



PennState

Effects of a Video Visual Scene Display on Modes of Communication

Jessica Caron, Ph.D., Emily Laubscher, M.S., Janice Light, Ph.D., David McNaughton, Ph.D & Victoria Starr, B.S.

The Pennsylvania State University



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)

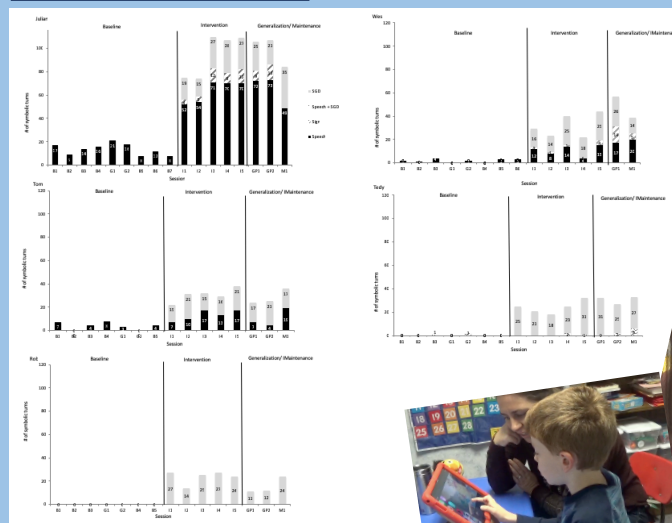


PARTICIPANTS

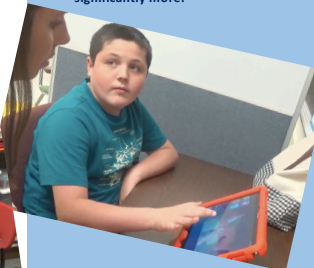
Participant	Age	Gender	Disability	Communication Modes and Supports	Educational Placement and Inclusion Activities
Julian	10:9	Male	Autism spectrum disorder CARS assessment- Severe ASD	-Delayed echolalic and limited utterances using speech -Visual schedules	Elementary school Autism Support Classroom with 1:1 included for specials (i.e., gym, music, art), language arts, and social studies with 1:1
Tom	13:4	Male	Autism spectrum disorder CARS assessment- Severe ASD	-iPad with apps (GoTalk Now) -Low-tech board with 20 sentences for commonly requested items -Delayed echolalic or scripted speech -Visual schedules	Middle school Autism Support Classroom with 1:1 included for specials (i.e., gym, music, art), language arts, and social studies with 1:1
Rob	14:0	Male	Autism spectrum disorder CARS assessment- Severe ASD	-iPad with communication apps (Proloquo2Go, Assistive Express) -Visual schedules	Middle school Autism Support Classroom with 1:1 included for specials (i.e., gym, music, art) with 1:1
Wes	10:4	Male	Autism spectrum disorder CARS assessment- Severe ASD	-Physical Communication -Sign approximations (~20) -Vocalizations and word approximations with prompting (~20) -Visual Schedules	~5 day (4 hours) of 1:1 ABA services ~5 day of 1:1 virtual charter school
Toby	18:1	Male	Autism spectrum disorder CARS assessment- Severe ASD	-Physical Communication -Sign approximations (~10 with prompting, 2 without prompting)	Substantially separate Autism Support Classroom No inclusion opportunities

RESULTS

Modes of communicative turns taken by each participant in ten-minute probes at baseline, intervention, generalization, and maintenance.

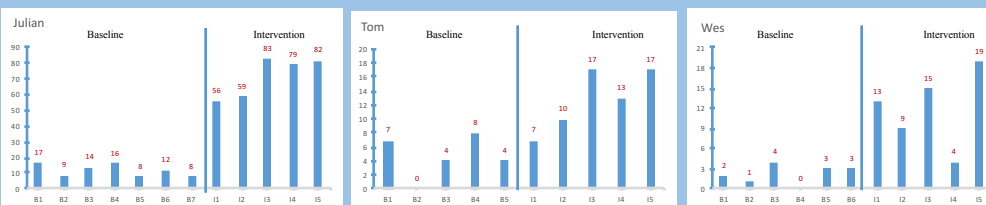


- All participants increased turns from baseline, with the introduction of the EasyVSD application (videos with embedded VSDs)
- Overall, participants that used speech in baseline, maintained use of speech or increased use of speech with the introduction of the SGD.
- Those that didn't use speech in baseline didn't use speech in intervention, but did increase in communication as they were able to use the SGDs to communicate significantly more.



Speech use by 3 of the participants (who use speech as a mode):

Baseline = data without EasyVSD App & Intervention = data with EasyVSD App



The 3 participants that used speech at baseline, increased the use of speech (comparison of averages) during intervention when introduced to the EasyVSD app.

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

- Introduction of videos with embedded VSDs did not inhibit the use of speech – for those that had speech at baseline, speech increased with the introduction of the application.
- 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, VSD could potentially be used to facilitate this type of intervention in the future.

DISCLOSURES

First author funded through Grant #H325K170130 (Co-PI: Caron & McNaughton), Masters Level Training grant to improve outcomes of individuals who required AAC.

NIDILRR grant number #90RE5017- Rehabilitation Engineering Research Center on Augmentative and Alternative Communication (RERC on AAC)