes comic books
- Video modeling – Matthew likes watching videos
- Other potential practices?





SELECTING EBPS

# The EBP Process





# Implementing Evidence-Based Practices

3

## IMPLEMENTING EBPS

# For All EBPs

1

### Planning

- Choose skill/behavior
- Collect baseline data
- Make specific decisions related to EBP

2

### Implementing

- Check your fidelity of implementation related to that EBP

3

### Monitoring

- Collect data on child and your implementation

## IMPLEMENTING EBPS

# AFIRM

- E-learning modules for EBPs
  - <http://afirm.fpg.unc.edu/>
- Target audience
  - Special educators
  - General education teachers
  - Related service personnel
  - Early interventionists
- Planning, Selecting, and Monitoring EBPs

AUTISM FOCUSED INTERVENTION MODULES & RESOURCES

The screenshot shows the AFIRM website interface. At the top left is the AFIRM logo (Autism Focused Intervention Resources and Modules) with a colorful circular graphic. To the right are 'Login' and 'Sign Up' links. Below the logo is a navigation menu with 'AFIRM Modules', 'Learn with AFIRM', and 'Selecting EBPs'. The main content area features a login/sign-up form on the left with fields for 'Username or e-mail' and 'Password', a 'Request new password' link, and 'Log in' and 'Sign Up' buttons. To the right of the form is a promotional message: 'Access free AFIRM online modules and resources for each of the 27 evidence-based practices identified by the National Professional Development Center on Autism Spectrum Disorder (ASD)'. Below this is a 'Sign Up' button and the text 'It's free and only takes a few minutes'. At the bottom of the page is a blue banner with three columns of promotional text and buttons: 'Earn a free professional development certificate for completing each EBP module' with a 'View modules' button; 'Learn with AFIRM through engaging case examples, videos, and interactive assessments' with a 'Find out more' button; and 'Download resources and materials that support your use of EBPs with children and youth with ASD' with a 'View Resources' button.

[Contact Us](#)

 [Follow us on Facebook](#)

Autism Focused Intervention Resources & Modules (AFIRM) is an extension of the National Professional Development Center (NPDC) on ASD. Visit the [NPDC website](#) for more information.



# AFIRM Structure

- 4 lessons
  - Basics of EBP
  - Plan for EBP
  - Use EBP
  - Monitor EBP
- Key components of EBPs
- Step-by-step process for applying practice

The screenshot displays the AFIRM website interface. At the top left is the AFIRM logo (Autism Focused Intervention Resources and Modules). At the top right, there is a user account section with 'My Account | Logout', 'You are logged in.', and a link to 'Need help? Visit the FAQs section'. Below the header are navigation tabs: 'AFIRM Modules', 'Learn with AFIRM', 'Selecting EBPs', and 'Resources'. A sidebar on the left lists the module structure: 'Module: PMII', 'A Case for PMII', 'Lesson 1: Basics of PMII' (highlighted), 'Lesson 2: Plan for PMII', 'Lesson 3: Use PMII', 'Lesson 4: Monitor PMII', 'PMII Resources and Tools', and 'Assessments and Evaluations'. The main content area shows 'Lesson 1: Basics of PMII' with a '< BACK' button and a 'NEXT >' button. The lesson content includes a blue box stating 'After this lesson, you will be able to:' followed by two bullet points: 'Describe five types of PMII, with what ages they can be used, and the skills that can be addressed with each.' and 'Identify how PMII can help both learners with ASD and their peers in social interactions.' Below this is a 'Time to complete: approximately 20 minutes.' A green box titled 'A Case for the Practice: Why should you apply this practice with learners with ASD?' is followed by a diagram of four lessons: Lesson 1 (Basics), Lesson 2 (Planning for the Practice), Lesson 3 (Using the Practice), and Lesson 4 (Monitoring Progress). Each lesson box lists key components. At the bottom, a grey box titled 'EBP Resources and Tools: Downloadable documents that support your understanding and application of the practice.' is shown. Navigation buttons '< BACK' and 'NEXT >' are at the bottom of the page.

## IMPLEMENTING EBPS

# AFIRM Supplemental Materials

- Implementation checklist
- Step-by-step practice guide
- Parent's guide
- Tip sheet for professionals
- Data sheets
- Evidence-base

## Prompting (PP) ---Implementation Checklist---

*Before you start:*

*Have you...*

- Identified the behavior?
- Collected baseline data through direct observation?
- Established a goal or outcome that clearly states when the behavior will occur, what the target skill is, and how the team will know when the skill is mastered.

*If the answer to any of these is "no", refer to the "Selecting EBPs" section on the website.*

	Observation Date	1	2	3	4
	Observer's Initials				
<b>Step 1: Planning</b>					
1.1	Identify the target skill/behavior as either a discrete or chained task				
1.2	Select prompting procedure to use				
1.3	Identify target stimulus				
1.4	Select cues or task directions				
1.5	Select reinforcers				
1.6	Follow unique planning steps for selected prompting procedure				
<b>Least-to-Most Prompting</b>					
<input type="checkbox"/>	Select the number of levels in the hierarchy				
<input type="checkbox"/>	Select the types of prompts to be used				
<input type="checkbox"/>	Sequence prompts from least-to-most assistance				
<input type="checkbox"/>	Determine the length of the response interval				
<input type="checkbox"/>	Identify activities and times for using least-to-most prompting				
<b>Graduated Guidance</b>					
<input type="checkbox"/>	Identify the controlling prompt				
<input type="checkbox"/>	Determine the length of the response interval				
<input type="checkbox"/>	Specify prompt fading procedures				
<input type="checkbox"/>	Identify activities and times for using graduated guidance				
<b>Simultaneous Prompting</b>					
<input type="checkbox"/>	Identify the controlling prompt				
<input type="checkbox"/>	Determine the length of the response interval				
<input type="checkbox"/>	Identify activities and times for using simultaneous prompting				
<b>Step 2: Using</b>					
<b>Least-to-Most Prompting:</b>					
<input type="checkbox"/>	Establish learner attention, deliver stimulus, and provide the cue				
<input type="checkbox"/>	Wait for learner to respond				
<input type="checkbox"/>	Respond to learner's attempts				
<b>Graduated Guidance:</b>					
<input type="checkbox"/>	Establish learner attention, deliver stimulus, and provide the cue				
<input type="checkbox"/>	Wait for learner to respond				
<input type="checkbox"/>	Respond to learner's attempts				
<b>Simultaneous Prompting:</b>					
<input type="checkbox"/>	Establish learner attention, deliver stimulus, and provide the cue				
<input type="checkbox"/>	Conduct instructional sessions by:				
	o Delivering the controlling prompt				
	o Responding to learner's attempts				
<input type="checkbox"/>	Conduct probe sessions by:				
	o Providing no prompt				
	o Responding to learner's attempts				
<b>Step 3: Monitoring</b>					
3.1	Collect data on target behaviors				
3.2	Determine next steps based on learner progress				

## IMPLEMENTING EBPS

# AFIRM for Paraprofessionals

Menu Transcript

- ▼ Introduction
  - Welcome
  - Introduction
  - Positive Reinforcement
  - Plan, Use, and Monitor Reinforce...
- ▼ Jack
  - Plan
  - Use
  - Monitor
- ▼ Lucy
  - Plan
  - Use
  - Monitor
- Examples
- ▼ Michael
  - Plan

Module 1: Reinforcement

Resources



The image shows a woman with blonde hair, wearing a light-colored cardigan over a teal top, smiling warmly as she interacts with two young children. On the left, a young girl with dark, curly hair is looking towards the woman. On the right, a young boy with light brown, curly hair is looking towards the woman. They are in a classroom or playroom setting with shelves of toys in the background.

## IMPLEMENTING EBPS

# Guided Learning

Module 1: Reinforcement Resources

### Rule #1

Leon receives reinforcement for completing his reading assignment in his third grade general education setting. Leon's reinforcement is to play with Legos for five minutes after he completes the assignment. Leon's class is getting ready to go to lunch. What would you do?

- Let him play with the Legos for five minutes.
- Give Leon five minutes at the end of the day to play with his Legos.
- Skip the reinforcement for today. You need Leon to go to lunch so you can work with your next student.

SUBMIT

# Observe and Practice Fidelity

Module 1: Reinforcement Resources

Click the boxes to indicate the use steps completed.

<b>USE</b>	
1. Have needed materials ready (reinforcers)	<input checked="" type="checkbox"/>
2. Give direction to student to use target skill/behavior (if needed)	<input type="checkbox"/>
3. Help student use target behavior/skill (if needed)	<input type="checkbox"/>
4. Give student the reinforcer soon after doing the target behavior/skill	<input type="checkbox"/>
5. Pair reinforcer with a description of the behavior ("may not always be appropriate")	<input type="checkbox"/>
6. Follow the reinforcement schedule	<input type="checkbox"/>
7. Vary the reinforcers used with student	<input type="checkbox"/>
8. Use reinforcers consistently across activities and/or settings	<input type="checkbox"/>

SUBMIT

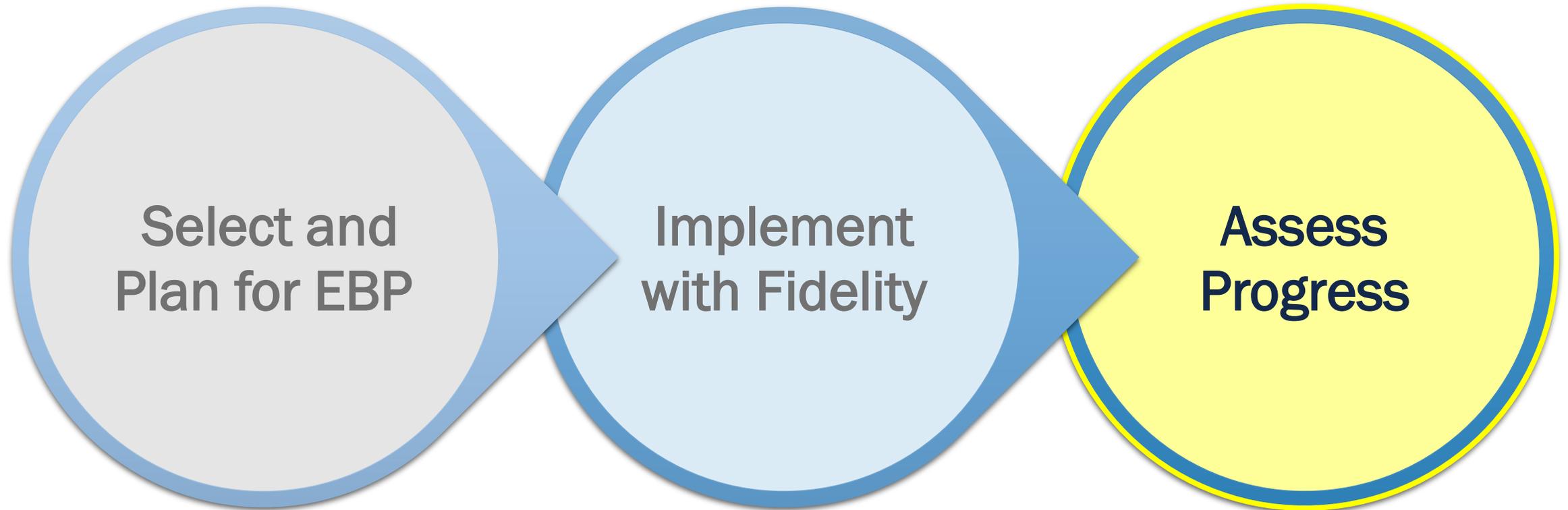
## IMPLEMENTING EBPS

# Fidelity Checklists and Home Companion Guide

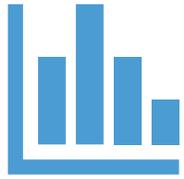
 <span style="float: right;">MODULE ONE REINFORCEMENT</span>																			
<b>REINFORCEMENT CHECKLIST</b>   Use the Reinforcement Steps in this checklist and gather information from the teacher before using the practice.																			
<b>General Planning</b>																			
WHO _____	<table border="1"> <tr> <td> <b>PLAN</b></td> <td style="text-align: center;">✓</td> </tr> <tr> <td>1. Know reinforcers to use with student</td> <td></td> </tr> <tr> <td>2. Know the reinforcement schedule</td> <td></td> </tr> <tr> <td>3. Know what data to collect</td> <td></td> </tr> </table>	<b>PLAN</b>	✓	1. Know reinforcers to use with student		2. Know the reinforcement schedule		3. Know what data to collect											
<b>PLAN</b>	✓																		
1. Know reinforcers to use with student																			
2. Know the reinforcement schedule																			
3. Know what data to collect																			
WHEN DATE / / TIME																			
WHERE																			
WHAT (Target Skill)																			
HOW TO USE																			
HOW TO MEASURE																			
	<table border="1"> <tr> <td> <b>USE</b></td> <td style="text-align: center;">✓</td> </tr> <tr> <td>1. Have needed materials ready (reinforcers)</td> <td></td> </tr> <tr> <td>2. Give direction to student to use target skill/behavior (if needed)</td> <td></td> </tr> <tr> <td>3. Help student use target behavior/skill (if needed)</td> <td></td> </tr> <tr> <td>4. Give student the reinforcer soon after doing the target behavior/skill</td> <td></td> </tr> <tr> <td>5. Pair reinforcer with a description of the behavior ("may not always be appropriate")</td> <td></td> </tr> <tr> <td>6. Follow the reinforcement schedule</td> <td></td> </tr> <tr> <td>7. Vary the reinforcers used with student</td> <td></td> </tr> <tr> <td>8. Use reinforcers consistently across activities and/or settings</td> <td></td> </tr> </table>	<b>USE</b>	✓	1. Have needed materials ready (reinforcers)		2. Give direction to student to use target skill/behavior (if needed)		3. Help student use target behavior/skill (if needed)		4. Give student the reinforcer soon after doing the target behavior/skill		5. Pair reinforcer with a description of the behavior ("may not always be appropriate")		6. Follow the reinforcement schedule		7. Vary the reinforcers used with student		8. Use reinforcers consistently across activities and/or settings	
<b>USE</b>	✓																		
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7. Vary the reinforcers used with student																			
8. Use reinforcers consistently across activities and/or settings																			
	<table border="1"> <tr> <td> <b>MONITOR</b></td> <td style="text-align: center;">✓</td> </tr> <tr> <td>1. Take data on target behavior/ skill</td> <td></td> </tr> <tr> <td>2. Check in with teacher about next steps at least weekly</td> <td></td> </tr> </table>	<b>MONITOR</b>	✓	1. Take data on target behavior/ skill		2. Check in with teacher about next steps at least weekly													
<b>MONITOR</b>	✓																		
1. Take data on target behavior/ skill																			
2. Check in with teacher about next steps at least weekly																			

 <span style="float: right;">MODULE ONE REINFORCEMENT</span>	
<b>COMPANION GUIDE FOR FAMILIES</b>   Use the Companion Guide for Families to assist with using reinforcement in your home.	
<p>The AFIRM for Paras modules were developed for paraprofessionals at elementary schools. However, the practices outlined in the modules can be helpful for families to use at home and can be used with a variety of ages. This companion guide is designed to offer a brief description of steps for reinforcement and provides some ideas of how you might use it in your home.</p>	
<h3>What is Reinforcement?</h3>	
<p>Reinforcement is used to increase a desired behavior or skill by giving a child a reward after the desired behavior or skill is used.</p>	
<p><b>Positive reinforcement</b> When rewards are used to increase a desired skill or behavior.</p>	
<p><b>Token economy</b> A type of positive reinforcement system in which a child receives a token as a reward each time they use the target skill or behavior. After earning a certain number of tokens, the child earns a reward that they really like (e.g. time on iPad, a favorite show, time with Legos). Tokens can be anything – stickers, check marks, cards, blocks.</p>	
<h3>What are the steps for using reinforcement?</h3>	
<p><b>1. Identify the behavior or task</b> Choose the behavior that you will focus on while using reinforcement with your child. Think about what you want the child to do, how you would like them to demonstrate the behavior, and when this behavior or task would be performed.</p>	

# The EBP Process



# Gather and Analyze Progress



## Student Progress

Goal based data collection



## Implementer Progress

Implementation Checklists



## Revise Plan as Necessary

## IMPLEMENTING EBPS

# Example Data Sheets



Selecting an EBP

---Baseline Frequency Data Collection---

Learner's Name: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Observer(s): \_\_\_\_\_

Target Behavior(s): \_\_\_\_\_

**Frequency Data:**  
Use frequency data to record how many times a learner engages in a particular behavior or skill.

Date	Target Behavior/Skill	Tally	Total

**Anecdotal Notes:**

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

For more information, visit:  
[www.afirm.fpg.unc.edu](http://www.afirm.fpg.unc.edu)

Selecting an EBP
National Professional Development Center on ASD
2017
1



Modeling

---Time Sampling Data Collection---

Learner's Name: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Observer(s): \_\_\_\_\_

Target Behavior(s): \_\_\_\_\_

**Time Sampling:**  
Use time sampling to monitor the frequency of the target behavior by recording if the learner is engaging in the behavior before, during, or after (reinforcement).

Date	Time				Total

**Anecdotal Notes:**

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

For more information visit:  
[www.afirm.fpg.unc.edu](http://www.afirm.fpg.unc.edu)

Modeling
National Professional Development Center on ASD
2015
1

# Example Implementation Checklists

Self-management (SM) ---Implementation Checklist---						
	Observation	1	2	3	4	
	Date					
	Observer's Initials					
<p><i>To find out more information about...</i></p> <ul style="list-style-type: none"> <li>Establishing a goal or outcome that clearly states when the behavior will occur, what the target skill is, and how the team will know when the skill is mastered.</li> <li>Identifying evidence-based practices</li> </ul> <p>Refer to the "Selecting EBPs" section on the website: <a href="http://afirm.fpg.unc.edu">afirm.fpg.unc.edu</a></p>	<b>Step 1: Planning</b>					
	1.1	Conduct a functional behavior assessment (if applicable)				
	1.2	Identify reinforcers				
	1.3	Develop a data collection system				
	1.4	Determine initial criterion				
	1.5	Select self-monitoring recording and cueing devices				
	1.6	Teach learner to demonstrate correct behavior				
	1.7	Teach learner to use self-recording system				
	<b>Step 2: Using</b>					
	2.1	Provide learner with cue to begin using self-management system				
	2.2	Teach learner how to self-record behavior in the target setting				
	2.3	Teach learner to gain access to reinforcement when criterion is reached				
	<b>Step 3: Monitoring</b>					
	3.1	Conduct intermittent checks to determine if learner accurately self-records				
	3.2	Increase criterion, session length, and interval length				
	3.3	Determine next steps based on learner progress.				

AFIRM Autism Focused Intervention Resources and Modules

Self-management National Professional Development Center on ASD 2016 1

Reinforcement (R+) ---Implementation Checklist---						
	Observation	1	2	3	4	
	Date					
	Observer's Initials					
<p><i>Before you start:</i></p> <p><i>Have you...</i></p> <ul style="list-style-type: none"> <li>Identified the behavior?</li> <li>Collected baseline data through direct observation?</li> <li>Established a goal or outcome that clearly states when the behavior will occur, what the target skill is, and how the team will know when the skill is mastered.</li> </ul> <p><i>If the answer to any of these is "no", refer to the "Selecting EBPs" section on the website.</i></p>	<b>Step 1: Planning</b>					
	1.1	Collect data on target skill or behavior				
	1.2	Establish performance criteria for program goals				
	1.3	Identify reinforcers				
	1.4	Prepare supporting materials:				
		<input type="checkbox"/> Positive: create a reinforcer menu and schedule				
		<input type="checkbox"/> Token economy: establish token economy system				
		<input type="checkbox"/> Negative: prepare pictorial, written, or verbal instructions				
	<b>Step 2: Using</b>					
		- <b>Positive Reinforcement:</b>				
		<input type="checkbox"/> Deliver reinforcement each time learner uses target skill/behavior				
		<input type="checkbox"/> Prevent satiation by varying reinforcers				
		<input type="checkbox"/> Thin reinforcers and use reinforcers consistently across settings				
		- <b>Token Economy:</b>				
		<input type="checkbox"/> Describe to learners components of token economy program				
		<input type="checkbox"/> Provide a token to learner each time skill/behavior is displayed				
		<input type="checkbox"/> Learners select reinforcement from the reinforcer menu				
		<input type="checkbox"/> Thin tokens and use tokens consistently across settings				
		- <b>Negative Reinforcement:</b>				
		<input type="checkbox"/> Cue learner to use target skill/behavior				
	<input type="checkbox"/> Remove negative reinforcer when target skill or behavior is used					
	<input type="checkbox"/> Transition to positive reinforcement					
<b>Step 3: Monitoring</b>						
3.1	Collect data on target behaviors					
3.2	Adjust reinforcement based on performance criteria					
3.3	Determine next steps based on learner progress					

AFIRM Autism Focused Intervention Resources and Modules

Reinforcement National Professional Development Center on ASD 2015 1

# Learning Objectives



1

Identify evidence-based practices (EBPs) for children & youth with autism

2

Describe the process for selecting EBPs to address meaningful outcomes for children & youth with autism

3

Know where to access internet supports for learning how to plan for, use, and monitor EBPs for children with autism

# Thank you



- Kara Hume, Ph.D.: [kara.hume@unc.edu](mailto:kara.hume@unc.edu)
- The National Clearinghouse on Autism Evidence & Practice: <https://ncaep.fpg.unc.edu/>
- Autism Focused Intervention Resources & Modules: <https://afirm.fpg.unc.edu/>



# **Additional Resources**

4

## ADDITIONAL RESOURCES

# Introduction to ASD

Module BUT, really an online, interactive learning experience

- Serious gaming or gamification
- Learning through ...
  - Doing
  - Answering
  - Watching
  - Practicing

The screenshot shows an interactive learning interface. On the left is a navigation menu with categories like 'Introduction', 'Autism Fundamentals', 'Social Communication', and 'Restrictive or Repetitive Behaviors'. The main content area displays a quiz question: 'Autism occurs in over 1% of the population.' Below the question is a photograph of a diverse group of children sitting around a table, working on a project. At the bottom of the question area are three buttons labeled 'FACT', 'OR', and 'MYTH'. A 'SUBMIT' button is located at the bottom center of the interface. The top right corner of the interface has a 'Resources' link.

## ADDITIONAL RESOURCES

# Introduction to ASD

- Online, interactive learning experience
- Content:
  - Background on ASD
  - Key ASD characteristics across 4 major areas
  - School-based considerations
- First Reaction/Reframe exercises

AFIRM FOR PARAPROFESSIONALS

First Reaction Exercise

- Autism Fundamentals
  - Autism Description
  - Autism Diagnosis
  - Autism Details
- Autism Characteristics
  - Social Communication: Social S...
    - Social Skills Menu
    - Foundational Social Skills
    - Understanding and Using No...
    - Conversational Skills
    - Connecting with Others
    - Reflection on Social Skills
  - Social Communication: Commu...
    - Communication & Language ...
    - Understanding Communication
    - Range of Verbal and Express...

1 Autism Overview

Autism Description

Social communication disorder

Autism

2 Autism Characteristics

Social Communication: Social Skills

Foundational social skills

You are greeting students in the morning with hellos and high-fives, and Caden doesn't respond.

Use the buttons below to see the reaction change in this situation.

## ADDITIONAL RESOURCES

# Introduction to ASD

**2** Autism Characteristics

**Social Communication: Social Skills**

Foundational social skills

You are greeting students in the morning with hellos and high-fives, and Caden doesn't respond.

He isn't paying attention to me.



Use the buttons below to see the reaction change in this situation.

This illustration shows a teacher with dark skin, glasses, and a blue blazer over a light blue skirt, holding a red book. She is standing in a hallway with large windows. Three children are lined up in front of her. The first child is a boy in a green shirt and brown shorts. The second is a girl in a purple top and dark skirt. The third is a boy in a grey shirt and blue pants, who is waving. The teacher has a speech bubble that says "He isn't paying attention to me." A text box above her says "You are greeting students in the morning with hellos and high-fives, and Caden doesn't respond."

**2** Autism Characteristics

**Social Communication: Social Skills**

Foundational social skills

You are greeting students in the morning with hellos and high-fives, and Caden doesn't respond.

He doesn't understand the back and forth nature of interactions.



Use the buttons below to see the reaction change in this situation.

This illustration shows the same teacher as in the first image, but now only one student, a boy in a green shirt and brown shorts, is standing in front of her. She is reaching out her hand towards him. Her speech bubble says "He doesn't understand the back and forth nature of interactions." A text box above her says "You are greeting students in the morning with hellos and high-fives, and Caden doesn't respond."

# Acknowledgements



- The AFIRM (Autism Focused Intervention Resources and Modules) modules at UNC Frank Porter Graham Child Development Institute was a subcontract through the IRIS Center at Peabody College, Vanderbilt University. The IRIS Center is funded through the U.S. Department of Education, Office of Special Education Programs Grant #H325E12002.
- The TESELA (The Efficacy Study for Elementary Learners with Autism Spectrum Disorder) at UNC Frank Porter Graham Child Development Institute is funded through the U.S. Department of Education, Institute of Education Sciences Grant #R324A150047.
- The AFIRM for Paraprofessionals modules (Supporting Paraprofessionals' Use of Evidence-based Practices for Students with ASD) at UNC Frank Porter Graham Child Development Institute is funded through the U.S. Department of Education, Institute of Education Sciences Grant #R324A170028.
- Thank you to everyone who has dedicated their work to advancing knowledge to transform learners with ASD lives: AFIRM Team, TESELA Team, AFIRM for Paraprofessionals Team, NCAEP Team, **Sam Odom, Jessica Steinbrenner, Ann Sam, Victoria Waters, Melissa Savage, Kristi Morin, Nancy McIntyre, Sallie Nowell, Susan Szendrey, Brianne Tomaszewski, and Ann Cox**



THE UNIVERSITY  
*of* NORTH CAROLINA  
*at* CHAPEL HILL