PennState

Effects of a Video Visual Scene Display on Modes of Communication

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BACKGROUND

- Visual Scene Displays (VSDs) have been shown to be an effective AAC intervention to increase communication for individuals with ASD (Wilkinson & Light, 2014)
- Reviews of research indicate that AAC does not impede production of speech, but appears to have a positive effect on speech production (Millar, Light, & Schlosser, 2006; Schlosser & Wendt, 2007)
- Research has shown that video stimuli, specifically stimuli that is dynamic in nature (e.g. videos on YouTube, moving images on a screen), attracts the visual attention of individuals with ASD but little research exists in terms of the impact of the use of video in supporting expressive communication for individuals with ASD (Brodhead, Abston, Mates, & Abel, 2017)
- Video VSDs allow for the integration of video stimuli with communication supports

RESEARCH AIMS

- Describe communication modes used by 5 participants with severe ASD and CCN at baseline
- Describe communication modes used by 5 participants with severe ASD and CCN at intervention (with use of Video VSD)
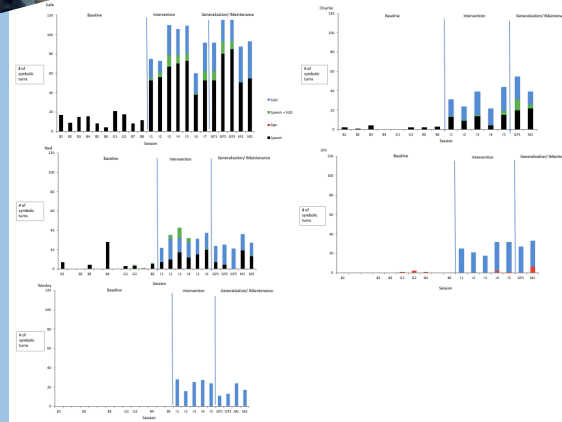
PARTICIPANTS

Participant	Age	Gender	Disability	Communication Modes and Supports	Educational Placement and Inclusion Activities
Jude	10.9	Male	Autism spectrum disorder CARS assessment- Severe ASD	-Speech: Delayed echolalic and limited utterances using speech -Signs: None -SGD: None -Gestures: Yes/No Head nods	-Elementary school Autism Support Classroom with 1:1 -Included for specials (i.e., gym, music, art), language arts, and social studies with 1:1
Ned	13.4	Male	Autism spectrum disorder CARS assessment- Severe ASD	-Speech: Delayed echolalic or scripted speech -Signs: None -AAC/SGD: iPad with apps (GoTalk Now), low-tech board with 20 sentences for commonly requested items/sayings -Gestures: Yes/No Head nods	-Middle school Autism Support Classroom with 1:1 -Included for specials (i.e., gym, music, art) with 1:1
Wesley	14.0	Male	Autism spectrum disorder CARS assessment- Severe ASD Seizure disorder	-Speech: None -Signs: Yes, No, Stop, music -AAC/SGD: iPad with apps, PODD -Gestures: Yes/No Head nods	-Middle school Autism Support Classroom with 1:1 -Included for specials (i.e., gym, music, art) with 1:1
Charlie	10.4	Male	Autism spectrum disorder CARS assessment- Severe ASD	- Speech: Vocalizations and word approximations with prompting (~20) -Signs: approximations (~20) -AAC/SGD: trialing iPad with Proloquo2go Vocalizations and word approximations with prompting (~20) -Gestures: Yes/No head nods	-½ day (4 hours) of 1:1 ABA services -½ day of 1:1 virtual charter school
Jim	18.1	Male	Autism spectrum disorder CARS assessment- Severe ASD	-Speech: None -Signs: approximations (~10 with prompting, 2 without prompting) -AAC/SGD: minimal use of iPad with communication application (GoTalk Now) -Gestures: Yes/No head nods	-Substantially separate Autism Support Classroom -No inclusion opportunities

RESULTS

The graph below describes the multimodal communicative acts taken by each participant (i.e. Jude, Ned, Wesley, Charlie, and Jim) in ten-minute probes at baseline, intervention, generalization, and maintenance.

Overall, the results of the study indicate that there was an increase in the amount of multimodal communicative acts taken by each participant with the video VSD app.

	Jude		Ned		Wesley		Charlie		Jim	
	Baseline	Intervention	Baseline	Intervention	Baseline	Intervention	Baseline	Intervention	Baseline	Intervention
Overall	Average: 11 Range: 4-17	Average: 89 Range: 73-110	Average: 8 Range: 0-28	Average: 30 Range: 22-38	Average: 0 Range: 0-0	Average: 24 Range: 16-28	Average: 2 Range: 0-4	Average: 32 Range: 22-44	Average: 0 Range: 0-1	Average: 23 Range: 18-30
Speech	Average: 11 Range: 4-17	Average: 58 Range: 38-70	Average: 8 Range: 0-28	Average: 13 Range: 7-20	0	0	Average: 2 Range: 0-4	Average: 11 Range: 4-15	0	0
SGD	0	Average: 24 Range: 12-31	0	Average: 16 Range: 15-21	0	Average: 24 Range: 16-28	0	Average: 19 Range: 14-25	0	Average: 25 Range: 18-31
Sign	0	0	0	0	0	0	0	0	Average: 0 Range: 0-1	Average: 0 Range: 0-3
Speech + SGD	0	Average: 6 Range: 1-12	0	Average: 0 Range: 0-1	0	0	0	Average: 1 Range: 0-4	0	0

METHOD

DESIGN: Post-hoc analysis of a single subject study conducted with five individuals

Coding: Speech, signs, SGD turns, and simultaneous speech + SGD were coded

MATERIALS

- **Samsung Galaxy 12.2 with EasyVSD application (version 1.53)**
  - Green camera allows photos/videos to be taken
  - Orange circle allows hotspots to be created
  - Green border indicates video
  - Purple border indicates VSDs
  - Hotspots: blue circles are used to communicate (e.g. "Woody", "Buzz Lightyear to the rescue")
  - Play button allows for the video to play or pause

PROCEDURES

Baseline	Intervention	Generalization	Maintenance
-10 minute sessions with researcher -5 bookmarked preferred YouTube Videos on iPad -Researcher would comment/question every 60 seconds or respond with extension/recast if communication attempt was made by participant -Current forms of AAC available	-10 minute sessions with researcher -5 videos (1-2 minutes in length) uploaded and programmed within EasyVSD application -Each video had 5 pre-programmed VSDs & 3 hotspots per VSD -Researcher would comment/question every 60 seconds or respond with extension/recast if communication attempt was made by participant -Current forms of AAC available, as well as EasyVSD	-10 minute sessions with known partner (all 1:1 aides) -Same procedures as intervention	-10 minute sessions with researcher -Same procedures as intervention

CONCLUSION/FUTURE RESEARCH

- During intervention, the three participants with speech show an increase in both speech production and communicative turns, even with the use of SGD. The participants without speech, see an increase in speech output as well as communicative turns.
- Most intervention research for children with autism who are nonverbal has focused on either AAC (Ganz et al., 2012; Mirenda & Bopp, 2003; Schlosser & Wendt, 2008) or speech (Rogers et al., 2006), but not both, VVSD could potentially be used to facilitate this type of intervention in the future.

DISCLOSURES