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

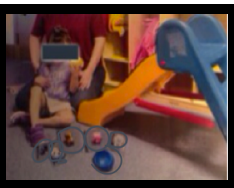
- A single-subject multiple probe across participants design was used.
- The independent variable was an intervention combining low-tech VSDs and aided modeling provided during naturalistic, social communication situations.
- The dependent variables were the number of communication turns taken and the number of unique semantic concepts expressed by young children with complex communication needs.

Participants

Participants			Language Scores		
Name	Age, Sex	Disability	Communication Matrix Level	CDI Expressive	Communication Modes
Anna	4;10 F	Autism Spectrum Disorder	Level III	8	Signs and pictures.
Julia	4;8 F	Idic-15 Syndrome	Level III	1	Signs and pictures.
Barry	2;1 M	Developmental Delay	Level IV	10	Words, signs and pictures.

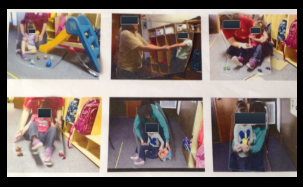
Setting & Materials

- 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.



VSD showing multiple hotspots

VSD showing single hotspot



Contextual scenes as menu items

Procedures

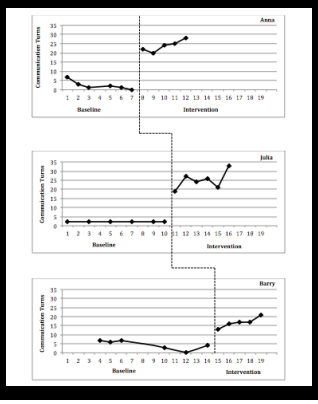
- Sessions: All sessions were videotaped and lasted between 10-15 minutes and took place twice per week.
- Baseline: Six-symbol PCS grids were placed in close proximity to the participants. No aided modeling was provided.
- Intervention: A binder with low-tech VSDs and aided modeling were provided. The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

Results

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?

Communication Turns



Anna

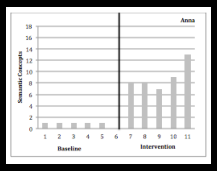
Julia

Barry

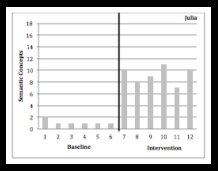
Research Questions

- 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?

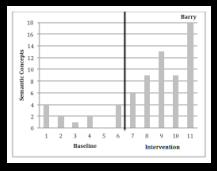
Semantic Concepts



Anna



Julia



Barry

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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