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“I Tell You a Story”: Using Narrative Re-Tell to Assess AAC Competencies

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Abstract

This study pilot-tested a protocol for evaluating augmentative and alternative communication (AAC) competencies. The Renfrew Bus Story stimulus materials—a wordless picture book with an accompanying script—were used to elicit competencies suggested on the InterAACT Framework Dynamic AAC Goal Grid (the Grid). The Grid is a matrix checklist of skills inventoried under communicative ability levels (emergent, context dependent, and independent) and across AAC competence domains (linguistic, operational, social and strategic). Three speech generating device (SGD) users heard and then re-told the bus story to familiar partners, who served as naïve “listeners” without access to the story script or illustrations. Exhibited competencies were noted on the Grid and amounts of cueing required were documented. Through interviews, listeners provided supplemental information of users’ skills. This protocol suitably provided an objective measure of narrative ability, operational and linguistic AAC competencies, revealing differences in participants’ abilities. It did not, however, provide sufficient opportunities for documenting social or strategic competencies. Recommendations for improving the protocol are discussed.

BACKGROUND

Light (1) proposed four domains of augmentative and alternative communication (AAC) competency: linguistic, operational, social, and strategic. Expanding upon these concepts, Light, Beukelman, and Reichle's comprehensive textbook discusses AAC competencies in view of intervention but not necessarily clinical assessment (2). Specific AAC competencies have been used as independent or dependent variables in some

studies (e.g., 3, 4). However, few, if any, general evaluative clinical protocols exist to measure AAC competencies. The InterAACT Framework Dynamic AAC Goal Grid (the Grid) is described as a systematic way for evaluation and progress monitoring of AAC competence goals (5). The Grid is a matrix checklist of a hierarchy of skills under each communicative ability level (emergent, context dependent, and independent) and across each AAC competence domain (linguistic,

operational, social and strategic). Unfortunately, to fill out the Grid one must either know the AAC user personally or ask informants for relevant examples. The challenge is to employ a standardized, objective means for eliciting and documenting the presence of these skills.

This study pilot-tested a protocol for observing AAC users in a narrative story re-tell task and evaluating the four AAC competencies exhibited, using the Grid. Results from this project informed a larger study where children used speech generating devices (SGD) to control infrared robots and talk about math curriculum activities. The assessment was performed so investigators unfamiliar with the participants would have appropriate expectations relative to participants' overall linguistic and AAC competencies.

PARTICIPANTS

Three SGD users re-told a story to their familiar conversation partners, who served as naïve "listeners." Using familiar partners provided the best-case scenario for the participants' success in the re-tell task and allowed investigators opportunities to observe typical user strategies. Each participant activated two Spec(TM) switches, located at either side of their wheelchair headrests, to scan their Vanguard(TM) II SGD vocabulary arrays. P1, a 14-year-old girl with 2 ½ years experience using her SGD system, used row-column scanning to access Unity(TM) 45 Full vocabulary with a re-arranged icon layout. Her Education Assistant (EA), with whom she had worked for one school year, served as her listener. P2, a 12-year-old girl, accessed Unity 84 Sequenced vocabulary by quarter-row-column scanning. She had approximately three months' experience with Unity 84, and six years' prior experience with Unity 45 Full, a related vocabulary. Her mother served as her listener. P3, a 10-year-old boy with five years' experience using his SGD, accessed Unity 45

Full by row-column scanning. His EA, with whom he had worked for five years, served as his listener.

MATERIALS

The Renfrew Bus Story was used to obtain a language sample from the participants (6). This narrative recall screening tool, designed for children ranging from 3;6 to 7 years of age, utilizes a wordless picture booklet.

The researchers focused on specific skills listed in the Grid. Skills deemed superfluous or irrelevant to the larger study were deleted from each of the competency domains (linguistic e.g., "Understands and uses symbols to reference time, such as 'today'", operational e.g., "Takes care of AAC device and components", social e.g., "Uses polite social forms", and strategic e.g., "Signal a topic change with appropriate message"). All emergent communicative ability level skills were eliminated, as they were subsumed in the participant selection criteria. Hence, 21 out of 105 Grid items were chosen for examination.

The automatic data logging feature of the Vanguard SGD captured and time-stamped message output from the story re-tell. Logfiles were retrieved for analysis. Two videos were taken, one framing the interaction between participant, listener and SLP, the other framing the SGD dynamic display.

METHODS

Unbeknownst to the listener waiting outside the room, a speech language pathologist (SLP) twice read the bus story script and showed the story pictures to the participant. The SLP instructed the participant that when the listener returned, the participant should (1) tell the listener what was going to happen and then (2) re-tell the story. During the re-tell, the participant had access to story illustrations--but not the textual script--as plot reminders. The listener was permitted to ask the participant

questions and use whatever communication strategies they would normally use. The participant was allowed to ask the SLP for assistance.

To assess communication effectiveness and "listener" comprehension, the listener was then asked to repeat back the events of the story. The SLP interviewed the listeners to obtain additional information/examples that demonstrated participants' competencies for the designated Grid items.

The SLP analyzed the participants' stories, not by the Renfrew rubric, since the normed sample excluded children with disabilities, but according to content, sentence length, and linguistic complexity.

The Grid competency events were coded by the SLP by analyzing the logfile while watching the videos. Evidence of competency skills from logfile and video analysis were documented on the Grid, along with reported examples from interviews. The SLP documented the amount and nature of cueing provided by the test administrator and/or listener. The listeners' recounting of the story was transcribed from the videos.

RESULTS

The following are examples of each participant's message output.

Directing the listener about what was going to happen:

P1: EA_name you ? . Listens

P2: I tell you a story

P3: I'm going to tell you a story.

The first two sentences of the story script, "Once upon a time there was a very naughty bus. While his driver was trying to fix him, the bus decided to run away."

P1: Bus driver want fix Bus drive

P2: a bad bus ran from his driver

P3: It is about the noty bus. The guy was trying to fix him but he drove away.

P1 required the most variety and frequency of cueing on the Grid target skills. However, her listener asked few questions and provided few prompts to support her narrative re-tell. Most of the prompts involved requests for clarification (RQCL). P1's inefficient device layout also hindered success.

P2, fairly independent in her story re-tell and competency skills, required fewer cues from the SLP. Cueing generally related to clearing the message window, reiterating voice output messages, and spelling to find unknown icon sequences. P2 and her listener showed well-developed conversational strategies, and P2's listener provided a range of supportive prompts including RQCLs, suggestions for alternative vocabulary, and suggestions for strategies that might assist her (e.g., "Are you using your icon tutor?" "I think you must need another word"). Although P1 and P2 re-told the story in roughly the same time (41 and 35 minutes respectively), the latter used more narrative elements, longer utterances, richer vocabulary, and more sophisticated grammar and syntax.

P3 required only minimal cues and demonstrated the most independence in AAC competencies. He showed generally strong skills in all four competency areas. His narrative took 36 minutes and included varying sentence structures, correct punctuation, and grammatical conventions. He flexibly substituted any original story vocabulary his device lacked with suitably alternative words (e.g, icon encoding for "not", then backspacing and adding "y"). He was consistently aware of his listener's needs, visually monitoring her understanding before continuing on.

DISCUSSION AND CONCLUSION

For our purposes, a narrative re-tell with accompanying data-coding using the Grid

yielded suitable measures of narrative ability, operational and linguistic AAC competencies and amounts of cueing required from the SLP and/or listener. Our results identified a spread of abilities across participants. However, it did not elicit sufficient opportunities for displaying social or strategic competencies; informant interviews were employed to verify these skills. Even then, familiar listeners varied in their abilities to provide salient and specific examples describing the participants' competencies. The SLP found it challenging to standardize the presentation of the questions and to extract sufficient information without unduly leading the informants' responses. The inconsistencies of question format and the insufficiency of listeners' comments substantiated our initial reservations about relying solely on informant interviews. Participants' social skills might have been better observed through an additional dialogue involving a controlled and familiar topic (e.g., describing a birthday party.) Participants' strategic skills might have been better revealed if the listener introduced a conversational breakdown through feigned miscomprehension.

We found the Grid to contain some items useful for assessment. The Grid allows for

recording the level of prompting cues. As this project attempted neither to apply cues systematically nor to codify their typology, only relative degrees of communication independence could be inferred.

The automatic data logging tools were satisfactory, but limited. The logfiles did not record all user selections (e.g., plurals, backspacing). This necessitated reviewing the video framing the device to see operational skills. The video framing the interaction between participant, listener and SLP also revealed a number of social/strategic skills not captured by logfiles.

This protocol proved simple but time-intensive, requiring several hours to obtain and analyze the language sample. It did, however, provide an objective general assessment of the competency level of AAC users. Suggested improvements include: using age-appropriate yet linguistically suitable story materials, eliciting social competencies through conversational tasks and strategic competencies through conversational sabotage, and application of systematic cueing a la the Grid.

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