The effect of the video VSDs on communication and participation for individuals with complex communication needs

McNaughton, D., Stroschein, R., Light, J., Jakobs, E., Liang, Z., Dobrzynski, C., Laubscher, E., Holyfield, C., Allen, A., Rackensperger, T., Vege, R.

ASHA 2023 Convention, Boston, MA, United States.

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Link to information on Video VSDs:
https://sites.psu.edu/aaclearningcenter/educational-resources/video-visual-scene-displays/

Although an increasing number of adults with complex communication needs live in community settings (Boland et al; 2023; Mirenda, 2014), they often have only limited participation in community activities (Rossetti et al., 2016; Shea et al., 2021), and they are less likely to be employed (U.S. Department of Education, 2011). As a result of this limited community engagement, adults with autism spectrum disorders (ASD) or intellectual and developmental disabilities (IDD) have fewer friends and social interactions (U.S. Department of Education, 2011), are more likely to report feelings of loneliness (Stancliffe et al., 2010), and are more likely to be unemployed or underemployed (Carter et al., 2012) than are individuals without disabilities.

To live successfully in the community, adults with ASD or IDD may require supports for both participation and communication. Supports may be needed to successfully participate in and complete complex multistep community (e.g., grocery shopping, riding public transportation) and vocational activities (e.g., working in a restaurant). Often these skills were not addressed within their educational programs, or

transition to a new situation necessitates learning new skills (Cannella-Malone & Schaefer, 2017). As a result, autistic persons or persons with IDD often remain dependent on prompting from an aide to participate in the community or complete vocational tasks (Gilson et al., 2017).

Communication supports are also needed by the more than 2.5 million adults in the United States with ASD or IDD who require AAC in order to interact effectively with both familiar and unfamiliar communication partners (Andzik et al., 2018). Despite the need for AAC, fewer than 225,000 (less than 9% of the adults with ASD and/or IDD who have severe difficulty with speech) have access to any form of aided or unaided AAC (Stancliffe et al., 2010). For those provided with AAC, the systems are often underutilized or abandoned because the AAC technology does not include needed vocabulary (Bornman & Bryen, 2013), is difficult to learn and use (Johnson et al., 2006), and does not support participation in community life (Light & McNaughton, 2015).

Video visual scene display (Video VSD) technology may provide a feasible and practical support for both participation and communication by adults with ASD or IDD in community and employment activities. In a Video VSD intervention, a communication support partner first captures a video of someone accurately performing the target activity (e.g., taking an order at a coffee shop), and imports the video into the Video VSD app. Simply by pausing the video within the app, the communication support partner creates a still image at key junctures in the video (e.g., accepting a debit payment from the customer). This still image is then easily programmed as a Visual Scene Display (VSD) using the app. Communication “hotspots”, which provide speech output when touched, are programmed onto the VSD, so that the individual with CCN has access to appropriate vocabulary as needed. It is quick and easy to record video of the task, and it takes only seconds for a communication support partner to pause the video after each step to create a VSD. The size of the video image and the hotspot can be customized to meet the visual and motor requirements of the user.

To use the Video VSD app, the individual with CCN (a) touches a video “thumbnail” in the VSD app to select the target activity (e.g., taking an order), (b) touches the “play” button, (c) watches and then imitates the video model of the first step in the target activity, (d) uses the hotspots in the VSDs to communicate as needed, and (e) moves on to the next step until all steps are completed. The Video VSD app provides a quick, easy, and integrated method of supporting both participation (i.e., a video model of task completion) and communication (i.e., the VSD) (Babb et al.,

2019, 2020, 2021; O'Neill et al., 2017).

Preliminary showed promising results for a Video VSD approach as a means to support vocational and community participation for adolescents with ASD or IDD (Babb et al., 2019, 2020; O'Neill et al., 2017). For example, four individuals with ASD or IDD initially demonstrated very low levels (average = 9%) of successful participation and communication in volunteering at their local food bank. The participants quickly learned targeted participation and communication skills after a short Video VSD intervention, (average = 97%) (Babb et al., 2020).

While this preliminary research suggests that Video VSD technology can support successful participation and communication outcomes for individuals with ASD or IDD, to date the research is limited to only a small number of participants, in a small number of settings. During 2022-25 the Rehabilitation Engineering Research Center on Augmentative and Alternative Communication (RERC on AAC) has investigated the impact of a Video VSD approach, using a switching replications design, with over 20 adolescents and adults with ASD and IDD in employment, post-secondary education, and community living activities.

This presentation will focus on preliminary results from this large-scale investigation, including the impact of the Video VSD intervention on the participation and communication performance of 22 adolescents and adults with ASD or IDD in a wide variety of community settings. We will provide a summary of the intervention and results gathered to date, including the steps in the development and use of Video VSDs, as well as data for pre- and post-intervention performance. Data on social validity, as reported by the participants in the intervention as well as other key stakeholders (e.g., family members, employers, co-workers), will also be reported.

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