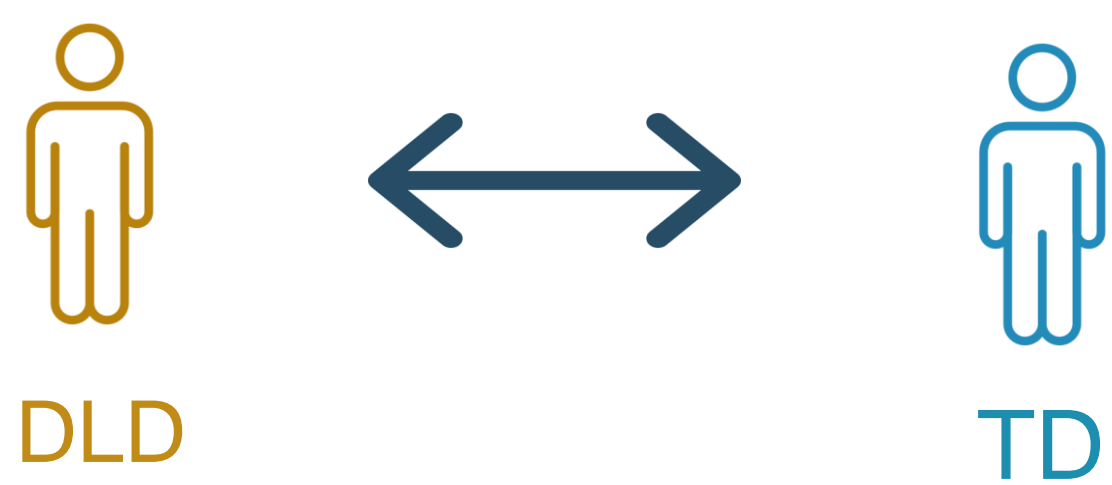


The potential of a gesture comprehension task to screen for DLD in bilingual children

Background

Language assessment in bilingual children



Challenging assessment due to:

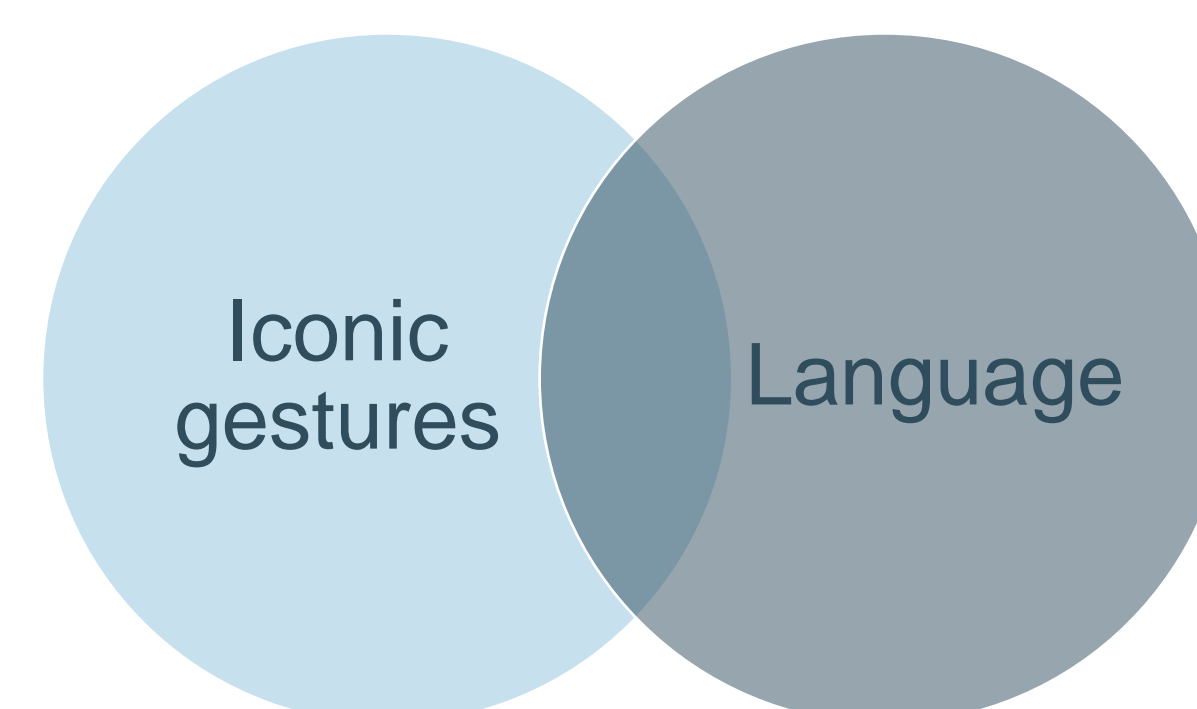
- High variation in language experiences and home languages
- Misdiagnosis due to testing in the majority language
- Practical impossibility of testing in both languages

Need for an alternative method

Iconic gesture comprehension detecting DLD

- Iconic gesture = **imagistic** gesture representing a concrete object, event, or action through a close visual resemblance
- Iconic gesture comprehension in monolingual children: **DLD < TD**

Relation between iconic gesture and language



Underlying language mechanisms?

- Semantics
- Lexicon
- Morphosyntax

Screening instrument for bilingual children with DLD?

Advantages:

- Nonverbal
- Less influence of language experiences
- Fast screening

Research questions:

- Group difference?
- Underlying language mechanisms?
- Screening instrument?

Method

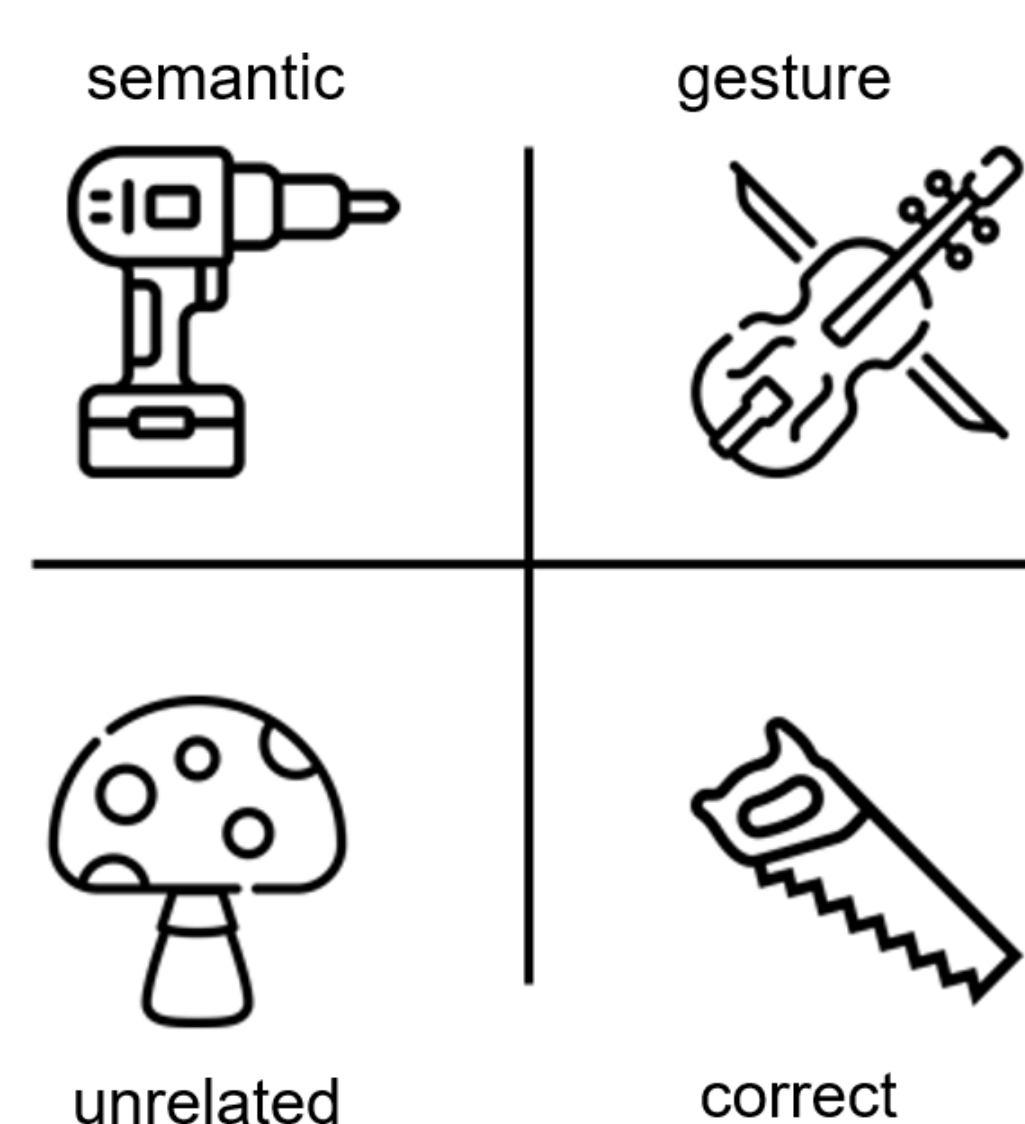
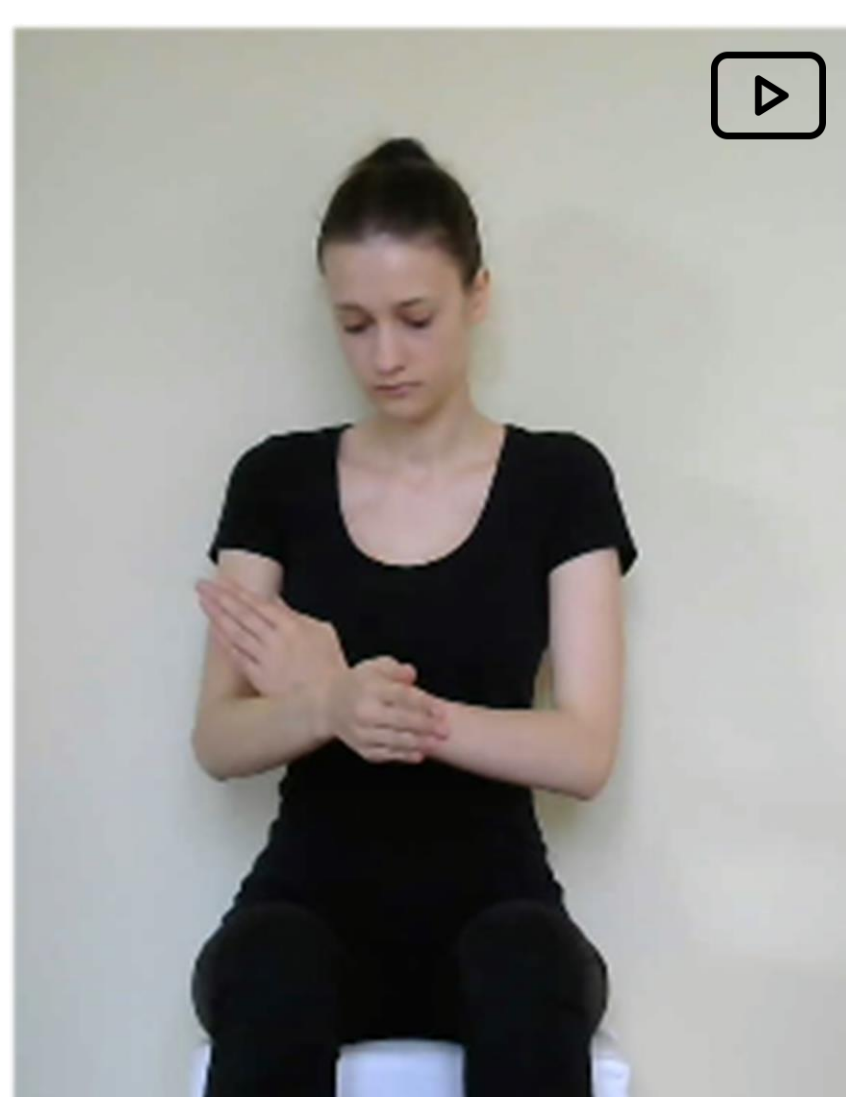
Participants

- 3;00 – 8;11 years old
- Bilingual: Dutch and other language

	DLD	TD
n	40	35

Instruments

- Iconic comprehension task
 - 31 gestures with 4 answer options



Language abilities

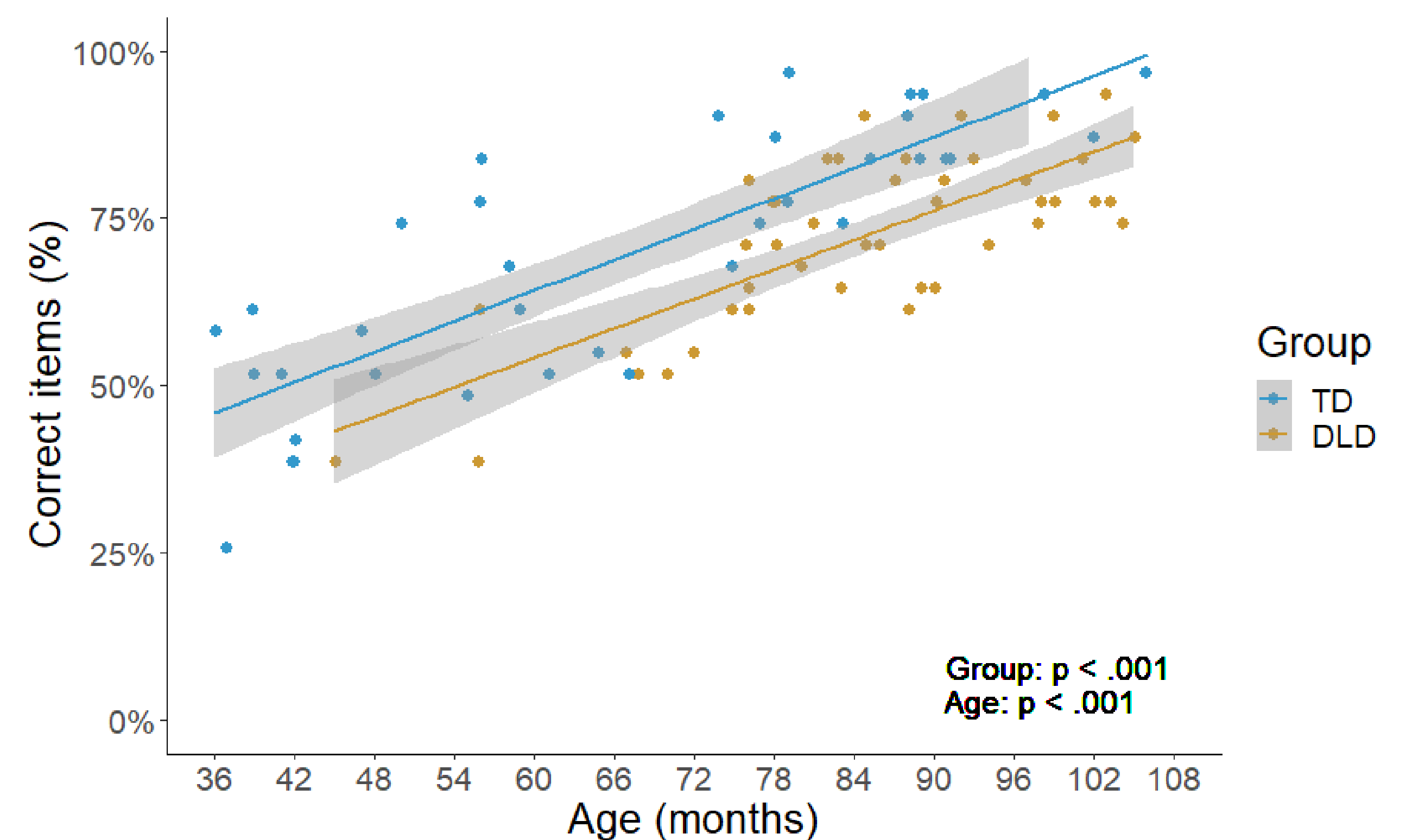
- Dutch
 - Semantics (SON-R)
 - Lexicon (PPVT-III-NL and AV CELF-P-2-NL/CELF-5-NL)
 - Morphosyntax (SC, WS and RS CELF-P-2-NL/CELF-5-NL)
- Home language development (ALDeQ-NL)

Background measurement

- Language experiences (Q-BEx)

Results

Group difference



Underlying language mechanisms

- Method 1: age-standardized scores residuals (lm(gesture ~ age) lm(gesture.residuals ~ language.norm))
- Method 2: raw scores (lm(gesture ~ age + language.raw))

	Semantics receptive ANA	Semantics receptive CAT	Lexicon receptive PPVT	Lexicon expressive AV	Morphosyntax receptive SC	Morphosyntax expressive WS	Morphosyntax expressive RS	Home language ALDeQ-NL
① All ages	**	.	*	.	*	.	.	.
3 - 4
② 5 - 7	.	.	***	**	.	.	*	*
8 - 9	.	**	*	.	.	.	***	.

Significance: . (.05-0.1), * (.01-.05), ** (.001-.01), and *** (< .001)
Group: 3-4 (n=18), 5-7 (n=44), and 8-9 (n=13)

Screening instrument - diagnostic accuracy

Binary logistic regression with leave-one-out cross-validation (LOOCV)

overall accuracy	sensitivity	specificity
74,7%	82,6%	64,9%

Conclusion

- Iconic gesture comprehension in bilingual children: **DLD < TD**
- Underlying language mechanism unclear
- Iconic gesture comprehension has potential as a screening instrument for bilingual children with DLD