# Effect of a Training using Video VSDs On Peers' Interpretations of Communication from Students with Multiple Disabilities

Christine Holyfield, Janice Light, Kathryn Drager, David McNaughton, and Jessica Gormley

## Rationale

- Individuals with multiple disabilities who communicate through presymbolic behaviors frequently display communication that is idiosyncratic and subtle
- Unfortunately, these communicative behaviors often go unnoticed or misinterpreted by communication partners
- In addition to the negative impact on quality of life for individuals with multiple disabilities, infrequent and inaccurate responses to communication from communication partners is detrimental to communication and language development
- Training communication partners to accurately interpret subtle, idiosyncratic communicative behavior may support communication partners in responding to it

## Research Questions

- What is the effect of a training using video VSDs on the frequency of accurate (as defined by consistency with highly-familiar communication partners') interpretations made by general education middle school peers of the behaviors of middle schoolers with multiple disabilities?

## Method

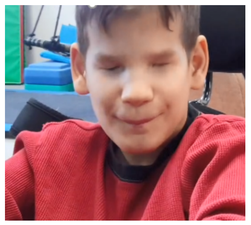
- A pretest-posttest control group design was used to evaluate the impact of the training
- During the pre-and posttests, participants viewed 18 unique video clips (6 from each student with multiple disabilities) and, after each clip, decided:
  - Was the behavior communicative?
  - If so, what was being communicated?
- Pretest scores were subtracted from posttest scores to yield gain scores for each participant
- A one-way analysis of variance (ANOVA) was used to compare the gain scores of participants in the experimental and control groups

## Participants

- 3 middle school students with an educational diagnosis of multiple disabilities
  - Alyse, Van, and Frankie (pseudonyms)
  - All 3 students communicated primarily through a small corpus of presymbolic, idiosyncratic behaviors
  - All 3 students were non-ambulatory
- 24 middle school students who were typically developing
  - The students were in grades 6, 7, or 8
  - 12 students were randomly assigned to the experimental group
  - 12 students were randomly assigned to the control group

## Materials

- The training utilized EasyVSD (InvoTek, http://www.invotek.org) with video VSDs enabled
- Video depicting each of the 3 students with multiple disabilities producing communicative and non-communicative behaviors was imported in to the app



## Procedures

- Participants in the experimental group completed a short, 15-min training using EasyVSD (InvoTek, http://www.invotek.org) with video VSD in which:
  - The investigator played videos depicting communicative behavior from each of the students with multiple disabilities and modeled accurate interpretation of that behavior
  - Participants engaged in guided practice viewing additional videos, interpreting those videos aloud, receiving feedback from the investigator, and programming hotspots onto the video VSDs labeling the meaning behind behaviors

## Results

- In the pretest, peers inaccurately interpreted the communicative behavior of the three students ($M$ = 32%)
- Following the intervention, each participant in the experimental group displayed marked gains in their interpretation scores ($M$ = +53%)
- Participants in the control group did not experience gains ($M$ = -3%)
- The difference between these groups was significant ($F(1,22)=78.91$, $p<0.001$)

## Discussion & Implications

- Accurately interpreting the behavior of individuals with multiple disabilities who are presymbolic communicators is foundational to responding appropriately to those behaviors that are communicative
- Video VSD appears to be an effective and efficient modality for teaching peers to interpret presymbolic behaviors accurately
- Future research should evaluate the effect of video VSD on partner responsivity to presymbolic communicative behavior during live interactions
- Future research should also explore processes for supporting stakeholders (e.g., parents, teachers) in creating content for less-familiar communication partners using video VSD
- Future research should also consider subsequent effects on the individuals with multiple disabilities

## Acknowledgements

The contents of this presentation were developed under a grant from the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR grant number #90RE5017) to the Rehabilitation Engineering Research Center on Augmentative and Alternative Communication (RERC on AAC). NIDILRR is a Center within the Administration for Community Living (ACL), Department of Health and Human Services (HHS). The contents of this presentation do not necessarily represent the policy of NIDILRR, ACL, HHS, and you should not assume endorsement by the Federal Government

Additionally, the first author received funding from the U.S. Department of Education grant #H325D110008 during her doctoral training at Pennsylvania State University, and the fifth author received funding from the U.S. Department of Education grant #H325K080333 during her graduate training at Pennsylvania State University.