USING THE IPAD TO SUPPORT PEER INTERACTION FOR PRESCHOOL CHILDREN WITH CCN

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"Communication is about laughing and arguing, learning and wondering why, telling stories, complaining about what is or what isn't, sharing dreams, celebrating victories" (Light, 1997)

Importance of Social Interaction

• Increase school participation
• Increase self-confidence
• Lead to future academic success
• Lead to future success in building relationships
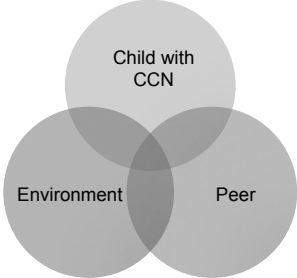

The Problem

• Physical Inclusion ≠ social interaction (Ryndak, Jackson, & White, 2013)

• Children with complex communication needs (CCN) have trouble using language to establish and maintain friendships in early childhood (Gertner, 1994)

• Students with CCN interact mainly with adults at school (Chung, Carter, & Sisco, 2012; Eriksson, Welander & Granlund, 2007; Harper, Symon, & Frea, 2008)

Children with Complex Communication Needs

• Why are they more at risk for social isolation?

Child with CCN

Environment

Peer

Peer interaction: What do we know?

• Breaking down barriers = interaction!

• Best evidence?
  • Multicomponent interventions that get the peers involved (Therrien, Light, & Pope, 2016)

Problem with Peer-mediated components

Peers

Children

I am the special helper!

I need help please.

"Equality is a hallmark of children's peer relations"
(Newcomb & Bagwell, 1995)

Using iPads to support social interaction for preschoolers who use AAC

Research question: what is the effect of intervention on the frequency of symbolic communicative turns expressed by children with CCN in interactions with peers?

Also investigated:
- maintenance
- generalization
- social validity

Methods

- Single-subject, multiple probe across partners design
- Participants:
  - 2 preschool children with complex communication needs
  - 6 peers from their preschool classroom
- Context & setting:
  - Storybook "reading" context
  - Small room outside classroom
  - Generalization probes took place in classroom book center

Methods

- Dependent Variable: Symbolic Communicative Turns

Symbolic

Cat!

Dog!

Mommy
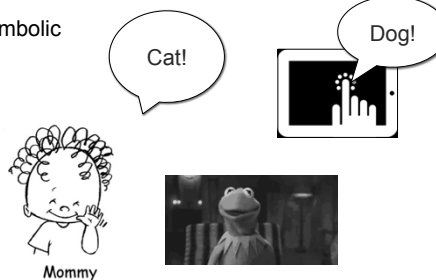
Independent Variable

Package Intervention:
1. Provision of AAC

2. Training for peer & child with CCN

Independent Variable: Provision of AAC

Independent Variable: Provision of AAC

Independent Variable: Provision of AAC

iPad
- Appeal to children
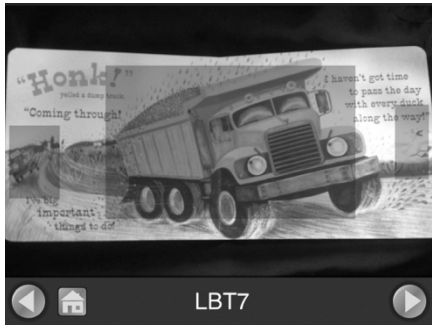- Decrease stigma
  (McNaughton & Light, 2013)

Independent Variable: Provision of AAC

GoTalk NOW
- Functional for study (grids, VSDs, digitized speech)
- Easy for adults to program (Caron, Light, & Drager 2015)
- Commercially available

Independent Variable: Provision of AAC

LBT7

Independent Variable: Training

- "Take one turn and wait for your friend to take a turn"

- Direct instruction (model, guided practice, independent practice)
- Most-to-least prompting
- Procedural reliability: 93% Matthew, 95% Benjamin

Participants with CCN

Matthew	Benjamin
• 4 years old	• 4 (almost 5) years old
• Prader-Willi & DD	• 22q11.2 deletion
• AAC: some signs and an Accent 1000 with LAMP – Words for Life	• Introduced to iPad as AAC without much success
	• Dynavox Compass
	• LAMP
• Peers:	• Peers:
• Nora - 3;6	• Marcus - 5;5
• Michael - 3;7	• Fiona - 4;10
• Grace - 4;5	• Fynn - 5;1

Results - Matthew

- PND – 100%
- Raw Gains:
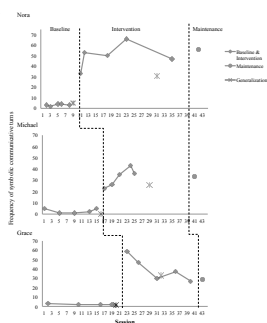 - 47 turns
  - 30 turns
  - 38 turns

Figure 1. Frequency of symbolic communicative turns during a ten-minute book sharing interaction with Matthew and three peers.

Results - Benjamin

- PND:
  - 100%
  - 60%
  - 30%
- Raw Gains:
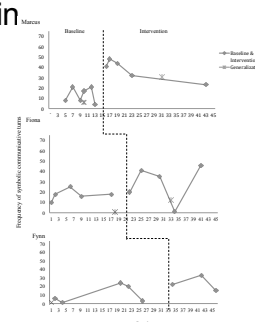 - 24.4 turns
  - 11.2 turns
  - 12.5 turns

Figure 2. Frequency of symbolic communicative turns during a ten-minute book sharing interaction with Benjamin and three peers.

Social Validity

I was surprised how much they interacted with each other while using the iPad…The iPad is a great way to get them engaged yet also promote independence. It also helps them interact together even when communication may be an issue…I would love to use something like this in the classroom.

Analysis

- Matthew's Results

- Benjamin's Results

Clinical Implications

- Peer interaction should be a goal for students with CCN

- Intervention CAN make a difference if you consider:
  - environment
  - peer
  - characteristics of child with CCN

Clinical Implications

- Think about the goal of intervention and the role of the peer

peers ≠ mini teachers

- ease of implementation = simple intervention for preschool book centers
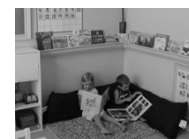
Future Research

Efficacy Research

• Evaluate the effectiveness of intervention across populations and contexts

Implementation Research

• Evaluate the effectiveness of training SLPs, teachers, and aides

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