

New Database

Helps identify, monitor older students

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Speech-language pathologists frequently find themselves in the position of knowing what needs to be done when assessing language skills but without the necessary tools. This situation has been recognized in other fields, such as medicine, and has given rise to the practice-based research movement among clinicians to create needed solutions. Practice-based research involves the collaboration of several clinics to investigate and improve identification of low-frequency diagnoses and share treatment outcomes.¹ This movement already has begun with speech-language pathologists working in the Madison, WI, public schools and the SALT (Systematic Analysis of Language Transcripts) research group at the University of Wisconsin-Madison. The SALT group develops software solutions for language sample analysis, including databases that provide a standard for typically developing performance on various speaking conditions. For example, the software allows direct comparison of a conversational sample from an at-risk 5-year-old with a set of age-matched typically developing peers in conversation.² This direct comparison provides speech-language pathologists with new tools for documenting language production in everyday speaking conditions.

Until now, the SALT databases covered only ages 3-13. Clinicians working with older students had few resources to document performance. This was the situation facing Tom Malone, MS, CCC-SLP, who works with middle and high school students in Brown Deer, WI. He contacted the SALT group to see if there was any interest in expanding the databases to cover older students.

His students were having particular difficulty with written and oral assignments involving explanations of how something works or how to do something. Sequences of events, conditionality, and rules governing permitted action are particularly difficult as they involve complex cognitive and language skills. Assignments requiring these skills usually come from English, social studies and science classes. Beyond the curricular demands of individual classes, state academic standards require the demonstration of expository skills to meet the oral and written language standards for particular grades. Objective assessments of these skills, though,

are not included in the standards.

As a SALT user, Malone recognized that the tool could provide information to improve identification and monitor older students on his caseload with an appropriate database. The SALT group responded to his request for help, spearheading a collaborative effort that ultimately involved 28 volunteer speech-language pathologists and eight school districts.

Conversation and narratives where the child selects the story do not discriminate students at ages 11 and 13 on a variety of standard measures.² Research suggests that expository samples produce more complex language than conversations and narratives.³⁻⁵ In addition, Wisconsin academic standards require the demonstration of expository skills to meet the oral and written language standards for particular grades.

Based on previous research and state standards, the SALT group decided to focus on ages 13-15 for the project, with an expository language sample as the target. Expository samples of students explaining their favorite game or sport would allow comparison with previous research and with conversation and narratives from 13-year-olds in existing SALT databases.

The goals of the project were to develop a representative database of expository language samples from students ages 13-15, describe expository performance relative to conversation and narrative samples, compare the expository dataset to the research literature on exposition, and answer research questions about expository language performance prior to clinical implementation.

Speech-language pathologists interested in establishing the new database were enlisted as volunteers. Malone led this effort for schools in the Milwaukee area. He also presented the project to the SALT committee of the Madison Metropolitan School District. The committee recruited speech-language pathologists and implemented the protocol.

The next step was to meet district and federal regulations for conducting research on human subjects. The SALT group submitted its proposal to the Social and Behavioral Sciences Human Subjects Committee at the University of Wisconsin. The proposal then went through the research review process of each cooperating school district. The districts identified possible participants by age and grade and mailed consent letters to parents. The SALT group identified a cohort from the consent letters that were returned.

A total of 2,250 consent letters were sent to schools in the Milwaukee (1,500) and Madison (750) areas. The return rate was 8.3 percent from Milwaukee (125) and 21.2 percent from Madison (159) for a total of 284 letters. One hundred participants were identified and matched for age, gender, socioeconomic status and race/ethnicity. The participants were assigned by district and school to 28 volunteer speech-language pathologists, who examined two to five participants each.

By the end of the 2007-08 school year, the examiners collected 87 samples, which faithfully followed the protocol and produced good quality recordings. The SALT group transcribed the samples and performed a series of statistical analyses to describe the dataset for consistency,

differences among types of expository samples, age-related changes, and differences with existing conversation and narrative samples.

Different expository contexts-team sport, individual sport, game-did not result in significantly different outcomes. Students describing how to play a team sport provided similar samples in terms of length, vocabulary and sentence complexity as those describing an individual sport or game. This finding is very useful in that it allows students to select the type of game they know best, optimizing their performance on the task.

Measures of language production, such as mean length of utterance (MLU) and frequency of subordinate clauses, were significantly different for expository samples than for conversational and narrative samples on measures of utterance length and complexity. Students produced significantly more complex sentences in the expository samples than in conversation or narratives. This finding is similar to the findings of Nippold et al.³⁻⁴

Measures of language production for the expository samples did not change relative to age for the 13- and 15-year-olds in this project. While surprising, this outcome was consistent with other research where age-related changes were noted for longer age intervals. The result allows clinicians to compare students age 13-15 to the entire set of 87 samples in the dataset.

The most common type of subordinators used by the group was adverbials, followed by nominatives and relatives. This finding is informative for designing intervention targets where adverbials will have more utility, i.e., higher frequency of use than relatives.

Exposition is central to the middle and high school curriculum for both oral and written assignments. Expository skills are required to meet state standards for speaking and writing. An expository language sample context challenges students to use language skills required for school assignments. The database created in this project allows speech-language pathologists to document oral expository skills relative to peers and to become integrated into the student's total curriculum. Oral language intervention can facilitate success in students who fail to meet expectations because of deficits in this area.

References

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