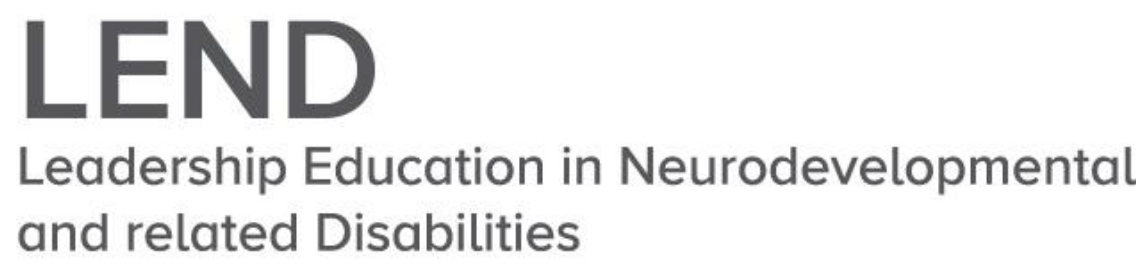


Social Validity of Technology Assisted Language Intervention for Children who are Deaf or Hard-of-Hearing

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Background

- Children who are Deaf or Hard-of-Hearing (DHH) are at-risk for language delays and possible language impairments which can impact social and communication functioning (Meinzen-Derr et al., 2013 Coch Imp Intl; 2014 J Dev Behav Pediatr).
- Technology Assisted Language Intervention (TALI) is a novel approach that focuses on the feasibility of using augmentative and alternative communication (AAC) as an intervention for children who are DHH.
- Results from a recent pilot study of TALI (Meinzen-Derr et al., 2016) suggest that TALI may be a viable intervention approach for enhancing language development. We are studying the accessibility and feasibility of this novel approach to **supplement current interventions** for children who are DHH.
- Data were used to design a large-scale randomized control trial comparing TALI to traditional therapy for children with hearing loss. This 3-year study has been funded by the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR). Participants include children 3-12 years old with bilateral sensorineural hearing loss and a gap between non-verbal IQ and receptive language.
- Social validity** broadly refers to the concordance between the measurable outcomes of an intervention and the goals, needs, and preferences of the recipients and interventionists who deliver it (Wolf, 1978).
- Parents** of children receiving AAC interventions often perceive a mismatch between their goals and their providers' understanding of their child's communication and social needs (Calculator & Black, 2010).
- Providers** may also be unaware of barriers that interfere with the generalization of an intervention's success to other environments, such as a **child's home or school environment (Punch & Hyde, 2011)**.

Purpose and Aims

- The purpose of this study was to investigate the social validity of TALI for children who are DHH. A secondary purpose was to assess perceived feasibility of TALI in different school settings.
- Qualitative data were gathered from the parents of children enrolled in TALI to understand their perspective on the use of this intervention outside of therapy (e.g., school, home, community).
- Our aims for this study were to complete a literature search of social validity in relation to using AAC devices to support communication with children who are DHH.
- This information will be incorporated into a publication that reports focus group data from the past two years.

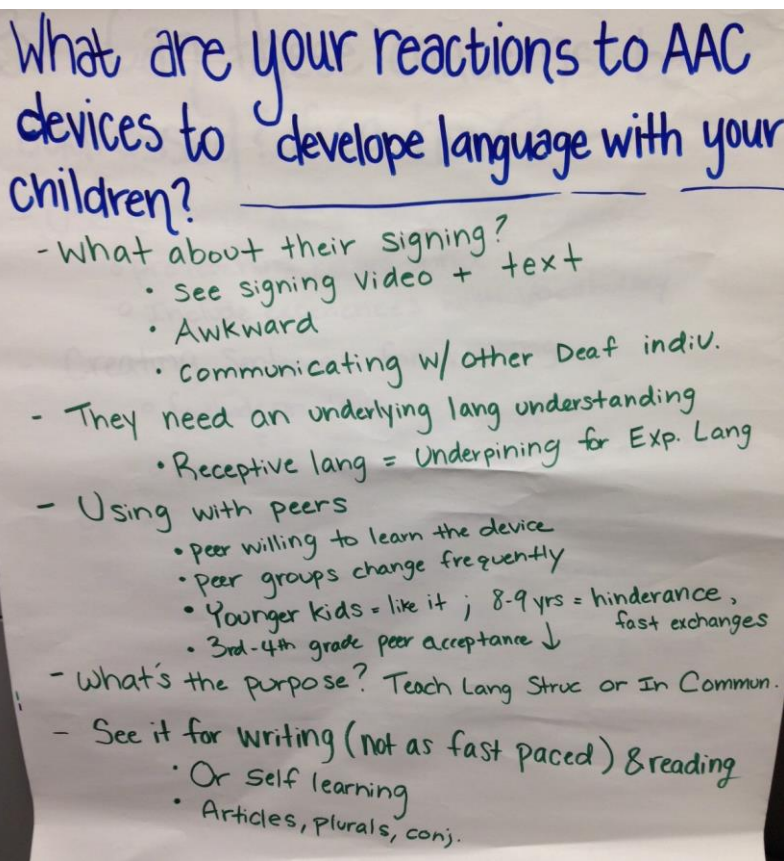
Methods

Participants:

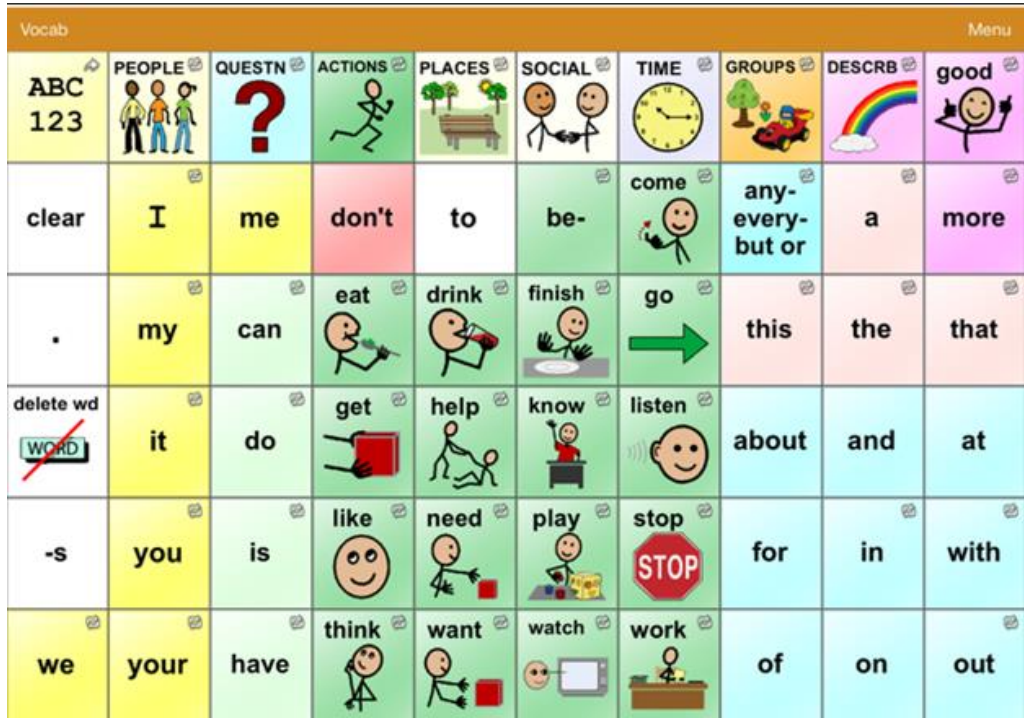
- Audiologists
- Speech-Language Pathologists
- Educators of children who are DHH
 - Settings: Public school, Ohio Valley Voices, St. Rita School for the Deaf
- Representatives of the Audiology Family Advisory Council at CCHMC
- Families of children who are DHH

Data Collection:

Uniform questions were used to conduct ongoing family interviews by telephone or email. Predetermined small and large group questions were discussed during two separate professional focus groups. These responses were documented through written means and recorded audio.



Figures 1 and 2. Examples of parental reactions to use of AAC devices and example of WordPower communication page used in TALI



Data Analysis:

Qualitative analysis of the focus groups was conducted by graduate students (n = 6) and researchers (n = 2) in a consensus approach.

Results

Family Members

Pros

- Increased quality and quantity of verbalizations
- Improved verbal and written grammar and syntax
- Increased use of vocabulary
- Found iPad® easy and fun to use
- Incorporated into interactions with family members and close friends

Cons

- Difficulty implementing when the child was fatigued or frustrated
- Difficulty prioritizing time using TALI at home
- Difficulty implementing at school due to lack of knowledge or resources
- Difficulty incorporating with peers at school
- Technology issues (charging, resetting, freezing, troubleshooting problems)

Professionals

Pros

- Useful for mainstreamed children who primarily use verbal expression
- Teaching academic concepts such as writing, drafting emails, vocabulary, etc.
- Aid for families that do not use sign language with their child

Cons

- Slow pace of communication
- No corrective feedback provided by the device
- Work and time intensive to train the child to use the device
- Disrupting sign language

Figure 3. Summary of feedback about the TALI pilot study from professionals and family members of children who participated in the intervention.



Solutions to Barriers for Families and Providers

- Provide technical support and ongoing training (written or video)
- Useful for mainstreamed children who primarily use verbal expression
- Teaching academic concepts such as writing, drafting emails, vocabulary, etc.
- Aid for families that do not use sign language with their child
- Video and paper tutorials, "cheat sheets"

Conclusions

- Parents reported that TALI was feasible in home and therapy settings. Professionals reported that TALI may be more challenging to implement with students in a manual or total communication academic setting.
- However, professional partners indicated TALI may be beneficial for supplementing reading and writing curricula.
- Successful use of TALI devices by parents can be encouraged by providing additional supports for parents and providers.
- Results suggest that TALI is a socially valid intervention that shows promise as a supplement to existing interventions for children who are DHH.

Future Directions

- Complete manuscript describing the social validity of the TALI intervention.
- Utilize knowledge from manuscript to develop strategies to enhance the feasibility of TALI across settings, such as supports for parents to assist with implementation (e.g., videos, troubleshooting instructions).
- Assess the long-term effectiveness of TALI beyond the intervention itself by following up with families to assess progress in speech and language development.

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