A Low-Tech Visual Scene Display and Aided Modeling Intervention for Young Children with Complex Communication Needs

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Visual Scene Displays

• Visual scenes are contextually rich images represented as pictures, photographs, line drawings or images (Wilkinson & Hennig, 2009).
• Language concepts are embedded within this scene.
• The rationale behind using VSDs with young children is that they facilitate rich, context-support and event-based learning that is important for learning language (Drager et al., 2003; Wilkinson & Light, 2011).

Low-Tech VSDs

• To date, information on the use of VSDs with young children has been limited to presenting these on computerized or high-tech systems.
• However, there are advantages to implementing VSDs via non-computerized low-tech means.
  - Can be used in communities where access to computers and high-tech devices are not easily available
  - Can be a way of “trying out” AAC
  - Can be incorporated in environments where a computer is not ideal such as in a swimming pool or a sand box
  - Can incorporate motion by moving hotspots

Aided Modeling

• Modeling language is considered essential for language development.
• Typically developing children receive many verbal language models from their communication partners, children who use AAC receive much fewer AAC language models.
• This creates a language asymmetry between the input and output (Smith & Grove, 2003).
• Aided modeling refers to the use of natural speech while pointing to and labeling symbols on the individual’s AAC system (Dada & Alant, 2009).
Low-Tech VSDs + Aided Modeling

- VSDs are just a tool that provides contextual support; the success of the interaction truly depends on the interaction between a child and his or her partner.

- An intervention package combining low-tech VSDs and aided modeling may be effective for young children with complex communication needs.

Current Study

- The current research study investigated implementing an intervention combining low-tech VSDs and aided AAC modeling with young children who have complex communication needs.

- What is the effect of Low-Tech VSDs and aided modeling on increasing the number of communication turns taken by young children with complex communication needs?

- What is the effect of Low-Tech VSDs and aided modeling on increasing the number of unique semantic concepts expressed by young children with complex communication needs?

Method

- A single-subject multiple probe across participants design was used.

- The independent variable was an intervention combining low-tech VSDs and aided modeling provided during naturalistic, social communication situations.

- The dependent variables were the number of communication turns taken and the number of unique semantic concepts expressed by young children with complex communication needs.

Participants

<table>
<thead>
<tr>
<th>Participants</th>
<th>Language Scores</th>
<th>Communication</th>
<th>Matthew</th>
<th>Expressive</th>
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<tr>
<td>Anna 4/19</td>
<td>Autism Spectrum</td>
<td>Level IV</td>
<td>9</td>
<td>Signs and</td>
</tr>
<tr>
<td></td>
<td>F Disorder</td>
<td></td>
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<td>pictures</td>
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<tr>
<td>Julia 4/8</td>
<td>Lite-15</td>
<td>Level IV</td>
<td>1</td>
<td>Signs and</td>
</tr>
<tr>
<td></td>
<td>F Syndrome</td>
<td></td>
<td></td>
<td>pictures</td>
</tr>
<tr>
<td>Bucky 2/5</td>
<td>Developmental</td>
<td>Level IV</td>
<td>10</td>
<td>Words, signs</td>
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<td></td>
<td>M Delay</td>
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<td>and pictures</td>
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Setting & Materials

- All sessions took place at the children's preschools or day care centers.
- Play activities and songs served as the social communicative contexts during which interaction occurred.
- Each play activity or song was represented by a six-symbol PCS grid during baseline; or by VSDs during intervention.
- Each visual scene had between one to six hotspots embedded within the scene.

Procedures

- Sessions: All sessions were videotaped and lasted between 10-15 minutes and took place twice per week.
- Baseline: Six-symbol PCS grids were placed in close proximity to the participants. No aided modeling was provided.
- Intervention: A binder with low-tech VSDs and aided modeling were provided. The grids used during baseline were present as well.
Research Questions

• What is the effect of Low-Tech VSDs and aided modeling on increasing the number of communication turns taken by young children with complex communication needs?

• What is the effect of Low-Tech VSDs and aided modeling effective on increasing the number of unique semantic concepts expressed by young children with complex communication needs?

Research Questions

• Are Low-Tech VSDs and aided modeling effective in increasing the number of communication turns taken by young children with complex communication needs?

• Are Low-Tech VSDs and aided modeling effective in increasing the number of unique semantic concepts expressed by young children with complex communication needs?
Discussion

• All three participants demonstrated significant increases in the number of communication turns taken and the number of unique semantic concepts expressed following the intervention.

• The low-tech VSDs used were consistent with young children’s schematic organization of language, minimizing the time and resources needed to learn to use them to communicate.

• Having low-tech VSDs with moveable hotspots incorporated an additional cue of motion.

• Aided modeling may have facilitated the participants’ comprehension and production of increased semantic concepts.

• For AAC interventions to be maximally effective it is not enough for children to just have access to appropriate AAC systems, but they also require appropriate instruction.

Clinical Implications

• This study demonstrated positive results for three young children who had differing diagnoses and who were mainly at a pre-symbolic level of communication.

• This intervention is a low-cost option for low-resource communities that may not have access to high technology or computers.

• These low-tech VSDs can be developed easily and incorporated into social communication contexts by speech language pathologists, teachers and parents.

Conclusions

• The current study contributes important information regarding a novel, low-cost AAC intervention approach using low-tech VSDs and aided modeling.

• The results provide preliminary evidence of a social communication intervention effective for young children with complex communication needs.

• It is an intervention that provides children with complex communication needs access to the “magic and power of communication” (Light & Drager, 2007).

Thank you!

For further information about this study please contact:

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