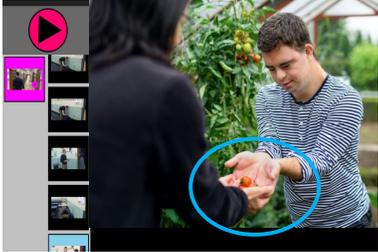


Video with Visual Scene Displays to Support Participation and Communication in Meaningful Life Contexts

Christine Holyfield, David McNaughton, Janice Light, Erik Jakobs, Salena Babb, Becca Stroschein, Courtney Dobrzynski, Zhigao Liang, Emily Laubscher




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Participation goals

- Employment
- Higher education
- Shopping
- Community transportation
- Participation in community building volunteer activities

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Communication challenges: Community participation

- Speech will not meet communication needs of
 - 40% of adults with autism spectrum disorders
 - 50% of adults with Down syndrome
- Less than 10% of adults with developmental disabilities who **need** communication supports **receive** communication supports



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Key Features for Communication Supports

- Support **independent performance** of multi-step skills in community
- **Easily learned and used**
- Provide **communication assistance** as needed
- Make use of **highly portable, commonly available** technology
- Easily developed for **individually selected goals** by typical support providers
 - family members, group home workers



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Video visual scene display (VSDs)

- Video modelling with communication supports
 - Participation + Communication
- Capture video of events/ interests
- Pause at key moments
 - Create visual scene at these junctures
 - Add hotspots with speech output



RERC on AAC

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• Sam

- 21-years old
- Down syndrome
- Complex communication needs
 - Speech intelligibility <10%
- Independent shopping
 - Taco shells, bananas, cheese at deli counter
- Large grocery store



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Process of making a video VSD

- 1) video of an activity is recorded and imported into the video VSD app on a tablet computer;
- 2) the video VSD app is used to play the video, and to pause the video at key points
 - pausing the video creates a still image that can be used as a VSD for communication;
- 3) hotspots (i.e., a part of the image that speaks when touched) can be added to the VSD, and programmed with vocabulary for communication.

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Making the video

1. Get shopping cart, enter store
2. Navigate to aisle for taco shells
3. Locate taco shells on store shelf
4. Pick up and check taco shells against list, place shells in cart

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Video VSD

- Main screen shows current activity
 - Video pauses for each step
- Played in sequence
 - Green "play" button
- Thumbnails at top show different steps



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Using the video VSD app

- Navigate to item 3 (deli counter)
- Talk to the clerk ("Hi, how are you?")
- Talk to the clerk ("I would like a quarter pound of 'Dietz & Watson' American cheese sliced thin.")
- Talk to the clerk ("That's good")
- Talk to the clerk ("No, thank you")
- Talk to the clerk ("Thank you! Have a great day")
- Take the item from the clerk



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Process of making a video VSD

- video of an activity is recorded and imported into the video VSD app on a tablet computer;
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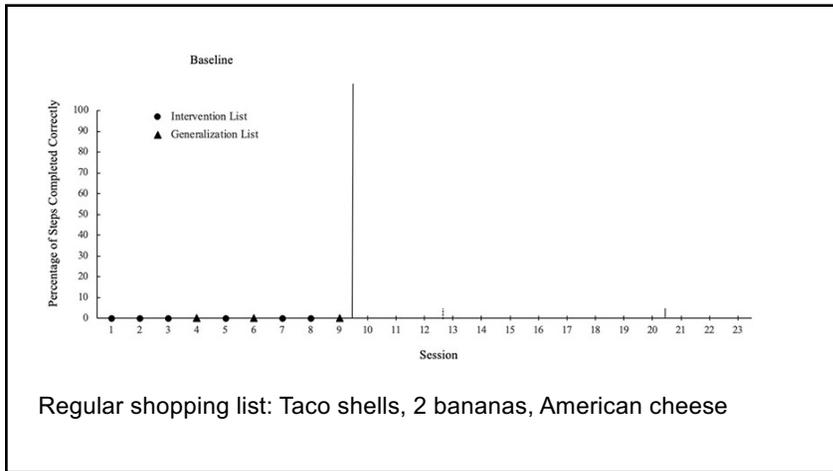
11

Video VSD

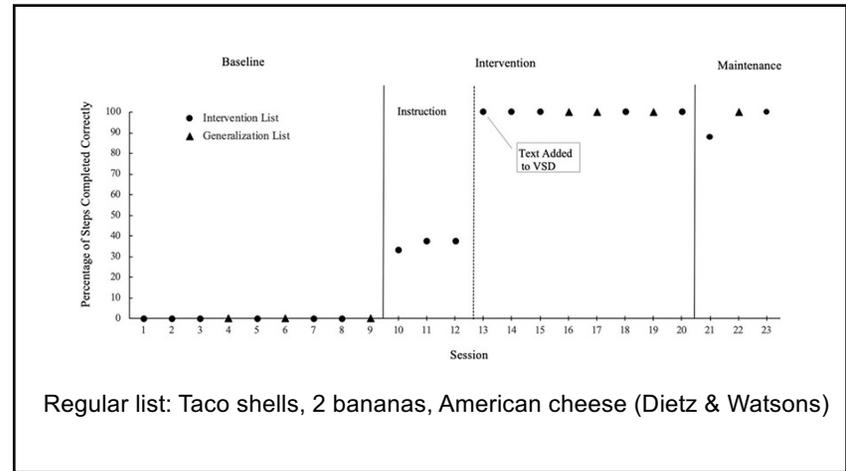
- Thumbnails at top show different steps
- Played in sequence
- Main screen shows current activity
 - Video visual scene display (VSD) with hotspot
 - Hotspot produces speech when touched



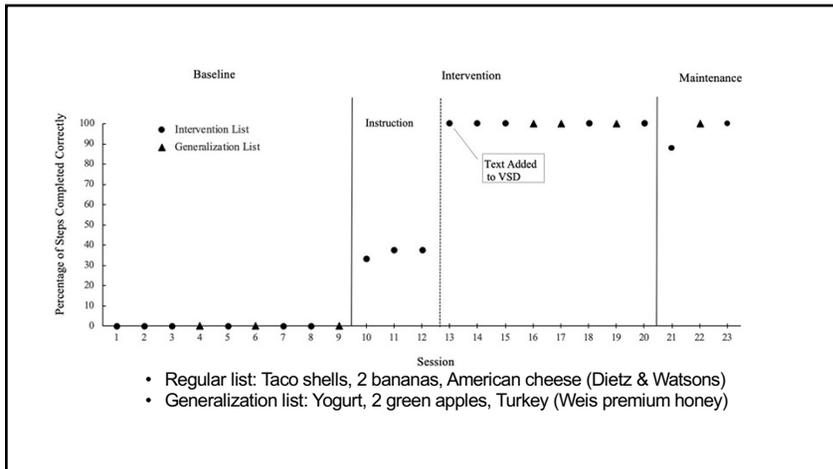
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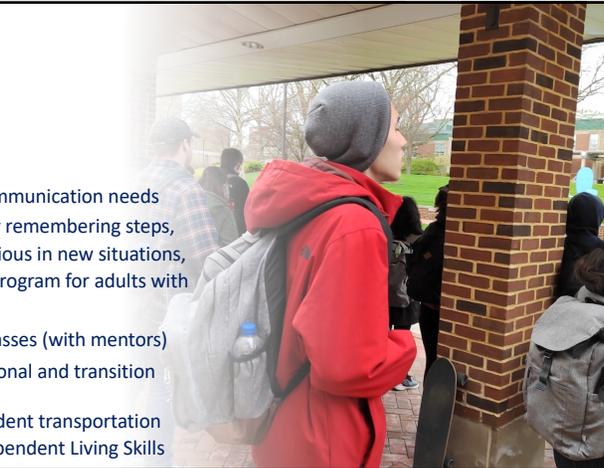
Dream Shopping

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Your turn

Cameron

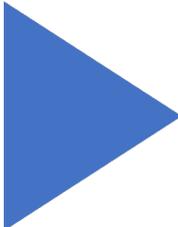
- 21-years old
- Autism
- Complex communication needs
 - Difficulty remembering steps,
 - Very anxious in new situations,
- Penn State Program for adults with IDD/ASD
- Attends 2 classes (with mentors)
- Learn vocational and transition skills
 - Independent transportation
 - Independent Living Skills



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Your Turn: Making a Video VSD

- What would be in the video?
- Where would you insert "pauses"?
- Where would you add hotspots for communication?
 - What would the hotspots "say"?



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Making a Video VSD

- Walk to the bus station and wait there
- Wait for the NE Aaron Drive bus, say "There's the NE Aaron Drive bus" as it approaches
- Get on the bus
- Swipe the transportation card
- Say "Hello, I want to go to Martin Terrace" to the driver
- Take a seat or stand and wait
- Pull cord
- Go to the exit door
- Hold the handle and wait
- Say "Thank you" to the bus driver and exit the bus
- Walk to his apartment

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Communication challenges: Social Interaction

- Speech will not meet communication needs of
 - 40% of adults with autism spectrum disorders
 - 50% of adults with Down syndrome
- Less than 10% of adults with developmental disabilities who **need** communication supports **receive** communication supports



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Video VSDs

- **Provide a context to support interaction**
 - Video of preferred activity
- **Provide easy access to wide range of vocabulary**
 - Easy to add hotspots
- **Supports turn-taking**
 - Pause in video (when hotspot arrives) is cue to take a turn



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“Two friends spending time together”: The impact of video visual scene displays on peer social interaction for adolescents with autism spectrum disorder.



Babb, S., McNaughton, D., Light, J., & Caron, J. (2021).

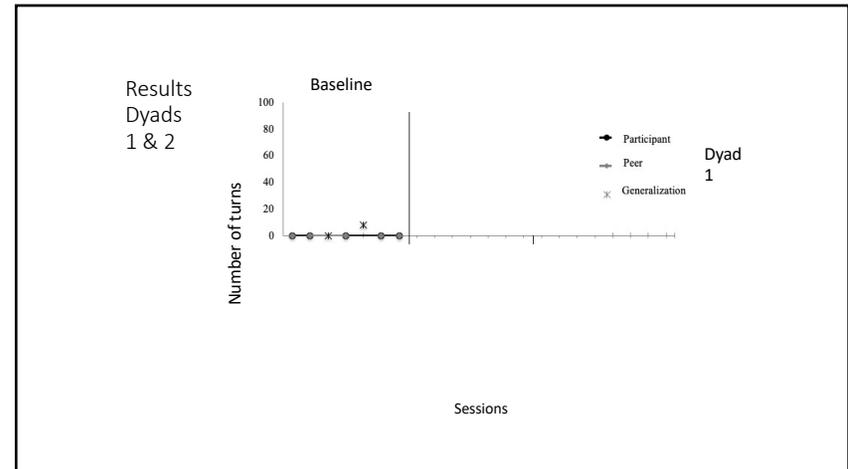
22

Dependent variable

- **Frequency of symbolic communicative turns** taken by the participants during a 10 min. interaction with a peer partner
 - Included spoken speech, signs/gestures, or AAC system (typical system; activation of a hotspot)



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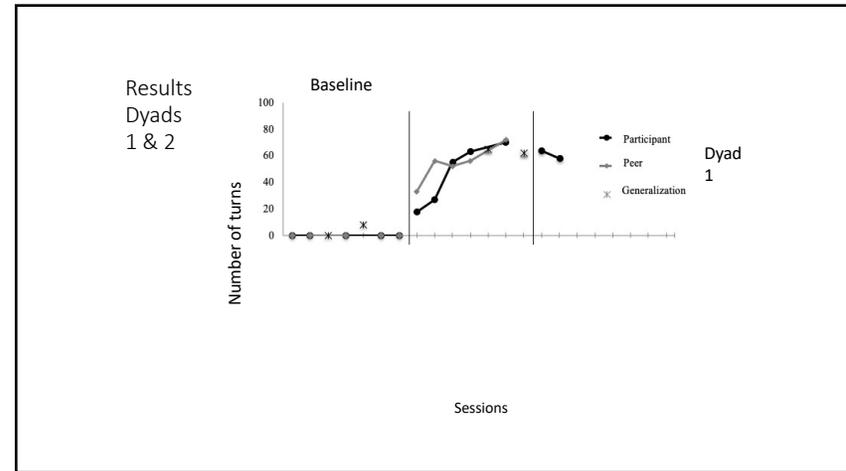
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Video VSDs

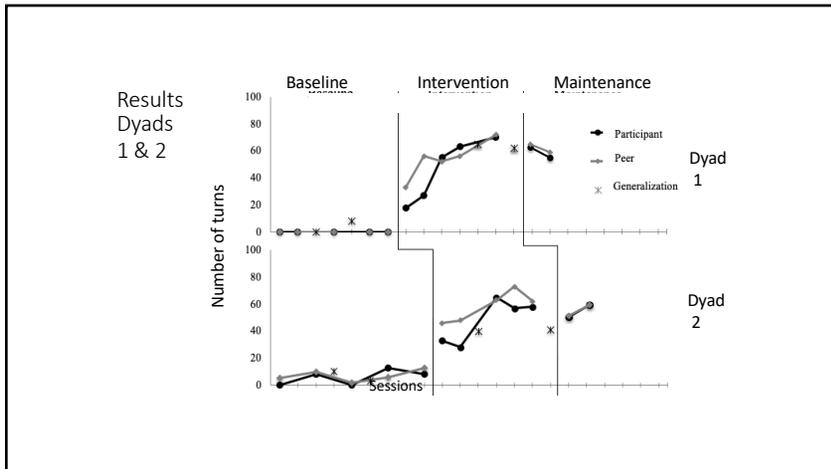
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 - Video of preferred activity
- Provide easy access to wide range of vocabulary
 - Easy to add hotspots
- Supports turn-taking
 - Pause in video (when hotspot arrives) is cue to take a turn




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Social Validity: Participants with ASD

- Talking Mats procedure
 - (Murphy, Gray, van Achterberg, Wyke, & Cox, 2010)
- All autistic participants indicated that they enjoyed using the video VSD app and interacting with their peer buddy



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Social Validity: Peers



• My buddy used to not say anything to me, I didn't think they wanted to talk to me. Now we have a relationship, **we are friends.**

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Social Validity: Staff



It (the video) took a lot of the awkwardness out of the interaction and it really ended up being **two friends spending time together.**

It was great to see our students communicating and enjoying their peer's company. They were actually **enjoying the interaction** and answering their peer.

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Your Turn



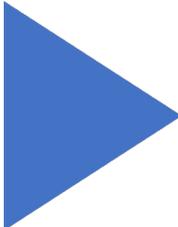
• **Sam**

- 21-years old
- Down syndrome
- Complex communication needs
 - intelligibility <10%
- LOVES the Philadelphia Eagles (National Football League)

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Your Turn: Making a Video VSD to support social interaction

- What would be in the video?
- Where would you insert "pauses"?
- Where would you add hotspots for communication?
 - What would the hotspots "say"?



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References

- Babb, S., Jung, S., Ousley, C., McNaughton, D., & Light, J. (2021). Personalized AAC intervention to increase participation and communication for a young adult with Down syndrome. *Topics in Language Disorders, 41*(3), 232-248. <https://doi.org/10.1097/TLD.0000000000000240>
- Babb, S., McNaughton, D., Light, J., & Caron, J. (2021). "Two friends spending time together": The impact of video visual scene displays on peer social interaction for adolescents with autism spectrum disorder. *Language, Speech, and Hearing Services in Schools, 52*(4), 1095-1108. https://doi.org/10.1044/2021_LSHSS-21-00016



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Apps



Attainment Company's
GoVISUAL

Snap Scene
Tobii-Dynavox

Scene & Heard
Therapy Box

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<https://tinyurl.com/rerconaac-VideoVSD>

Video Visual Scene Displays



A video visual scene display (VSD) approach combines the participation supports of video prompting with the communication supports of VSDs (Light et al., 2019). Using a specialized app, VSDs can be placed within a video – that is, the video plays, and then pauses to show a VSD. The appearance of the VSD acts as a cue to perform the behavior depicted in the video, and the VSD can also be programmed with hotspots to support communication. The hotspots in the VSDs can be used in two ways: some persons with complex communication needs use the speech output of the AAC device to communicate with others, while others use the speech output to cue use of their own speech in the interaction (O'Neill, Light, & McNaughton, 2017).

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