Iterative Cycles of Design Research in Co-Design of a Spoken Language Assessment Tool for Teachers of the d/Deaf and/or Hard of Hearing

Rachel Benninger & Lisa Archibald
School of Communication Sciences and Disorders, University of Western Ontario
rbraun6@uwo.ca; @r_benninger

Introduction

- Children who are d/Deaf and/or Hard of Hearing (DHH) often have difficulty with language and literacy, and require an adapted curriculum and additional support in the classroom.
- Specialist Teachers of the DHH have additional specialized training and provide regular support to DHH students, but need to be equipped with the appropriate resources to support these students.
- Resources for assessment of curriculum-based spoken language skills in DHH students are often limited.

Objective

- To develop a bespoke curriculum-based spoken language assessment tool for use by Specialist Teachers of the DHH.

Methods

- Using a design research approach, researchers collaborated with Specialist Teachers of the DHH, educational Speech-Language Pathologists, and Educational Consultants of the DHH to iteratively design, test, and improve an assessment tool.
- A prototype was developed with four components: vocabulary, morphological awareness, sentential syntax, discourse
- Input from participants was provided via focus groups, interviews, and a Qualtrics form and directed prototype design and further development of the tool through iterative cycles of feedback and revisions.

Results

- Feedback was provided for each of the components and the tool as a whole. Feedback focused on both the content of the tool as well as the nature of the tool and its ease of use. See Table 1.

Figure 1. Phases of the Project

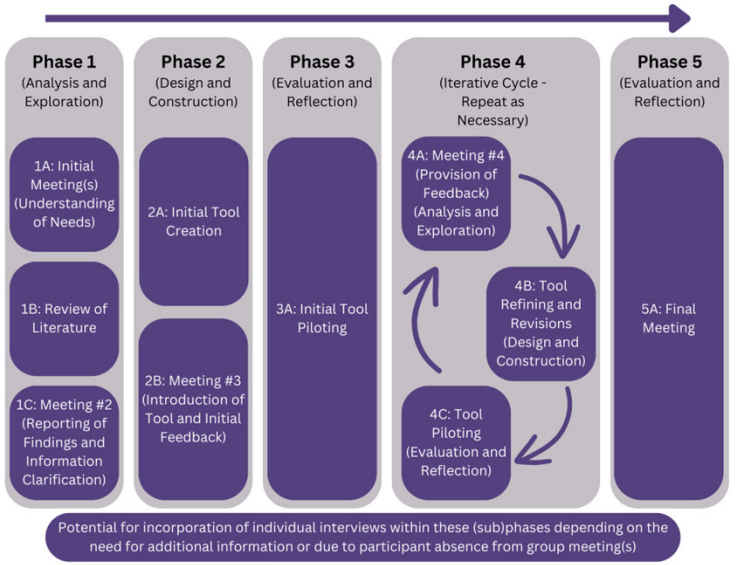

Table 1. Feedback from Participants

Tool Component	Content	Nature	Ease of Use
Vocabulary	• Separation of language and literacy pieces within tasks • Addition of visuals to support students	• Organization of vocabulary items into three tiers based on type of vocabulary	• Clarification of the instructions for the task implementation • Explanation of vocabulary tiers
Morphological Awareness	• Addition of more task items for each type of morpheme (e.g., plural –s) • Addition of more example tasks • Addition of visuals to support students	• Organization of task items into a developmental ordering	• Adjust the structure of task items (e.g., locate the word to be manipulated at the end of the sentence) • Clarification of the instructions for the task
Sentence Combining	• Addition of more task items for the lower-level sentence types • Addition of 'student plates' to provide written support for task	• Organization of task items into a developmental ordering	• Make the document more user-friendly and more printer-friendly (e.g., word doc/pdf instead of spreadsheet)
Discourse	• Addition of visuals to accompany tasks • Addition of model responses	• Including a variety of task items to accommodate students who may perform lower	• Clarification of instructions for students • Clarification of interpretations of student responses (e.g., what does it mean?)
Overall Assessment Tool	• Addition of a summary form (e.g., What does this mean? What next?) • Inclusion of sample IEP goals • Guidance for the types of prompts and supports to provide the student	• Font type (e.g., a vs ɑ, g vs ɡ) • Font size (e.g., increase when text may be provided to student as support)	• Make documents available as both word and (fillable) pdf files • More space to write responses/notes • More effective way to note prompts and supports used with the student

Future Directions/Implications

- Using knowledge gained from development of the assessment tool, a set of corresponding summary forms have been developed, and an accompanying intervention tool may also be developed.
- Specialized end-users can provide valuable insight into the usability of curriculum-based spoken language assessment tools based on their use in real-world contexts, resulting in tool improvement.
- This project provides a framework for collaborative teams to develop bespoke clinical tools and answers important questions about curriculum-based language assessment and intervention in DHH students.

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