Examining the Effects of Video Modeling & Prompts to Teach Activity Daily Living Skills to Young Adults with Autism Spectrum Disorder

Method

Participant

Participant is a male adolescent 18 years of age diagnosed with Autism Spectrum Disorder (ASD). Participant was selected based upon age, diagnosis, the need to improve the activities of daily living skills and parental permission.

Setting

Participant’s observations were conducted in the home setting. Observations took place in the natural environment where the tasks would be performed. Baseline and maintenance phases occurred in the participant’s home environment.

Identified Activities of Daily Living Skills

Three tasks were identified for the participant through a collaborative process involving his parents. These tasks included skills that the young adult was not able to perform independently or needed prompts to complete. The tasks identified for the participant were: Cooking, Setting the Table and Folding Jeans.

Materials

All videos were created using the Apple iPad. Three videos for the participant were created based on the targeted task. These videos were created from a “first-person” perspective. Through the eyes of the participant, the videos portrayed the arms and hands of the model performing the task (Bellini & Akullian, 2007). The entire task was filmed with a verbal description of each step as it was being performed.

Experimental Design

This study followed Kellem’s (2007) multiple probe design across behaviors. For each participant one task was acquired before the next task was introduced. “When the young adult reached the criterion level on the first targeted behavior, the intervention was then introduced to the second target behavior while the third remained in baseline with data probes” (p. 158).

Dependent variable

The dependent variable was the percentage of steps performed correctly (using a task analysis). The task analysis recorded each step that was performed correctly or incorrectly during each session (Kellens and Morningstar, 2012).

Inter-observer agreement for Participant

Inter-observer checks occurred during 100% of the baseline conditions, 50% of the probe condition, and 24% of the intervention condition. The overall mean was 99%. Agreement ranged from 95%-100%. IOA for prompt data during the intervention condition was 83% with a range of 50% to 100%.

Procedures

This study replicated similar methods by Kellens and Morningstar (2012) in which baseline data were collected from the participant. The intervention was introduced for the first task once a stable baseline was established for all tasks. Intervention for Task 2 after the participant demonstrated acquisition of the first task as determined by three consecutive stable data points at 100%. The same procedure was used for Task 3. Maintenance

Prior to the intervention phase the participant were taught how to access the videos from the iPad. During the intervention phase one verbal prompt was given to the participant to watch the video of the targeted task on the device then to perform the task. An initial prompt was given to review the video from the previous step up until and including the step where the error occurred (i.e. “watch the video”). If errors continued, up to three prompts were given before moving on. Data was collected on the number of prompts given if the participant performed the step incorrectly more than one time.

Maintenance

Maintenance probes were conducted when the Participant demonstrated task acquisition for all three tasks. The iPad was not used during the maintenance probe.

Results

Participant: Task 1 - Make Tortellini

Trials-to-criterion was 11 sessions. During baseline, Participant 1 correctly completed an average of 4% of all 3 trials of making the tortellini task analysis. When the iPad was introduced, the percentage of steps Participant 1 completed increased to 100% with a range of 22%-100% and a mean of 71% over 11 sessions. The mean number of prompts was 3, ranging from 0-21 prompts. During maintenance, the score was 74%.

Participant: Task 2 - Set the Table

Trials-to-criterion was 5 sessions. During baseline, Participant 1 correctly completed an average of 0% (baseline was 0% for all 3 trials) of setting the table task analysis. When the iPad was introduced, the percentage of steps Participant 1 completed increased to 100% with a range of 22%-100% and a mean of 91% over 5 sessions. The mean number of prompts was 4, ranging from 0-2 prompts. During maintenance, the score was 72%.

Participant: Task 3 - Fold Jeans

Trials-to-criterion was 9 sessions. During baseline, Participant 1 correctly completed an average of 0% (baseline was 0% for all 3 trials) of folding the jeans task analysis. When the iPad was introduced, the percentage of steps Participant 1 completed increased to 100% with a range of 78%-100% and a mean of 94% over 9 sessions. The mean number of prompts was 2, ranging from 0-2 prompts.

The Research Team and Assistants:

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Kelly McElrath BCBA  -   Brian Long  -    Hillary Smith.
Dr. Kim Rehak BCBA-D, LBS  -   Rich Rehak Jr.  -    Lisa Wilkinson

For more information:

www.EducationDesigners.org
IIBD@Educationdesigners.org

Table 1

Participant: Task Analysis for Targeted Skills

<table>
<thead>
<tr>
<th>Task Analysis</th>
<th>Participant</th>
<th>Percent of Steps Completed (%)</th>
<th>Number of Prompts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant 1</td>
<td>Task 1: Make Tortellini</td>
<td>12. Wait for water to boil</td>
<td>1.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>13. Add tortellini</td>
<td>4.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>14. Set timer 4 minutes</td>
<td>7.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15. Stir</td>
<td>10.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>16. Turn off stove</td>
<td>13.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>17. Turn off timer</td>
<td>16.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18. Take pot to sink</td>
<td>19.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>19. Drain</td>
<td>22.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20. Put pot back on stove</td>
<td>25.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>21. Scoop onto plate</td>
<td>28.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>22. Get Parmesan cheese</td>
<td>31.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>23. Sprinkle cheese</td>
<td>35.0</td>
</tr>
<tr>
<td></td>
<td>Task 2: Set Table</td>
<td>8. Takes out 3 forks</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9. Takes out 3 knives</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10. Place fork and knife on table</td>
<td>3.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11. Place fork and knife on table</td>
<td>4.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12. Place fork and knife on table</td>
<td>5.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>13. Gets 2 water bottles from the refrigerator</td>
<td>6.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>14. Put 1 bottle on table</td>
<td>7.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15. Put 1 bottle on table</td>
<td>8.0</td>
</tr>
<tr>
<td></td>
<td>Task 3: Fold Jeans</td>
<td>5. Hold up jeans with front facing participant</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6. Fold in half the long way</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7. Fold in half</td>
<td>3.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8. Fold in half</td>
<td>4.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9. Place jeans back in basket</td>
<td>5.0</td>
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