Teaching Children With Autism Who Have Difficulty Mastering Auditory Discriminations

Sarah Lichtenberger, MA, BCBA & Richard W. Malott, PhD, BCBA-D

PSYCHOLOGY DEPARTMENT

Abstract
Simple and conditional visual and auditory discrimination repertoires are critical components of many skills necessary for daily functioning, including communication, academic, and daily-living skills (Green, 2001). When auditory discrimination is not under instructional stimulus control, it can result in delayed acquisition of new skills and limit academic progress. The purpose of this study was to teach auditory discrimination to children with autism who had little to no progress on classroom procedures that required auditory discrimination, such as selecting an object from an array when given the name of the object as the direction. Auditory discrimination was taught starting with teaching a particular motor response in the presence of an environmental sound, then slowly introducing other sounds and response pairings. We used a variety of teaching methods based on the learners’ progress (e.g., trial-and-error, shaping, and physical prompts). This set of interventions was implemented with three children enrolled in an early elementary special education classroom and were not demonstrating auditory discrimination under instructional stimulus control. Two children mastered the discrimination between a sound S1 and no sound S0 and the discrimination between a sound S2 and sound S3. One child discriminated between three auditory Ss, but did not maintain over time.

Method

- Based on Green (2014) recommendations
- Start with simple discrimination between sound discriminative stimulus (S1) and no sound delta stimulus (S0)
- Teach motor response with each sound
- Goal was to introduce words for simple direction following
- Used physical prompting faded within session

Step 1: Sound S2 & No-Sound S0
- Sound presented for 10 s and tapping the table reinforced
- No sound presented for 10 s; timer restarted if child tapped table

Step 2: Sound S3 & No-Sound S0
- Piano-sound S3 presented for 10 s and tapping the table reinforced
- Drum-sound S5 presented for 10 s

Step 3: Two Sound Ss
- Piano-sound S3 presented as in Step 1
- Drum-sound S5 presented for 10 s and tapping the table reinforced

Step 4: Four Sound Ss
- Introduced two more sounds and two corresponding motor responses
- Maintained previously mastered sounds

Introduction

- Early Intensive Behavioral Intervention (EIBI) is an effective treatment for children diagnosed with Autism Spectrum Disorder (ASD; Lovaas, 1997)
- Ten percent of children make little to no progress (Sallows & Graupner, 2005)
- Approximately 10% of students in our classroom do not demonstrate auditory discrimination, even with intensive training
- Current classroom procedures unsuccessful
- Following directions
- Receptively identifying objects/pictures
- Auditory-visual matching-to-sample with environmental sounds
- Will attend to sounds in environment, but not under instructional stimulus control
- Variety of methods have been examined, but these children do not demonstrate the prerequisite skills for these methods

Children

- Three children in an Early Elementary ASD classroom
- Did not demonstrate auditory-visual matching-to-sample
- Previously enrolled in an EIBI preschool classroom
- Minimal progress in classroom curriculum
- No motor or vocal imitation skills
- Only one child had matching-to-sample skill

Results

<table>
<thead>
<tr>
<th></th>
<th>Total Sessions</th>
<th>Sound S1 and No Sound S0</th>
<th>Sound S2 and Sound S3</th>
<th>Sound S1 and Sound S2</th>
<th>Sound S0</th>
<th>Sound S0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eric</td>
<td>165 sessions</td>
<td>25 sessions</td>
<td>5 sessions</td>
<td>40 sessions</td>
<td>35 sessions</td>
<td>Discontinued after 10 sessions</td>
</tr>
<tr>
<td>Wendy</td>
<td>160 sessions</td>
<td>57 sessions</td>
<td>23 sessions</td>
<td>Discontinued after 28 sessions</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Ariel</td>
<td>96 sessions</td>
<td>Discontinued after 45 sessions</td>
<td>N/A</td>
<td>Discontinued after 37 sessions</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Table 1. Total number of sessions to mastery of each sound S for all three children.

Discussion

- Children engaged in behaviors demonstrating discrimination, though they were not engaging in the target behavior
- Observed some prompt dependency
- Difficulty moving from Step 2 to Step 3
- It is important to start simple auditory discrimination earlier in curriculum
- Might be inadvertently extinguishing attending to auditory stimuli
- If children are not progressing through curriculum, it could take up to 2-3 years before any formal auditory discrimination training
- Currently researching two other methods for teaching this skill in our classroom
- Important to continue to research methods for teaching children with extensive skill deficits

References

Figure 1. Percentage of trials with responses for Auditory-Visual Matching-to-Sample and Phases 1-7 of auditory discrimination training for Eric.