

BACKGROUND AND OBJECTIVES

BACKGROUND

- Children with Developmental Language Disorder (DLD) struggle with learning and using language without any obvious cause.¹ Prior research has found that children with DLD struggle to learn new verbs, suggesting that verbs may pose a particular challenge for children with DLD.⁵
- Prior studies^{3,4} also looked at verb diversity and specificity among children with DLD, but less attention has been given to lexical-semantic verb errors in communicative contexts (i.e., whether or not a verb is used appropriately given the context).
- Children with DLD may have more lexical-semantic errors, particularly with verbs,² suggesting that verb choice may provide important insight into the communication development in school age children with and without DLD.

OBJECTIVES

- Examine the number of lexical-semantic verb errors produced during storytelling by 6-, 7-, 8-, and 9-year-old children.
- Discover if any differences exist in verb use between children with DLD and children who have typical language development (TLD).

METHODOLOGY

HYPOTHESES

- The number of lexical-semantic verb errors produced will be higher for younger children, and errors will decrease with age.
- The DLD group will produce more lexical-semantic verb errors than the TLD group.

PARTICIPANTS

- 6-, 7-, 8-, and 9-year-old native English-speakers from Edmonton, AB.
- All 51 children with DLD were matched with children with TLD based on age, SES, and sex.

PROCEDURE

- Pre-transcribed transcripts from the norming sample for the Edmonton Narrative Norms Instrument (ENNI) were coded.
 - The three A series stories (A1-A3) of increasing length and complexity
- Four coders (two pairs) applied a binary system coding verb accuracy:
 - 5113 verbs coded in total
 - 25 transcripts coded by both pairs for reliability
 - Interrater reliability was 86%
- Students regularly met to discuss discrepancies during the coding period to come to a consensus.



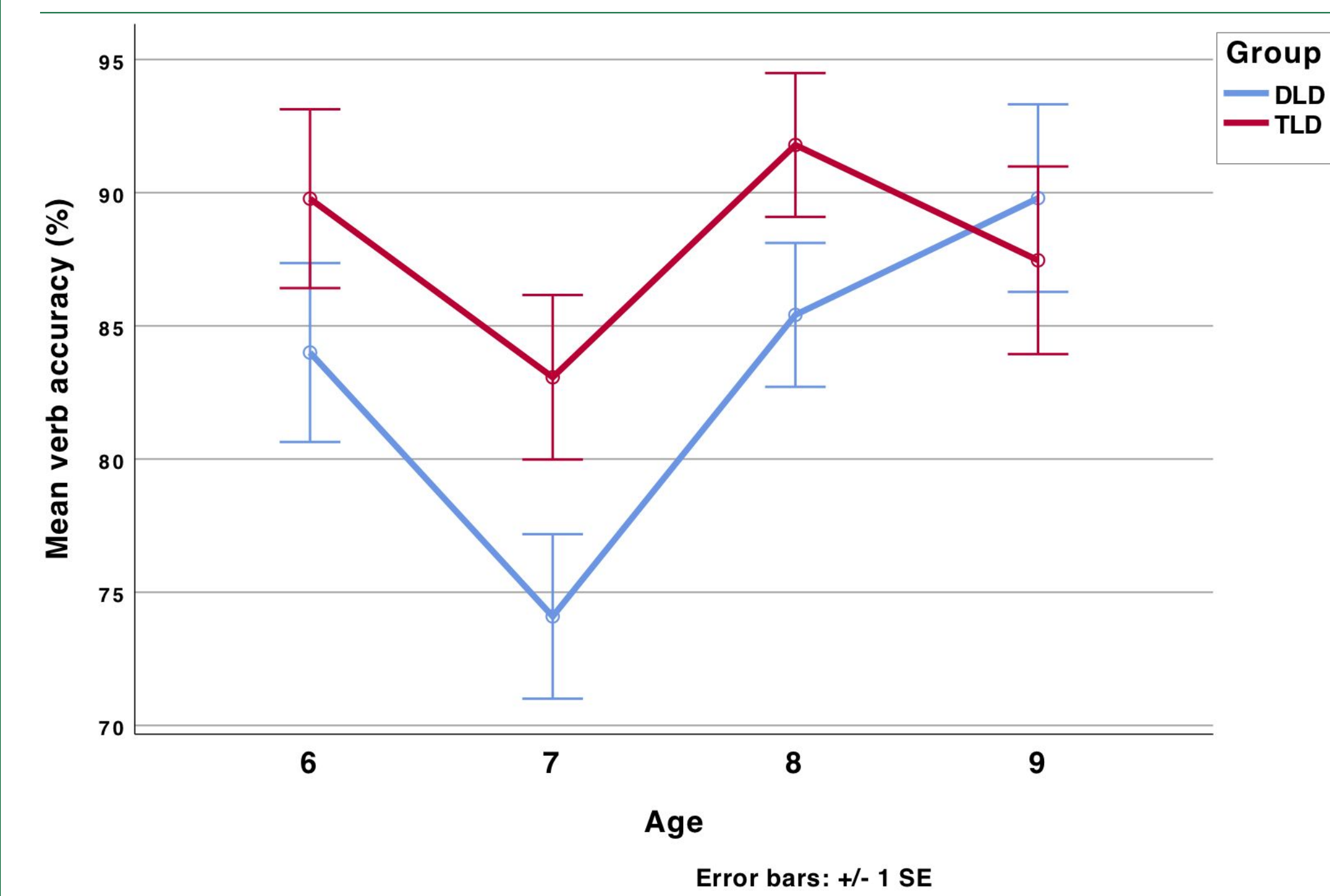
RESULTS

- A three-way ANOVA was used to compare the three variables (group, story, and age).
- Main effects of all three factors: group ($p = 0.039$), story ($p = 0.002$), and age ($p = 0.003$).
 - No significant interaction effects (all p -values greater than 0.05).

Table 1. Percent mean verb accuracy across age, group, and story.

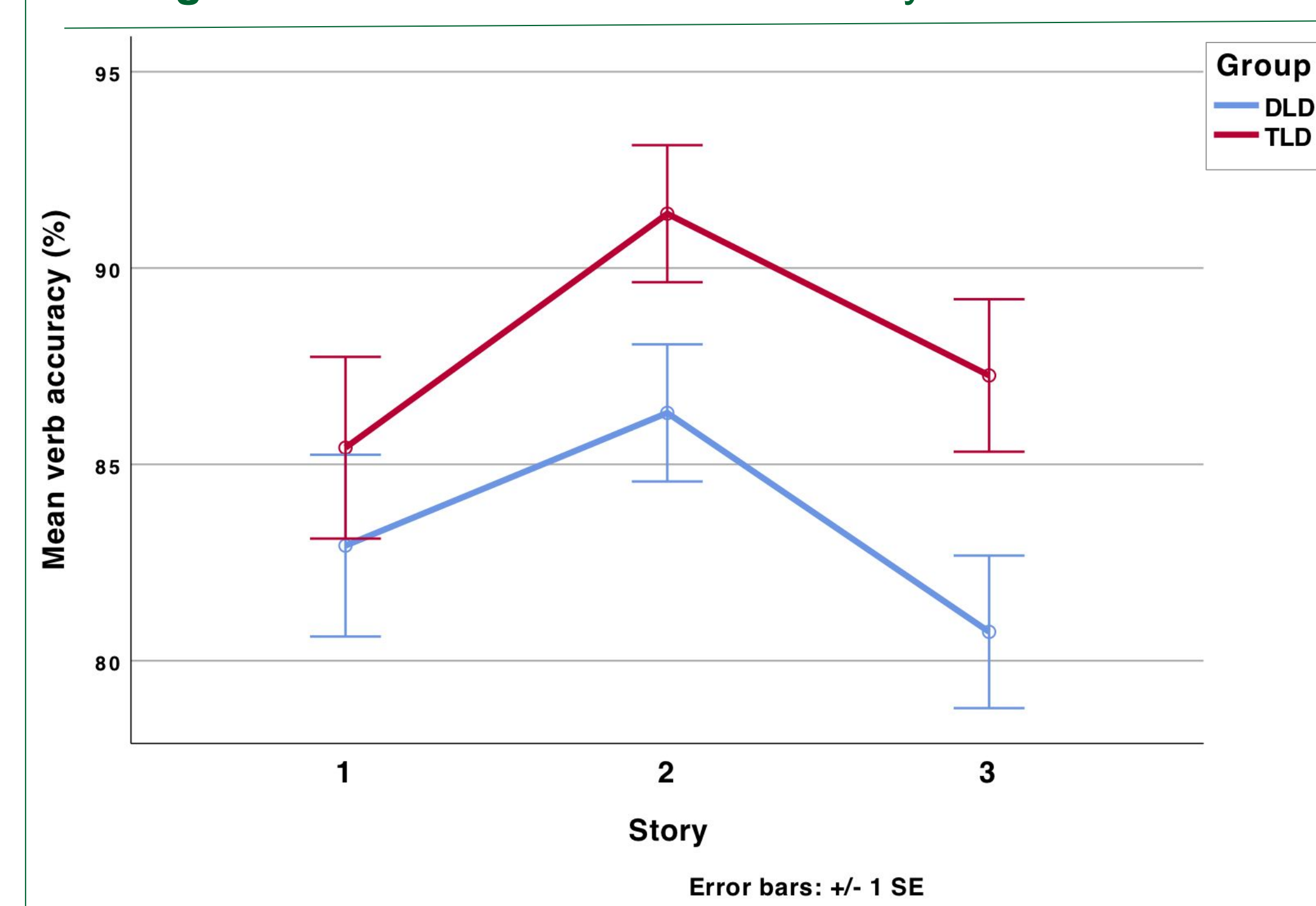
AGE	GROUP	STORY A1	STORY A2	STORY A3	ALL STORIES
6-year-olds	DLD	82%	87%	83%	84%
	TLD	89%	93%	87%	89%
7-year-olds	DLD	69%	80%	73%	75%
	TLD	79%	85%	85%	84%
8-year-olds	DLD	87%	88%	81%	85%
	TLD	91%	95%	90%	91%
9 year olds	DLD	93%	90%	86%	89%
	TLD	82%	92%	88%	88%
Total	DLD	83%	86%	80%	83%
	TLD	86%	92%	87%	88%

Figure 1. Percent mean verb accuracy across age groups.



Age Effects	p - value
6 vs 7*	0.055
6 vs 8	0.943
6 vs 9	0.957
7 vs 8*	0.005
7 vs 9*	0.016
8 vs 9	1.0

Figure 2. Percent mean verb accuracy across stories.



Story Effects	p - value
A1 vs A2*	0.003
A1 vs A3	0.809
A2 vs A3*	< 0.001

DISCUSSION

- There does appear to be a significant difference in proportion of errors between children with DLD and TLD; children with DLD produced more errors than children with TLD overall.
- The process of judging verb accuracy was challenging. It was easier to judge that a verb was used appropriately than it was to judge that a verb was not used appropriately.
- Contrary to our hypothesis, verb errors didn't decrease linearly with age; there appear to be other factors at play that we didn't anticipate at age 7.



LIMITATIONS

- Challenges of coding:
 - Challenge of clearly identifying errors. Kappa reliability between coding pairs was fair (0.35). There was less consensus when deciding if a verb was inappropriate compared to when it was appropriate.
 - Dialectal differences may have been a factor.
 - No clear delineation between syntactic and semantic errors.
 - Challenge of making decisions about verb accuracy in the context of static images. The ENNI instrument was not developed with the primary purpose of looking at verb use in depth.
- Other challenges:
 - Small sample sizes when analyzing by story and by age group.
 - Possible ceiling effect for 9-year-old participants with regards to verb use accuracy in this specific task. We hypothesize this could be because the task was too easy for them so they started giving overly creative answers that weren't coded as correct.

FUTURE WORK

- Include more transcripts to increase power which would decrease the possibility of making Type II errors (false negatives).
- Have all researchers code all transcripts to come to a full consensus.
- Elicit verbs using non-static stimuli, such as movies.
- Consider the entire verb phrase including prepositions, arguments, and overall meaning.

References

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