EVIDENCE BASED STRATEGIES TO TEACH PLAY SKILLS TO CHILDREN WITH AUTISM SPECTRUM DISORDER

PRESENTED BY:
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INTRODUCTION
• Cassie Borges, M.Ed., BCBA, is a behavior and education consultant at the UW Autism Center in Tacoma.

• Cassie graduated from the University of Washington in 2016 with a teaching certification and Masters in Education focusing on early childhood special education and Applied Behavior Analysis. During the program, she obtained her practicum and student teaching experiences at the Experimental Education Unit. Cassie became a Board Certified Behavior Analyst and licensed in the state of Washington in 2018.

• Cassie’s areas of interest include early intervention, community outreach, and teacher training with the goal of empowering families, faculty, school, and community under the umbrella of evidence-based practices and high quality life outcomes for the students.
AUTISM SPECTRUM DISORDER (ASD)

A. Persistent deficits in social communication and social interaction across multiple contexts:
   - Deficits in social-emotional reciprocity.
   - Deficits in nonverbal communicative behaviors used for social interaction
   - Deficits in developing, maintaining, and understanding relationships

B. Restricted, repetitive patterns of behavior, interests, or activities, as manifested by at least 2 of the following:
   - Stereotyped or repetitive motor movements, use of objects, or speech
   - Insistence on the sameness, inflexible adherence to routines or ritualized patterns of verbal or nonverbal behavior
   - Highly restricted, fixated interests that are abnormal in intensity or focus
   - Hyper or hypoactivity to sensor input or unusual interest in sensory aspects of the environment

C. Symptoms must be present in the early developmental period

D. Symptoms cause clinically significant impairment in social, occupational, or other important areas of current function

E. These disturbances are not better explained by intellectual disability or global developmental delay

AMAZING THINGS HAPPEN VIDEO

https://youtube.com/RBWRRVW-CRO
PLAY GIVES CHILDREN A CHANCE TO PRACTICE WHAT THEY ARE LEARNING - FRED ROGERS

WORK TOGETHER OR INDEPENDENTLY TO BREAK DOWN PLAY (TASK ANALYSIS)
HOW WOULD YOU BREAK DOWN THE PLAY TASK OF BUILDING A TOWER OUT OF LEGOS?
TWO PERSPECTIVES ON PLAY

BEHAVIORAL PERSPECTIVE
• What children do and how to change it productively (McConnell, 2002 as cited in Lifter, Mason, & Barton, 2011)
• Focus centers on describing delays in play, considering the use of play that make it functional, teaching play to children
• Emphasis placed on how play is used and what the child is supposed to do (Lifter, Mason, & Barton, 2011)

CONSTRUCTIVIST PERSPECTIVE
• Focuses on what children can do but also why; understanding the basis for the behavior through analysis of cognitive and developmental processes, developmental stages, and neurodevelopment (Lifter & Bloom, 1989, 1998; Vig, 2007 as cited in Lifter, Mason, & Barton, 2011)
• Emphasis is placed on what play is and what it reveals about the developing child (Lifter, Mason, & Barton, 2011)

WHAT IS PLAY?

PLAY IS THE EXPRESSION OF INTENTIONAL STATES—THE REPRESENTATIONS IN CONSCIOUSNESS CONSTRUCTED FROM WHAT CHILDREN KNOW ABOUT AND ARE LEARNING FROM ONGOING EVENTS—AND CONSISTS OF SPONTANEOUS, NATURALLY OCCURRING ACTIVITIES WITH OBJECTS THAT ENGAGE ATTENTION AND INTEREST. PLAY MAY OR MAY NOT INVOLVE CAREGIVERS OR PEERS, MAY OR MAY NOT INVOLVE A DISPLAY OF AFFECT, AND MAY OR MAY NOT INOLVE PARTNERS.
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5 CRITERIA ESSENTIAL TO DEFINING AND RECOGNIZING PLAY

Play ...
1. Is incompletely functional in the context in which it appears
2. Is spontaneous, pleasurable, rewarding or voluntary
3. Differs from other non-serious behaviors in form or timing
4. Is repeated but not in a stereotyped and unvarying manner
5. Is initiated in the absence of acute or chronic stress

(Burghardt, 2011 as cited in Lifter, Mason, & Barton, 2011)

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AUTISM AND PLAY: RESEARCH OVER THE LAST 25 YEARS

- Children with autism...
  A. Produce less symbolic behaviors
  B. Exhibit less variety in their play behaviors
  C. Exhibit less complex play behaviors
  D. Exhibit less variety and complexity in sequence of play behaviors than children with other disabilities or children without disabilities (Lifter, Mason, & Barton, 2011)

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PLAY IS IMPORTANT FOR THREE MAJOR REASONS...

1. Play increases the likelihood of placement and learning in natural, inclusive, less restrictive settings
2. Play is adaptable and can be used in multiple settings as a context for extending interventions practicing new skills, conducting authentic assessment, and to provide opportunities for social and communicative interactions with peers (McConnel, 2002 as cited in Lifter, Mason, & Barton, 2011)
3. Play has predictive value for communication and social skills (Charman et al., 2003 as cited in Lifer, Mason, & Barton, 2011)
1. PLACEMENT & ENGAGEMENT IN NATURAL SETTINGS

- Research supports the inclusion of children with special needs into high-quality preschools with typical peers (Strain, McGee, & Kohler, 2002 as cited in Lifter, Mason, & Barton, 2011).
- Play is a functional goal because it provides children with skills to access their environment and engage with their peers (Barton & Woolery, 2008 as cited in Lifter, Mason, & Barton, 2011).

2. PLAY AS A CONTEXT

- Young children learn more effectively and efficiently when instruction is contextually relevant and developmentally appropriate and capitalizes on child focus and interest (Sandall, Hemmeter, Smith, & McLean, 2005 as cited in Lifter, Mason, & Barton, 2011).
- Play provides a context for embedding evidence-based practices focused on developmentally appropriate goals, including antecedent-based interventions, peer-mediated social skills (Strain & Bovey, 2008 as cited in Lifter, Mason, & Barton, 2011), relaying teaching (Hemmeter & Feuer, 2008 as cited in Lifter, Mason, & Barton, 2011), incidental teaching (McGee, Morrier, & Daly, 1999 as cited in Lifter, Mason, & Barton, 2011), and naturalistic time delay (Wolery, 2001 as cited in Lifter, Mason, & Barton, 2011).
- Play provides multiple opportunities to practice newly acquired skills across settings, materials, and peers (Barton & Wolery, 2010 as cited in Lifter, Mason, & Barton, 2011).
- When peers are engaged with the same toys in the same way, they are more likely to talk and interact with each other (Lifter, Mason, & Barton, 2011).

3. PREDICTIVE VALUE OF PLAY

- For children with autism, the number of different functional play behaviors predicts gains in expressive language (Sigman & Ruskin, 1999 as cited in Lifter, Mason, & Barton, 2011).
- The predictive value of play depends on its correlation to developments in other domains and necessitates a clear specification of what is being described and measured in play (Lifter, Mason, & Barton, 2011).
TEACHING PLAY:

- Research indicates that intentional, systematic interventions are necessary to increase play skills in young children with disabilities (Lifter, Ellis, Cannon, & Anderson, 2005 as cited in Lifter, Mason, & Barton, 2011)
- Focus on developmentally appropriate goals, child-focused play behaviors, individualized instruction, and attention to corollary behaviors (Kasari et al., 2006 as cited in Lifter, Mason, & Barton, 2011)
- When teaching play to children with ASD, teachers must accommodate children's unique interests, developmental levels, and history of successful learning experiences (Carrero, Lewis, Zolkoski, & Lusk, 2014)

RECIPROCAL Imitation Training (RIT)

A Naturalistic Developmental Behavioral Intervention (NDBI; Schreibman et al., 2015 as cited by Penney & Schwartz, 2018) that teaches generalization and spontaneous imitation to young children with autism through the use of applied behavior analysis (Cardon & Wilcox, 2011; Ingersoll, 2011; Ingersoll & Lalonde, 2010; Ingersoll & Schreibman, 2006 as cited by Penney and Schwartz, 2018)
WHY TEACH IMITATION?

- Imitation is a pivotal skill in early development that helps children learn new skills and engage in social interactions with others.
- Research suggests that children with ASD can have difficulty imitating in unstructured settings for social purposes, and interventions that teach spontaneous imitation skills within natural interactions may be effective for promoting flexible, social imitation and other social–communication skills.
- RIT can be implemented in a variety of play settings as well as during daily routines and can be very effective when implemented by parents.

*Note the RIT portion of the presentation is taken from a training by Brooke Ingersoll, PhD., BCBA, Michigan State University.

WHAT RIT LOOKS LIKE

COMPONENTS OF RIT

- Select materials
- Imitate your child
- Describe your play
- Teach object imitation
- Expand your child’s play skills
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**SELECT MATERIALS**

- Recommended toys:
  - Nesting toys
  - Stacking toys
  - Blocks
  - Balls
  - Slinkies
  - Musical toys
  - Dolls/stuffed animals
  - Miniatures
  - Pretend food
  - Vehicles
  - Playdoh
  - Arts & crafts

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**IMITATE YOUR CHILD**

- Imitating most of your child’s gestures, vocalizations, and actions with toys will promote shared attention and social responsiveness as well as increase the number of different play ideas.

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- **Be face to face**
  - In child’s line of sight for ease of eye contact and ability to see what you are doing
  - If your child likes to move, move with them

- **Imitate child’s play with toys**
  - Don’t be frustrated if your child chooses to play with toys or other objects in an unusual way

- **Imitate child’s gestures and body movements**
  - If your child is wandering around the room follow the path while trying to remain face to face

- **Imitate child’s vocalizations**
  - All appropriate vocalizations for preverbal children; only language appropriate to the play for verbal children
THINGS TO KEEP IN MIND

• Be animated
  - Expand your imitation of your child’s gestures, facial expressions, and vocal quality
• Only imitate appropriate behavior
  - Decide which behaviors to imitate
    - DO imitate behaviors you want to see more
    - DO NOT imitate dangerous or aggressive behaviors
• Control the situation
  - Be consistent with rules and consequences
    - DO NOT allow behaviors that destroy property or harm the child or others
      - If child engages in this behavior make it clear it is not okay; remove the toy or object causing harm
• Do
  - imitate behaviors you want to see more
• Do not
  - imitate dangerous or aggressive behaviors

DESCRIBE YOUR PLAY

DESCRIBE WHAT YOU AND YOUR CHILD ARE DOING HIGHLIGHTING THE FACT YOU ARE DOING IT TOGETHER.

THIS SHOULD LOOK LIKE A RUNNING COMMENTARY; GIVING YOUR CHILD THE OPPORTUNITY TO RESPOND.

STRATEGIES TO HELP MAKING DESCRIBING YOUR PLAY MOST EFFECTIVE

- Simplify your language: Use simple language: single words or 2-3 word phrases
- Speak slowly: Slow the rate of speech
- Stress important words
- Be repetitive: Use the same language over and over
- Expand your child’s language: Inse from simple language to more complex

Photo from freepik.com
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**TEACH OBJECT IMITATION**

Begin going back and forth between imitating your child and providing opportunities for your child to imitate you.

You will be doing most of the imitating, your child will most likely only imitate every one to two minutes.

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**STRATEGIES TO MAKE TEACHING IMITATION MOST EFFECTIVE**

- **Model actions with the same toy**
  - For an average of every minute, model an action with the same toy your child is engaged with.
  - Make sure child is attending.

- Use a verbal label with the actions:
  - To increase spontaneity do not tell your child what he or she should do, use verbal labels to describe what you are doing.
  - Verbal labels are short, at or just above the child’s language level, stated clearly and stressed, and describe the action without giving a demand.

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**STRATEGIES CONTINUED…**

- **Model actions your child is likely to imitate**
  - This includes actions the child already performs on their own as well as actions just above their developmental level.

- For stages of play see table.

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STRATEGIES CONTINUED…

- Model the action up to three times and then prompt.
  - Give child several opportunities to initiate spontaneously.
  - Model with a verbal label and wait 10 seconds, do this three times then verbal prompt “you do it”.
  - Less no more prompting.

- Praise your child for imitating.
  - Immediately as the child imitates you, praise them with verbal praise and physical affection if it fits what they enjoy.
  - The praise should be more intense for independent imitation than for guided or prompted imitation.
  - Praise any attempt to initiate.
  - Take a break.

<table>
<thead>
<tr>
<th>Prompt Procedure</th>
<th>Description</th>
<th>When to Use It</th>
<th>Common Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Praise your child for imitating</td>
<td>Immediately as the child imitates you</td>
<td>Verbal praise + physical affection</td>
<td></td>
</tr>
<tr>
<td>2. Model the action up to three times and then prompt</td>
<td>Model with a verbal label and wait 10 seconds, do this three times then verbal prompt “you do it”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Praise your child for independent imitation</td>
<td>Praise any attempt to initiate. Take a break.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Carrero, Lewis, Zolkoski, & Lusk, 2014
Once able to imitate familiar actions consistently with toys they already play with, begin to focus on new actions just above the child's developmental play level.

### Ways to Expand Play
- Increase variety of play schemes with favorite toys.
- Keep the play in the same stage of play; increase the variety.
- Encourage play with new toys.
- Incorporate new objects into play with their favorite toys.
- Expand number of play sequences.
- Use sequences familiar to the child.

### Expanding Play Continued...
- Increase play complexity.
- Teach behaviors that are just above their current level of development.

<table>
<thead>
<tr>
<th>Child's Current Play Level</th>
<th>More Complex Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiential (sensory, motor, language)</td>
<td>Cause &amp; effect</td>
</tr>
<tr>
<td>Casual &amp; Effort</td>
<td>Combining objects</td>
</tr>
<tr>
<td>Combining objects</td>
<td>Functional play</td>
</tr>
<tr>
<td>Functional play</td>
<td>Simple pretend play</td>
</tr>
<tr>
<td>Simple pretend play</td>
<td>Complex &amp; multi-step pretend play</td>
</tr>
</tbody>
</table>

Photo from rawpixel.com
EXPANDING PLAY CONTINUED...

- Model actions with different toys
- Once the child is consistently demonstrating a range of actions, familiar and novel, increase their ability to imitate with new toys
- Have materials ready
- Start with highly motivating of familiar actions

Play ideas
- Identify actions that can be done with the toy or other toys or objects that can be brought into play
- The type of play you model should be based on the child’s ability

TEACH GESTURE IMITATION
ONCE ABLE TO CONSISTENTLY IMITATE ACTIONS WITH OBJECTS (50% OF ACTIONS MODELED) BEGIN TO TEACH GESTURE IMITATION.

GESTURE IDEAS
PIVOTAL RESPONSE TRAINING (PRT)

Based on principals of ABA, PRT is a method of loosely structured, child-directed instruction that uses the student's interests to teach pivotal behaviors that will affect a wide range of skills (Carrero, et al., 2014).

The PRT portion of the presentation is based on the National Professional Development Center on ASD Brief: PRT by Vismara & Bogin (2009).

FOUR PIVOTAL BEHAVIORS TARGETED

- Motivation
- Responding to multiple cues
- Self management
- Self initiations
1. MOTIVATION

Vary Tasks & Responses: Maintain interest and engagement
Using Student Choice: Child preferences, arrange the environment, offer whole class and individual choice making opportunities

Gain the Learner's Attention: Use brief & clear instructions

EXAMPLES OF BEHAVIOR THAT MAY INDICATE A NEED FOR A TASK VARIATION

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Examples of Behavior That May Indicate a Need for a Task Variation</th>
</tr>
</thead>
<tbody>
<tr>
<td>在</td>
<td>各</td>
</tr>
</tbody>
</table>
Motivation Continued...

- Use Natural Reinforcers
  - Reinforce Response Attempts: Reinforce, immediately, attempts that are goal directed.
  - Intersperse New & Mastered Tasks: Provide a mixture of known tasks with those being learned and retest the skills regularly.

Responding to Multiple Cues

- Vary Stimuli and Increase Cues:
  - Identify a variety of directions that are associated with the target skills and can be used during teaching/learning activities.
  - Provide at least two directions to ensure the learner can use target skills in different contexts.
  - Increase the number of directions with a particular object, material, or toy for the learner to respond to a variety of stimuli.

- Schedule the Reinforcement:
  - Identify several reinforcers that can be used for motivation.
  - At the grade level, schedule reinforcement for every correct attempt to the target.
  - Gradually, reduce the frequency of reinforcement after the learner consistently meets the criteria.
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SELF INITIATIONS: USING PEER-MEDIATED STRATEGIES

- Select peers who are a good match and motivated to participate
- Teach peers to:
  - Gain attention: Say “hi”
  - Provide choices: “What do you want to play with?”
  - Preference: “You like the blocks so maybe we can build a tower for the people with blocks.”
  - Varied models: Have the peer decide what they would like to share with their friend.
  - Verbal reinforcement: “Like the tower you built”
- Encourage conversation: “Tell me what you are doing.”
- As questions: “What did you do over the weekend?”
- Take turns during play
- Describe what they are doing: “It’s fun playing with trucks!”
- Describe objects: “This ball is really shiny.”

SELF INITIATIONS: USING LEARNER-INITIATED STRATEGIES

- Teach Social Initiations: ways to initiate, how to organize play, how to take turns choosing activity, how to be persistent with initiation
- Teach Question Asking; “What’s that?” beginning with favorite items in an opaque bag
- Teach Question Asking; “What happened” using pop up books
- Teach Language, Communication, and Social Skills Using Naturalistic Techniques: imitate actions during interactions, play, and other activities, provide item when it is asked for, provide a task demand and wait for response, place preferred items out of reach

MORE ABOUT PRT: 
https://www.youtube.com/channel/UCuRIOZUFii5vbphkb8R_tUg/featured
LYNN KOEGEL TEACES COMMUNICATION ON “SUPERNANNY”

HTTP://YOUTUBE.COM/COMMUNICATION
<table>
<thead>
<tr>
<th>Event</th>
<th>Number of times a behavior occurs (i.e., frequency)</th>
<th>Benefits</th>
<th>Challenges</th>
<th>Method</th>
<th>Graph</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latency</td>
<td>Approx. number of times a behavior occurs.</td>
<td>Benefits</td>
<td>Challenges</td>
<td>Method</td>
<td>Graph</td>
</tr>
<tr>
<td>Duration</td>
<td>How long it takes a behavior to occur.</td>
<td>Benefits</td>
<td>Challenges</td>
<td>Method</td>
<td>Graph</td>
</tr>
<tr>
<td>Sampling</td>
<td>Graph the frequency count for each occurrence &amp; calculate the daily or percentage of the period the behavior occurs regularly, record length of time the behavior last for at least several minutes.</td>
<td>Benefits</td>
<td>Challenges</td>
<td>Method</td>
<td>Graph</td>
</tr>
<tr>
<td>Interval</td>
<td>Number or percentage of intervals.</td>
<td>Benefits</td>
<td>Challenges</td>
<td>Method</td>
<td>Graph</td>
</tr>
<tr>
<td>Rate</td>
<td>Graph the rate calculation.</td>
<td>Benefits</td>
<td>Challenges</td>
<td>Method</td>
<td>Graph</td>
</tr>
<tr>
<td>Event</td>
<td>Number or percentage of intervals or percentage of the period the behavior occurs.</td>
<td>Benefits</td>
<td>Challenges</td>
<td>Method</td>
<td>Graph</td>
</tr>
</tbody>
</table>

**Sampling Interval**

- **Approx. number**: Number of times a behavior occurs.
- **How long it takes**: How long it takes for the behavior to occur.
- **Graph**: Graph the frequency count for each occurrence & calculate the daily or percentage of the period the behavior occurs regularly, record length of time the behavior last for at least several minutes.
- **Benefits**: Benefits of the method.
- **Challenges**: Challenges of the method.

**Examples**

- **Latency**: Approx. number of times a behavior occurs.
- **Duration**: How long it takes a behavior to occur.
- **Sampling**: Graph the frequency count for each occurrence & calculate the daily or percentage of the period the behavior occurs regularly, record length of time the behavior last for at least several minutes.
- **Interval**: Number or percentage of intervals.
- **Rate**: Graph the rate calculation.
- **Event**: Number or percentage of intervals or percentage of the period the behavior occurs.

**Method Description**

- **Exact measurement of a behavior**: Useful for low frequency behaviors that occur regularly, record length of time the behavior last for at least several minutes.
- **With clear beginning & ending**: Must have clear definition of behavior.
- **Easier to use while teaching**: Can only make limited conclusions about the effect of the independent variable on the dependent variable. Visual inspection of changes in level, trend, and variability both within and across conditions.
- **Hard to do when involved in instruction**: Can only draw limited conclusions because it is not actual count of behavior.
- **Data collection**: Note time the cue (e.g., prompt, request, and stimulus) is given and time student started the behavior.
- **Data**

**Special**

- **Juron**: Tim was out of his seat 60% of out of 10 intervals.
- **Ethan**: Ethan got out of his seat 5 times per minute.
- **Alex**: Alex put her hand in her mouth 6 times per minute.
- **Sam**: Sam made 6 social initiations during lunch.
- **Kim**: Kim completed 9 of the 10 math problems.
- **Ethan**: Ethan got out of his seat 5 times during center time.
- **Special Ed**: Steps for washing hands.
- **Evaluating**: A photo from appearson.com.
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WHAT DO YOU DO WITH THE DATA?

HTTPS://VKC.MC.VANDERBILTEDU/ASSETS/FILES/TIPSHEETSGRAPHINGDATATIPS.PDF

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IS IT YOUR INTERVENTION OR THE REINFORCER?

REINFORCERS ARE CONSTANTLY CHANGING

Photo from shutterstock.com

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NEURODIVERSITY MOVEMENT

"TO BE YOURSELF IN A WORLD THAT IS CONSTANTLY TRYING TO MAKE YOU SOMETHING ELSE IS THE GREATEST ACCOMPLISHMENT."

RALPH WALDO EMERSON

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