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Increasing Independence with AAC Video Visual Scene Displays

Salena Babb, David McNaughton, Janice Light, Kirk Wydner, & Lucas Pierce

Penn State University

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Learning Objectives

1. Define videos with integrated visual scene displays and describe at least 3 key components.
2. Identify the effectiveness of video VSDs to enhance participation in more than one vocational setting
3. Identify at least 2 clinical implications and 2 future research directions

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Speaker Disclosures

- The EasyVSD app was 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). http://rerc-aac.org

- 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

- Disclosure: The author has no relevant financial relationships or relevant non-financial relationships to disclose

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Challenge

- An average of 25% of people in the United States volunteer annually
  - Bureau of Labor Statistics, 2016
- Only 5.4% of those volunteers identified as having a disability
- Only 1.1% with a developmental disability
- Benefits of volunteering
  - Improved independence
  - Greater self confidence and self-esteem
  - Reciprocity and social capital among people in their communities
- Participating in volunteer activities provides opportunities for individuals with disabilities to develop and use knowledge and skills, while simultaneously cultivating social networks
  - Balandin, Llewellyn, Dew, & Ballin, 2006; Trembath et al.,2010

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Current AAC technologies

- Traditional AAC grid-based displays depict language concepts outside of the meaningful communication contexts

Riding the Bus

- Visual scene displays (VSDs) capture meaningful events within an individual's life in an integrated scene (i.e., photograph), with language concepts embedded as hotspots within the scene in order to reduce cognitive and linguistic demands (Light & McNaughton, 2012).
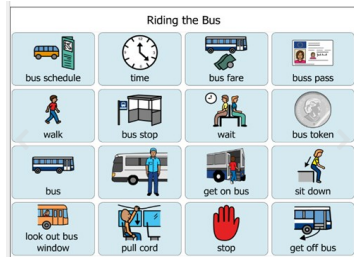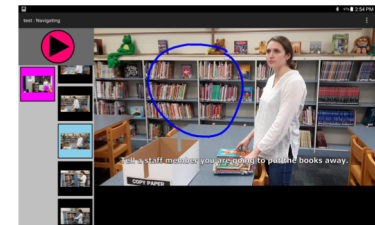

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Potential Solution

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- Videos with integrated VSDS – Video VSDs
  1. Provide contextual support for communication within real-world contexts
  2. Capture dynamic routines that support communication in real world settings

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Research Questions

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- What is the effect of the video VSDs on the percent of steps completed (including communication opportunities) during a volunteer vocational activity for four adolescents with complex communication needs?
- Are the skills maintained overtime?
- Is the intervention deemed effective, efficient, and socially valid by key stakeholders?

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Methods

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- Design: Multiple baseline across participants
- Stages: Baseline, Intervention, Maintenance
- Setting: School – packing backpacks
- Procedures
  - Baseline – no tablet or prompting
  - Intervention – video VSD app and instruction

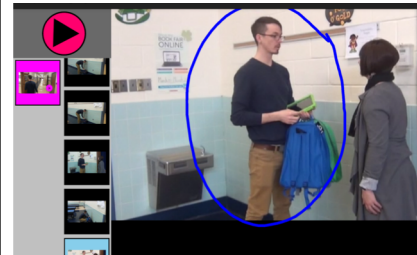ATiA 2019

Participants

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- Ivan: M, 16 yrs, ASD
- Jerry: M, 19 yrs, ASD
- Keith: M, 20 yrs, Down Syndrome
- Martin: M, 14 yrs, Down Syndrome

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Materials

- Operating the app

1. Press the play button
2. Watch the video segment portraying one step from the task analysis

- Tablet and App

3. Perform the step or fulfill the communication opportunity depicted in the segment
4. Select the thumbnail of the next video from the left menu
5. Repeat steps 1-5 for each video segment to complete the task

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Task Analysis

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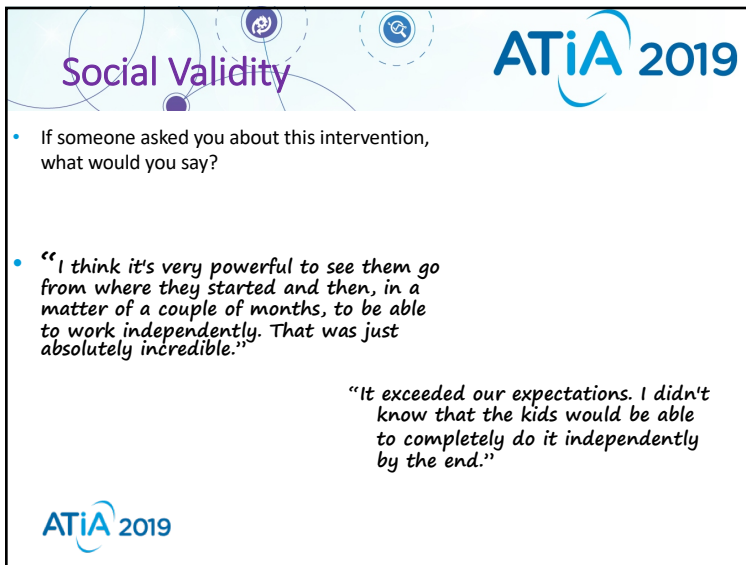
1. Enter the office
2. Greet secretary: **Hi, how are you?**
3. Respond to secretary: **I'm okay** (or sign/vocalization)
4. Ask to enter the storage room: **I'm here to fill the backpacks.**
5. Ask to be let in to the storage room: **Can you let me in the storage room?**
6. Thank secretary: **Thank you**
7. Enter storage room and pick up backpacks
8. Carry the backpacks to the cafeteria
9. Put the backpacks at the end of the table
10. Look at the menu

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Results
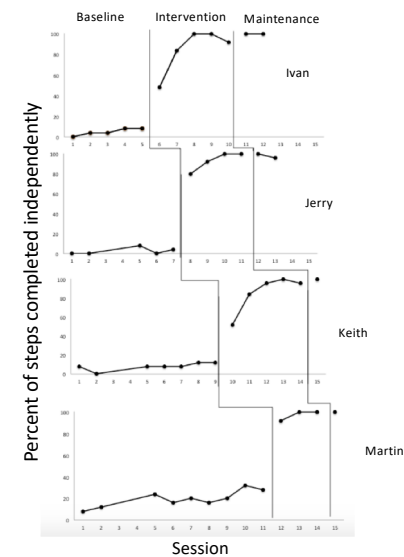
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Social Validity

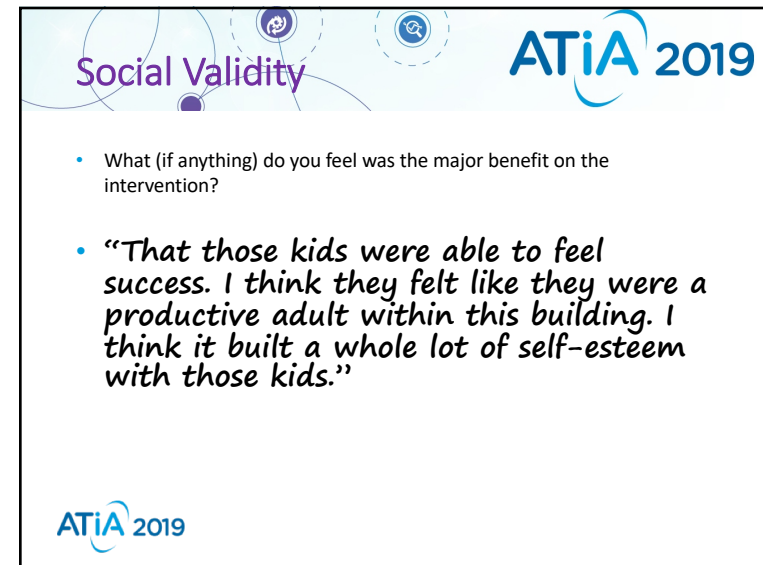- If someone asked you about this intervention, what would you say?

- "I think it's very powerful to see them go from where they started and then, in a matter of a couple of months, to be able to work independently. That was just absolutely incredible."

    "It exceeded our expectations. I didn't know that the kids would be able to completely do it independently by the end."
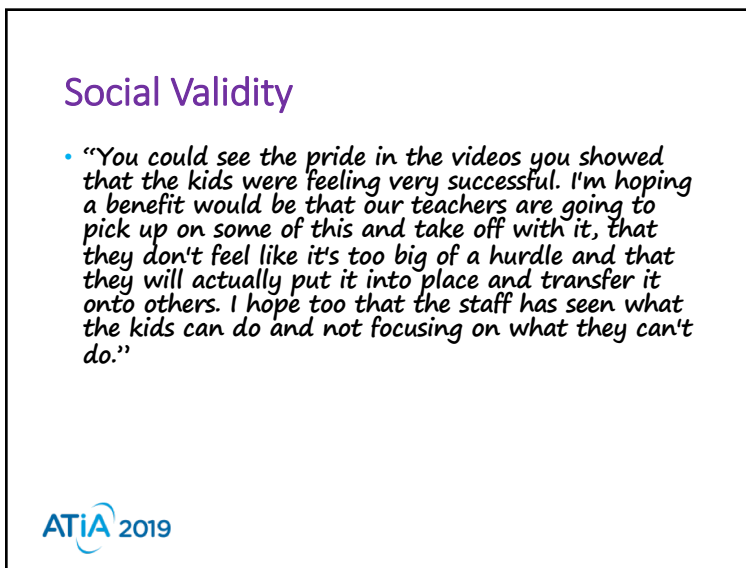
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Social Validity

- What (if anything) do you feel was the major benefit on the intervention?

- "That those kids were able to feel success. I think they felt like they were a productive adult within this building. I think it built a whole lot of self-esteem with those kids."
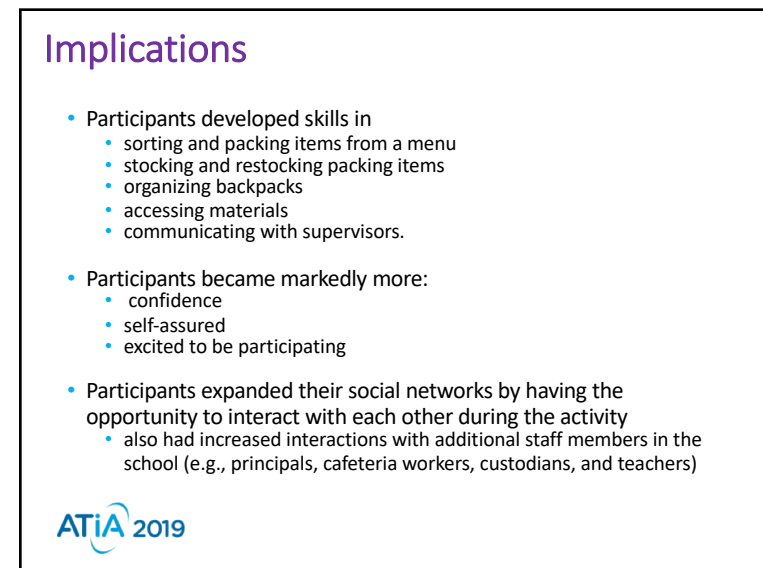
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Social Validity

- "You could see the pride in the videos you showed that the kids were feeling very successful. I'm hoping a benefit would be that our teachers are going to pick up on some of this and take off with it, that they don't feel like it's too big of a hurdle and that they will actually put it into place and transfer it onto others. I hope too that the staff has seen what the kids can do and not focusing on what they can't do."

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Implications

- Participants developed skills in
    - sorting and packing items from a menu
    - stocking and restocking packing items
    - organizing backpacks
    - accessing materials
    - communicating with supervisors.

- Participants became markedly more:
    - confidence
    - self-assured
    - excited to be participating

- Participants expanded their social networks by having the opportunity to interact with each other during the activity
    - also had increased interactions with additional staff members in the school (e.g., principals, cafeteria workers, custodians, and teachers)

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Implications

- Videos with integrated VSDs provide a way to seamlessly infuse video prompting and communication in order to increase participation and communication for individuals with disabilities and complex communication needs in real world contexts
- Benefits:
  - Increase independence
  - Increase social interaction opportunities
  - Increased opportunities for independent participation in meaningful community activities
- Volunteering enabled the participants to be providers, rather than recipients of community service

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Technologies currently available

- Snap Scene

Supports the use of still VSDs with embedded hotspots

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Speaker Information

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- Salena Babb
  - Doctoral Candidate
  - Special Education

Babb.Salena@gmail.com

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