Using Video VSDs to Support Transition Goals for Young Adults with Complex Communication Needs

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RERC *on* AAC

Disclosures

Outline

▶ Communication and participation barriers
▶ Employment and transitions
▶ Video VSDs
▶ 3 Examples of video VSDs in work contexts
  ○ Independent living – cooking
  ○ Work skills – greenhouse task
  ○ Life skills – grocery shopping
▶ Summary
▶ Q&A

Outline

▶ **Communication and participation barriers**
▶ Employment and transitions
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Participation goals

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

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
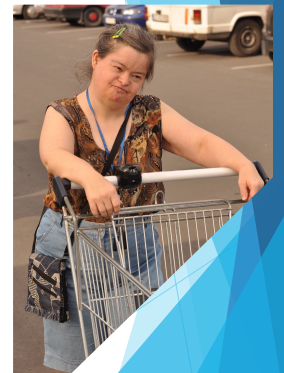
Key Features for Communication Supports

- 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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Employment as Goal-Enabler

GOAL

Getting:
- Freedom
- A house
- Someone
- Socializing

Importance of Employment and Goals

Raising Expectations

Same goals everyone wants
High expectations!

Challenging "Unemployable"

The definition of "Employment" can be beyond a structured relationship where individuals work for an employer under a contract, receiving wages or salary and often benefits such as healthcare and retirement plans.

Employment offers stability in terms of income and job security, with defined roles, responsibilities, and career progression opportunities within a competitive job market.

Income-generating activities encompass a variety of economic pursuits such as self-employment, freelancing, or gig work, offering flexibility in work hours and tasks but often without the benefits and protections of formal employment.

Both employment and income-generating activities are essential for economic participation, catering to different preferences for stability, autonomy, and work-life balance among individuals with various skills and circumstances.

The Research

People who benefit from AAC and their families have goals for life after high school (Bryen & Moulton, 1998).

More than 95% of individuals with complex communication needs (CCN) are unemployed (Light & McNaughton, 2015).

Barriers Faced

- Societal prejudice / attitudinal barriers
- Educational barriers
- Technological barriers
- Policy and funding
- Personal care / support service
- Transportation (McNaughton, Light, & Arnold, 2002)
- Social interactions
- Expression of emotions and behavior
- Use of AAC technology
- Changes in schedules and routines
- Acquisition of new skills
- Provision of employment supports (Richardson, McCoy, & McNaughton, 2019)

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Video visual scene display (vVSDs)

- Video modeling 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

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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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Independent Living: Cooking (Case 1)

- Apartment Program
  - For transition-age students in local HS
  - Practice ADLs and independent living
    - Caring for yourself and your space

- "Bryce"
  - 18, IDD

Making a Pizza to Share (14 steps)

1) "Can you help me make a pizza?"
2) Walk to oven
3) Enter numbers on oven and press 'start'
4) "Did I get it right?"
5) Wash hands
6) Get out tray, place on counter. Get pizza from freezer, unwrap and place on tray
7) "I am going to put it in the oven"
8) Put on oven mitts and put pizza in oven
9) "Did I do it right?"
10) "Hey Siri, set the timer for twelve minutes"
11) "I am going to take the pizza out of the oven"
12) Put on oven mitts, take pizza out of oven. Get plates
13) Put on oven mitts, get spatula and put pizza on plate
14) "The pizza is ready; do you want some?"


Scoring Criteria

Participant scoring:
► Participant starts out with 0 and receives a point for every task they perform accurately and within standards and given time frame

Interventionist scoring (treatment integrity):
► Interventionist starts out with "perfect" score, then loses a point each time he does not do what he should.
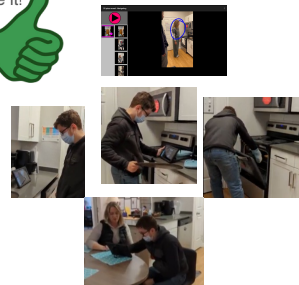 ► Ex) If there are 20 steps, interventionist makes 1 mistake, he gets 95% (19/20)

Cooking Data

- Probe 1: Baseline
- Probe 2: Baseline
- Probe 3: Video VSD
  ○ Included 7 communication opportunities

Making a Frozen Pizza to Share with a Housemate

■ Bryce's accuracy
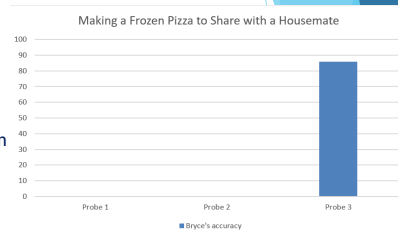
Social Validity: Cooking

Yes, I like it!

No, I do not like it!

Work Skills – Case Study

► ACRES
  ► Community program for adolescents and adults with ASD (IDD)
  ► Learn vocational and transition skills

► "Carson"
  ► 22, ASD

Greenhouse (19 steps)

Meet in house, give instructions
1) Walk to greenhouse
2) One spoonful of fish food, spread around the top, watch to see they eat it, put fish food scoop away
3) Get ruler, pencil and book, sit down by area 1 with tablet
4) Plant 1 : write down plant name, measure plant, write down information (copy names on a new row),
5) Plant 2: write down plant name, measure plant, write down information (copy names on a new row),
6) Plant 3 : write down plant name, measure plant, write down information (copy names on a new row),
7) Plant 4 : write down plant name, measure plant, write down information (copy names on a new row),
8) Carry ruler, pencil and book, sit down by area 2
9) Plant 5 : write down plant name, measure plant, write down information (copy names on a new row),
10) Plant 6 : write down plant name, measure plant, write down information (copy names on a new row),
11) Plant 7 : write down plant name, measure plant, write down information (copy names on a new row),
12) Plant 8 : write down plant name, measure plant, write down information (copy names on a new row),
13) Put ruler, pencil and book away
14) Pick up big hose
15) Sweep the floor with big broom,
16) Pick up with small broom, place dust in garbage,
17) Walk to house
18) "I measured the plants and wrote it down"
    a. That's great,
19) Ask "what should I do now?"
    a. Becca/Bella: Do you want to do more work or take a break?

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Interventionist scoring (treatment integrity):

▶ Interventionist starts out with "perfect" score, then loses a point each time he does not do what he should.
  ▶ Ex) If there are 20 steps, interventionist makes 1 mistake, he gets 95% (19/20)

Greenhouse Data

▶ Probe 1: Baseline
▶ Probe 2: Baseline
▶ Probe 3: Video VSD
  ▶ Including 2 communication opportunities
    ▶ "I measured the plants and wrote it down"
    ▶ "What should I do now?"

Steps Completed (n=19)
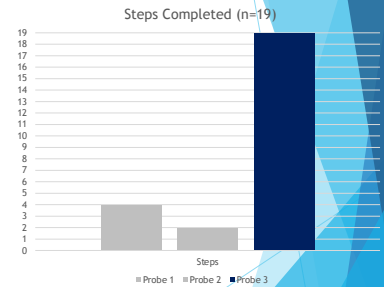
Sam

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

Process of making a video VSD

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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.

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

Using the video VSD app

8. Navigate to item 3 (deli counter)

9. Talk to the clerk (**"Hi, how are you?"**)

10. Talk to the clerk (**"I would like a quarter pound of 'Dietz & Watson'**

American cheese sliced thin.")

11. Talk to the clerk ("**That's good"**)

12. Talk to the clerk (**"No, thank you"**)

13. Talk to the clerk (**"Thank you! Have a great day"**)

14. Take the item from the clerk

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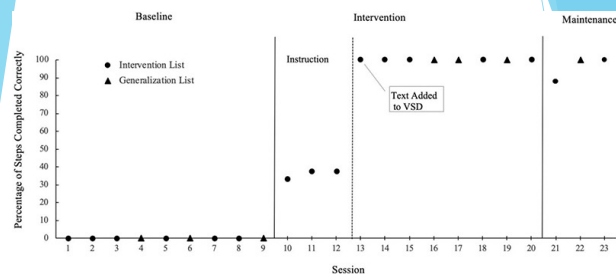

Video VSD

▶ 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
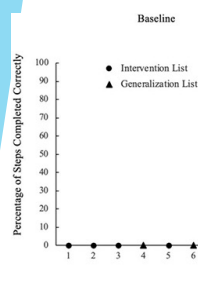
Regular shopping list: Taco shells, 2 bananas, American cheese

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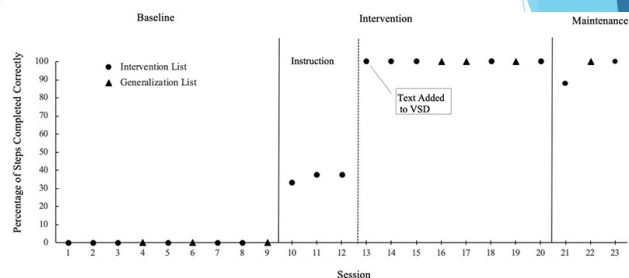
Regular list: Taco shells, 2 bananas, American cheese (Dietz & Watsons)

• Regular list: Taco shells, 2 bananas, American cheese (Dietz & Watsons)
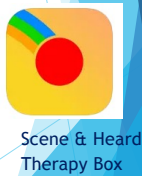• Generalization list: Yogurt, 2 green apples, Turkey (Weis premium honey)

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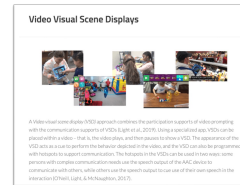 - ○ Life skills – grocery shopping
- ▶ **Summary**
- ▶ Q&A

Summary

- ▶ Support independent performance of complex, multi-step skills in community settings
- ▶ Easily learned and used by persons with IDD
- ▶ Provide communication assistance as needed
- ▶ Make use of highly portable, commonly available supports (e.g., people, technology)
- ▶ Easily developed for individually selected goals by familiar support providers (e.g., family members, group home workers)

Available in these apps

Snap Scene
Tobii-Dynavox

Attainment Company's
Go VISUAL

Scene & Heard
Therapy Box

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 use use of their own speech in the interaction (O'Neill, Light, & McNaughton, 2017).

Continuing Education Opportunities

AAC Learning Center

RERC on AAC

ASHA CEU Opportunities

RERC-AAC.PSU.EDU

NiDILRR
National Institute on Disability, Independent Living,
and Rehabilitation Research

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Questions?