

Rationale

- Traditional high-tech AAC devices are commonly organized in a grid format, which may not be the most effective layout for many communicators
- Visual scene displays (VSD) and video visual scene displays (vVSDs) offer an alternative to traditional grid displays that provide contextual images and videos of meaningful events to children (Holyfield et al., 2017, 2019; Light et al., 2019; McCarthy & Boster, 2019)
- Commonly used on tablet devices, VSDs offer the ability to program “hotspots” that provide opportunities for expressive communication via speech output production
- Transition to Literacy (T2L) is a feature used to promote literacy development by the appearance of dynamic animated text upon the selection of a graphic symbol using motion (Jagaroo & Wilkinson, 2008)
- Despite VSDs being used increasingly in early childhood, no synthesis of VSD studies with early childhood (3-8 years old) exists to examine the evidence-base of VSDs



Research Questions

- Does the research literature on VSDs and video VSDs meet the CEC standards for EBP with young children in early childhood settings?
- What is the reported social validity for VSD and video VSD interventions according to early childhood professionals, parents, peers, and participants?

Methods

- A systematic literature review was conducted on ProQuest, PsycINFO, Web of Science, Google Scholar
- Inclusion criteria: Early childhood (3-8 years old); developmental disability associated with difficulty with spoken language, use of high-tech VSD or vVSD as an independent variable; a communication skill as a dependent variable
- Interrater reliability was calculated as 97% agreement

Visual Scene Displays



Figure 1. Example of Visual Scene Display (VSD) with Transition to Literacy (T2L) feature

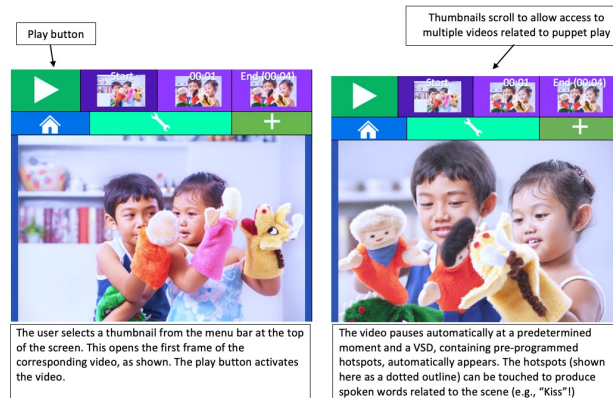


Figure 2. Example of a video VSD, created using the GoVisual™ app, to support playing with puppets

Results

Quality Indicators	Boyle et al. (2017)	Boyle et al. (2021)	Chapin et al. (2022)	Coore et al. (2015)	Gevarter et al., (2014)	Gevarter et al., (2017)	Gevarter et al., (2018)	Gevarter et al. (2020)	Lambert et al. (2019)	Lambert et al. (2022)	Mandak et al. (2019)	Therrien (2021)	Therrien & Light (2016)	Therrien & Light (2018)
1.0 Context and setting	+	+	+	+	+	+	+	+	+	+	+	+	+	+
2.0 Participants	+	+	+	+	+	+	+	+	+	+	+	+	+	+
3.0 Intervention agent	+	+	+	+	+	+	+	+	+	+	+	+	+	+
4.0 Description of practice	+	+	+	+	+	+	+	+	+	+	+	+	+	+
5.0 Implementation fidelity	-	+	+	+	+	+	+	+	+	+	+	+	+	+
6.0 Internal validity	+	+	+	+	+	+	+	+	+	+	+	+	+	+
7.0 Outcome measures	-	+	+	+	+	+	+	+	+	+	+	+	+	+
8.0 Data analysis	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Effects	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Total Quality Indicators met	6	8	8	8	8	8	8	8	8	8	7	8	8	8

Table 1. CEC Evidence-Based Practice Quality Indicators Met and Unmet for All Identified Studies (n=14)

- Fourteen studies met the inclusion criteria (n=14); twelve met all CEC quality indicator standards (n=12)
- With 42 total participants across 12 studies, VSDs met evidence-based practice criteria
- Most common dependent variable was symbolic communicative turns taken by participants (n=6)
- Most common independent variable was VSD (n=9), followed by video VSD (n=3)
- Most common context for VSD intervention was storybook reading (n=5)
- Nine of the 12 studies reported social validity data (n=9); most of which reported positive perceptions and outcomes of VSDs

Discussion & Implications

- VSDs can provide effective support for the development of communication and social skills of young children with a variety of disabilities, including ASD, developmental disabilities, language delays, etc.
- Teachers, parents, and researchers should consider VSDs as communication supports for social interactions and communicative development

Acknowledgements

The contents of this presentation were developed under a grant from the U.S. Department of Education (H325D220021), and a grant from the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR grant number #90RES017) 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

References

