

Spoken and Written Narrative Discourse Coherence in Children with Language Learning Disabilities

Pradyumn Srivastava , *University of Arkansas, Fayetteville, AR*
Anthony D. Koutsoftas, *Seton Hall University, South Orange, NJ*

Abstract

This study examines coherence in children's spoken and written discourse samples. Children's spoken and written samples were evaluated using a 4-point global and local coherence rating system and differences by group and modality will be discussed. Clinical implications will be discussed in terms of integrating spoken and written language goals.

Introduction

- Coherence is the conceptual organization of discourse and can be divided into two types: global and local (Glosser & Deser, 1990).
 - Global coherence is how the discourse relates to the overall topic
 - Local coherence refers to how individual sentences within the discourse maintain meaning.
- Coherence is a promising measure of writing quality because coherence:
 - Is concerned with how discourse is organized
 - Demonstrates good reliability (Koutsoftas et al., 2009)
 - Has been linked to quality of writing (Crossley & McNamara, 2010)
 - Can be analyzed in a quick and efficient manner.
- Prior research has evaluated coherence in spoken and written language samples of elementary school children in a variety of ways (Barzilay & Lapata, 2007; Duran et al., 2007; Goldman, 2008).
- The measure of coherence selected for the present investigation has been validated on spoken language samples of healthy adults and adults with aphasia (Wright et al. 2014; Wright et al. 2013).
- One prior study evaluated written coherence in children with and without LLD (Petersen & Koutsoftas, 2014) and found no differences between groups on coherence in writing, when controlling for length of stories.
- The purpose of this study is to understand how children with and without language-learning disabilities (LLD) might differ on measures of linguistic coherence in spoken and written language samples, collected from the same sample of children.
- If it is the case that groups differ on spoken measures of coherence and not written, important clinical considerations regarding modalities can be addressed.

Research Questions & Hypotheses

- The specific research questions are:
 - Do children with and without LLD differ on global coherence in spoken and written narrative samples?
 - Do children with and without LLD differ on local coherence in spoken and written narrative samples?
- Our hypothesis is that children with LLD will demonstrate poorer global and local coherence in spoken and written modalities because of their underlying linguistic deficits. Regarding modality, we predict higher coherence ratings on written samples compared to spoken.

Method

- Fifty, 4th and 5th grade students participated in this study. All children met the following inclusionary criteria: (a) primary English speakers; (b) no history of grade retention; and, (c) passed a bilateral hearing screening.
- Children qualified for the LLD group if they had an Individualized Education Plan indicating they were receiving speech-language services, special education services for reading/writing, or both.
- Children qualified for the TLD group if they had no history of special education or speech-language services and no academic concerns.
- Four trained RAs analyzed writing samples for global and local coherence. RAs were blind to group membership; and samples were corrected for grammar and spelling errors.

Sample

Descriptive Measures	TLD (n = 25)		LLD (n = 25)	
	M	SD	M	SD
Age in years*	10.32	.57	10.79	.68
Mother's years of education	14.12	1.39	14.08	1.84
CELF-4, Core Language Score ^a	106.60	10.59	80.52	16.32
a – results based on Welch Test				* $p < .05$

Procedures

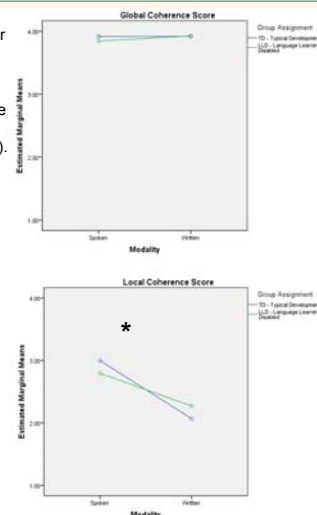
- This study was part of a larger study examining spoken and written narrative and expository discourse skills in 4th and 5th graders with and without LLD.

Global Coherence	
4	The T-unit is overtly related to the stimulus as defined by mention of actors/actions/objects present in the stimulus which are of significant importance to the main details of the stimulus or interpretation.
3	The T-unit is related to the stimulus or interpretation of topic but with some inclusion of suppositional or tangential information that is relevant to the main details of the stimulus or interpretation.
2	The T-unit is only remotely related to the stimulus/interpretation.
1	The T-unit is entirely unrelated to the stimulus/interpretation.

Local Coherence	
4	The topic of the preceding T-unit is continued by repetition or elaboration of the general theme, as defined by the use of TWO OR MORE previously presented lexical items.
3	The topic of the preceding utterance is continued by repetition or elaboration of the general theme through the use of ONLY ONE previously presented lexical item.
2	The utterance contains appropriate transitional verbiage to link completely unrelated information to the preceding utterance.
1	The utterance has no relationship to the content of the preceding utterance.

Results

- Two separate Factorial Analyses were run, one for global coherence and one for local coherence with the between group factor of group (TLD, LD) and the within group factor of modality (Spoken, Written).
- For global coherence, the Omnibus test was not significant, Wilk's $\Lambda = .97$, $F(1, 46) = 1.24$, $p = .27$, indicating no group or modality effects on global coherence.
- For local coherence, the omnibus test was significant, Wilk's $\Lambda = .83$, $F(1, 46) = 9.78$, $p < .01$, supporting a Modality by Group Interaction.
- Follow up tests revealed no between group differences for either spoken or written local coherence.



Discussion

- The aim of this study was to better our understanding of children with and without LLD's linguistic coherence ability across modalities of spoken and written narrative discourse.
- Findings suggest two distinct patterns of performance on global versus local coherence, consistent with prior study, and supporting the need for separate analysis of these two skills. This is consistent with previous research whereby global coherence ratings are largely higher than local coherence scores.
- For Global coherence, there were no group and modality differences indicating that almost all T-units were related to the topic:
- Elementary grade students are exposed to narrative discourse more than those with expository discourse (Applebee, Langer, Mullis, Latham, & Gentile, 1994). It is possible that participants' familiarity with the topic ameliorated their global coherence measures in both the modalities.
- In general, writing does not lend itself to off-topic sentences
- The use of a prompt may have resulted in higher global coherence scores in both the modalities.
- It also suggests that the global coherence measures is not affected by modality and by language impairment status. It is possible that global coherence skills require less monitoring demands. In general, children will stay on topic across almost all spoken utterances and written sentences, especially in the context of these experimental conditions (one on one testing, structured and specific tasks).
- For local coherence, a group by modality interaction suggests that local coherence is affected by modality and by language impairment status.
- For local coherence, both the groups scored higher in spoken modality than the written modality, meaning their spoken utterances were more related to each other than written sentences on a local level.
 - Perhaps when speaking children have a tendency to elaborate on prior utterances using at least one previous lexical item to ensure a clearer message.
 - In writing, it is much easier for a reader to go back to find a referent so the child is less inclined to repeat lexical items, making for more efficient writing.
- Future research should apply these measures to a variety of spoken and written genres to further understand coherence in children with and without LLD.

Acknowledgements

We thank the children and families who participated in the study.

For more information: Pradyumn Srivastava, Department of Rehabilitation, Human Resources and Communication Disorders, University of Arkansas, Fayetteville. E-mail: psrivast@uark.edu