Teaching Graphic Symbols to Children with Complex Communication Needs Through Video and Play
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Introduction
- Over 3.5 million individuals in the U.S. cannot use their natural speech to effectively communicate and require some form of augmentative and alternative communication (AAC) (Brekkeian & Mirenda, 2005).
- Binger and Light (2006) showed increased prevalence of children who require AAC especially in the preschool population.
- It is important to provide children with I.E. services and the skills needed to become effective communicators and facilitate language development.
- Devices are being used with increasing frequency in AAC, but there is little empirically validated instructional material available (AAC-RERC, 2011).

Research Objectives
- To develop, implement and evaluate a program to teach ten visual representations of important early concepts to children who cannot use their natural speech to communicate the concepts verbally.
- It was hypothesized:
  - that the program would be effective in teaching the targeted concepts
  - that using a direct instruction approach would reduce the learning demands of the participants and facilitate acquisition of the targeted concepts
  - that the format would be enjoyable and easy to implement with an iPad and a few other items

Methods/Procedures
- Single subject multiple baseline across subjects research design
- Participants: one male and one female child
- Ages: 4;3 to 4;6
- Participants: one male and one female child
- Targeted concept was presented using a short video scene
- In each trial the subject was shown an array four symbols (one target concept and three foils) for each of the ten targeted concepts
- For concepts the child consistently confused with a foil, a match to sample paradigm was employed—allowing the child to receive feedback not provided during initial intervention sessions
- The appeal of the video instruction was effective in capturing and maintaining the children’s attention.

Demographic Information for Participants

<table>
<thead>
<tr>
<th>Participant</th>
<th>Age</th>
<th>Score</th>
<th>Placement</th>
<th>Modality</th>
<th>Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>James</td>
<td>4;3</td>
<td>95</td>
<td>Not currently attending</td>
<td>Natural Speech, Gestures, Facial Expressions</td>
<td>Developmental Aplasia of Speech, Expressive and Receptive language delay</td>
</tr>
<tr>
<td>Molly</td>
<td>4;6</td>
<td>67</td>
<td>Full-time integrated preschool</td>
<td>Total Communication (Signs and Words/Word approximations)</td>
<td>Down Syndrome, Expressive and Receptive language delay</td>
</tr>
</tbody>
</table>

Results
- Over 3.5 million individuals in the U.S. cannot use their natural speech to effectively communicate and require some form of augmentative and alternative communication (AAC) (Brekkeian & Mirenda, 2005).
- Binger and Light (2006) showed increased prevalence of children who require AAC especially in the preschool population.
- It is important to provide children with I.E. services and the skills needed to become effective communicators and facilitate language development.
- Devices are being used with increasing frequency in AAC, but there is little empirically validated instructional material available (AAC-RERC, 2011).

Discussion
- Results suggest that the program utilized in the study is effective in teaching the targeted concepts to children with complex communication needs.
- James demonstrated mastery of the concepts by meeting criterion (8 out of 10 correct) at a maintenance point two weeks post intervention and surpassing criterion at a maintenance point four weeks post intervention.
- James demonstrated generalization of concepts beyond chance.
- Molly demonstrated mastery of the concepts by meeting criterion at maintenance points two and four weeks post intervention.
- Both participants showed a greater increase in learning after receiving specific feedback in the match to sample paradigm.
- The appeal of the video instruction was effective in capturing and maintaining the children’s attention.

Clinical Implications
- Results of the study suggest that a direct instruction paired with video and play activities can successfully teach the PCS for the targeted concepts.
- Pairing examples of actions related to the meanings of targeted concepts with the visual representation may facilitate symbol acquisition.
- The program may be effective for teaching additional visual representations.
- The videos offer alternative and potentially more instructional, yet fun content for mobile devices.
- The videos were simple and relatively inexpensive to create and could be replicated and expanded upon in order to create a maintainable, easily accessible, database of instructional media.

References

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