ABA for SLPs

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Disclosures

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Applied Behavior Analysis

“The process of systematically applying interventions based upon the principles of learning theory to improve socially significant behaviors to a meaningful degree and to demonstrate that the interventions employed are responsible for the improvement in behavior.”

(Baer, Wolf and Risley, 1968; Suber-Azaroff & Mayer, 1991)

Key Concepts of ABA

• Behavior is observable
• Behavior is measurable
• Behavior is related to the environment
  o Things that happen before (antecedents)
  o Things that happen after (consequences)
What Are the Issues?

• To date, ABA-based strategies have the most support as scientifically validated for ASD.
• The incidence of autism has risen dramatically. Virtually all learners with autism have deficits in the areas of speech, language, and communication.
• SLPs must be knowledgeable of ABA terms and concepts in order to actively participate in team discussions and planning.

Our “Students”

• Student Characteristics
• Which do we talk about at the end of the day?
• Which ones do we address first?

What does “to learn” mean?

• Teaching involves manipulating the Antecedent events and the Consequence events in order to change behavior.
• Learning leads to a change in behavior:
  o After a successful lesson, the student can do something he couldn’t do before the lesson.
  o Goal = ALL students will learn new skills

The Pyramid Approach to Education

Andy Bondy, PhD

• A systematic approach to designing teaching programs
• Based on a broad spectrum application of Applied Behavior Analysis (ABA)
• Blends motivational systems, functional activities, and creative communication training with the science of learning

“The Pyramid Approach to Education” (Bondy, 2010)
The Pyramid Approach Model

The Pyramid Approach Model is a structured teaching approach that focuses on functional activities to improve learning outcomes. The model is divided into three main sections:

- The “how” of teaching
- The “why” of behavior
- The science of learning

The “how” of teaching is based on data, which is used to inform instruction. The “why” of behavior involves understanding the reasons behind student actions. The science of learning is about applying educational strategies to enhance learning experiences.

Functional Activities

- Why do we have schools?
  - To teach skills to
    - Get a job
    - Live independently
  - Teach versus “take care of”

- What do we teach?
  - Skills necessary for independence
  - “A functional skill… is an action that will be performed by someone else if a person with disabilities does not perform it” Lou Brown, 1984

- What materials do we use?

Why is this important for SLPs?

- If communication only occurs for 30-minutes per day, twice a week it is simply another activity scheduled into the day – not functional communication!
- Survey the day and assist the team to capture or create opportunities for communication.

Communication Across the Day

<table>
<thead>
<tr>
<th>Schedule/Picture</th>
<th>Time</th>
<th>Staff</th>
<th>Activity</th>
<th>Communication Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8:30</td>
<td>Mrs. Y</td>
<td>Arrival, learners enter room, empty and hang book bags, put home-school log in basket on teacher’s desk. Mrs. Y has a jar of snacks and small toys on her desk containing items the learners like. Amy has trouble unzipping her book bag.</td>
<td>1) Hello! 2) I need help 3) Can I have a sticker?</td>
</tr>
<tr>
<td></td>
<td>8:35</td>
<td></td>
<td>Transition to schedule (empty bag)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8:39</td>
<td>Mr. J</td>
<td>Bathroom, Amy uses the toilet, washes hands—she is independent at both tasks, so today the soap is out of reach.</td>
<td>1) I need help with soap</td>
</tr>
<tr>
<td></td>
<td>8:41</td>
<td></td>
<td>Transition to schedule (Amy finishes task sequence)</td>
<td></td>
</tr>
</tbody>
</table>

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Powerful Reinforcers

Two approaches to getting students to participate in activities
- "Make" them
- Entice them

The Pyramid Approach involves enticing with powerful reinforcers

Pyramid Principles for Using Powerful Reinforcers

- Grandma’s Secret
- Reinforcers are always student defined – can be social or tangible
- Use a reinforcer-first strategy
- No reinforcer, no lesson!

Let’s Make a Deal

What goes into a good deal?
- Who picks the type of reinforcer?
- Which comes first: R+ or demand?
- Workers expect a visual contract including:
  - How much R+
  - How often do we get paid?
  - When do we get paid? (When’s the next one?)
  - Can we re-negotiate the deal?
  - When do we get a vacation (or break?)

Why is this important for SLPs?

- SLPs first need to build rapport with students – best accomplished by pairing self with reinforcers
- To teach communication, start by having students ask for their favorite items
- Visual reinforcement systems can be used to increase motivation for other targeted skills (ex: receptive tasks, such as noun identification)
Functional Communication

Functional communication involves behavior (defined in form by the community) directed to another person who in turn provides related direct or social rewards. (Bondy & Frost, 2002)

Functional Communication?

Functional Communication

- Not all behaviors are communicative
- Must occur between two people
- Two broad categories - requesting and commenting

Nine Critical Communication Skills

Expressive
1. Request reinforcers
2. Request assistance
3. Request a break
4. Accept
5. Reject

Receptive
1. Respond to "wait" or "no"
2. Respond to directions
3. Follow a schedule
4. Transition

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Thinking Like a Behavior Analyst

- Deprivation or Environmental Event
- Question or Prompt
- Model
- Spontaneous/Self-Initiated
- Responsive
- Imitative

John will learn the word “truck”

- Direct (request)
- Social (comment)

- Direct
- Social

- Use
- Understand

- Echoic Mand
- Intraverbal Tact
- Intraverbal Mand
- Echoic Tact
- Pure Mand
- Pure Tact

Contextually Inappropriate Behavior

- Behavior that occurs in the wrong place, at the wrong time, persists too long, or is too weak or forceful
- We are concerned with the function, not the form, of the behavior

3 Functions of Behavior

- To gain some type of R+
- To escape/avoid
- Elicited
Pyramid Principles for Managing CIBs

- Systematically teach acceptable alternate behavior that serves the same function
- FEAB = Functionally Equivalent Alternative Behavior

CIBs and SLPs
Potential FEABs

<table>
<thead>
<tr>
<th>Function</th>
<th>FEAB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gain Access to Reinforcement</td>
<td>Request reinforcer, Indicate “yes”</td>
</tr>
<tr>
<td>Avoid/Escape</td>
<td>Indicate “no”, Request break</td>
</tr>
<tr>
<td>Elicited</td>
<td>Respond to “wait”, Follow schedule “Surprise”</td>
</tr>
</tbody>
</table>

Why is this important for SLPs?

- Students engage in challenging behavior when they do not have the communication skills to meet the same function
- SLPs should assist the team in identifying the function of the CIB
- SLPs should lead the team in teaching the FEAB, as many of these replacements are communication skills

Generalization

- Two approaches to generalization
  - Train skill to mastery then generalize
  - Teach generalization from the beginning
- The Pyramid Approach involves planning for generalization from the beginning
  - Two types of generalization
    - Stimulus
    - Response

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Why is this important for SLPs?

- Emily Rubin (2016) states, “Students with autism need access to communication and learning supports in all settings to help them understand social expectations, what others think and how to engage successfully with peers” (http://leader.pubs.asha.org/article.aspx?articleid=2527044)
- SLPs must consider their service delivery model to teach students to communicate in a variety of settings, with a variety of people for many different items/materials/activities

Effective Lessons

- **Discrete trial format**
  - Short, repeatable behaviors
  - Repetition is not always helpful!
  - Example: Articulation Drills

- **Sequential lesson format**
  - Create task analysis: Determine steps that will be performed in a specific order
  - Backward chains vs. Forward chains
  - Example: Message Construction on SGD

**PECS IV+**

<table>
<thead>
<tr>
<th>Type</th>
<th>Steps</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
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<td>Open Food</td>
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<td>Get Communicative Partner</td>
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</tbody>
</table>

**Effective Lessons**

- **Teacher-led lessons**
  - Can lead to prompt dependency
  - Are standard in mainstream education

- **Student-initiated**
  - Foster independence and spontaneity
  - Necessary for success in “real world”
Why is this important for SLPs?

• SLPs should understand these terms, in order to speak the same language as behavior analysts

• SLPs should actively structure and guide teams to incorporate both teacher-led and student-initiated lessons

Teaching Strategies

• Teaching a new skill involves “helping” the student to perform the new behavior

• The “help” we provide = prompt

• Prompt types include physical, verbal, gestural, visual...

• #1 Rule of Prompting – If you put it in, you take it out!

Teaching without Prompting - Shaping

• Why?
  o If you don’t use prompts, you don’t have to remove them (no risk of prompt dependency)

• How?
  o Change the criterion for success (reinforcement)
  o Small changes add up to big changes over time
  o Guess at the size of the change and then see if it works

• Do not combine with prompting

Why is this important for SLPs?

• Prompt dependency is common among learners with Complex Communication Needs – we must consider this issue when planning our communication lessons

• We can use shaping for articulation training and other lessons!
Minimizing and Correcting Errors

- Error correction strategies
  - Correct it, don’t just FIX it!
  - Within discrete lessons
  - Backstep Error Correction Procedure
    - Find error in sequence; re-establish routine with prompt to prevent error

Discrete Lessons

<table>
<thead>
<tr>
<th>Step</th>
<th>Appropriate Stimulus Control?</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Model correct answer</td>
<td>No</td>
<td>Student merely imitates</td>
</tr>
<tr>
<td>2. Practice the response by repeating the original stimulus</td>
<td>No</td>
<td>Student could be repeating last correct response</td>
</tr>
<tr>
<td>3. Switch to new task</td>
<td>Stimulus control is changed</td>
<td>Student switches to something different</td>
</tr>
<tr>
<td>4. Repeat the original stimulus</td>
<td>YES!!</td>
<td>Student independently responds</td>
</tr>
</tbody>
</table>

The 4-Step Error Correction Procedure!

Sequential Lessons

- Teacher takes the student back in the sequence to last correct step and prompts the next step
- Teacher differentially reinforces

Why is this important for SLPs?

- Provides a consistent way to respond to errors - resulting in more rapid skill acquisition!
- Avoids the probability of practicing errors

The Backstep Correction Procedure!
Data Collection and Analysis

- Purpose of data collection
  - To determine if the lesson is effective
  - To determine what changes to make
- Collect more data early and less later
- Type of data should relate to goal
- Analyze and summarize for trends

Why is this important for SLPs?

- We must document that our students are making progress.
- If no progress, use the Pyramid as your problem-solving tool

Pyramid Analysis: Sequencing Cards

<table>
<thead>
<tr>
<th>Bottom Element of Pyramid</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional Activity</td>
<td>Is this lesson meaningful from the student’s perspective?</td>
</tr>
<tr>
<td>Reinforcement</td>
<td>What type and when?</td>
</tr>
<tr>
<td>Functional Communication</td>
<td>What expressive or receptive skills should also be incorporated into this lesson?</td>
</tr>
<tr>
<td>Contextually Inappropriate Behavior</td>
<td>Are there challenging behaviors that are interfering? If so, what is the function?</td>
</tr>
<tr>
<td>Top Element of the Pyramid</td>
<td>Analysis</td>
</tr>
<tr>
<td>---------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>Generalization</td>
<td>Use variety of sequences, increase accuracy and fluency. Will the student actually perform the sequence?</td>
</tr>
<tr>
<td>Lesson Formats</td>
<td>Discrete or Sequential Lesson? Both!</td>
</tr>
<tr>
<td>Teaching Strategy</td>
<td>Which prompt type? Prompt elimination?</td>
</tr>
<tr>
<td>Error Correction</td>
<td>Discrete Error = 4-Step, Sequential Error = Backstep</td>
</tr>
<tr>
<td>Data Collection</td>
<td>Is the student making progress? If not, what changes will be made?</td>
</tr>
</tbody>
</table>

For more information, contact Pyramid Educational Consultants

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