

**10th Congress of
Baltic States SLTs'**

Stronger together

10-11 April, 2026



LATVIJAS LOGOPĒDU
ASOCIĀCIJA
- par skaidru valodu





Difficulties in Differentiating Acoustically and Articulatorily Close Consonants in the Writing Tasks among Children with Writing Difficulties

Inese Stikova

Baiba Trinite, Dr. med., Prof.

Voice and Speech Research Laboratory, RTU Liepaja Academy, Liepaja, Latvia

INTRODUCTION

Written language disorders in primary school pupils are often associated with difficulties in phoneme discrimination and sound-to-letter mapping. Acoustically and articulatorily close consonants may cause persistent confusion in writing, especially in situations where children have to distinguish similar speech sounds.

In Latvian, the consonant pairs /tʃ/–/c/ and /t/–/d͡z/ are particularly important because of their acoustic and articulatory similarity.

Investigating how these sounds are differentiated across different written tasks may help to better understand the nature of writing difficulties in pupils with written language disorders.



OBJECTIVES AND METHODS

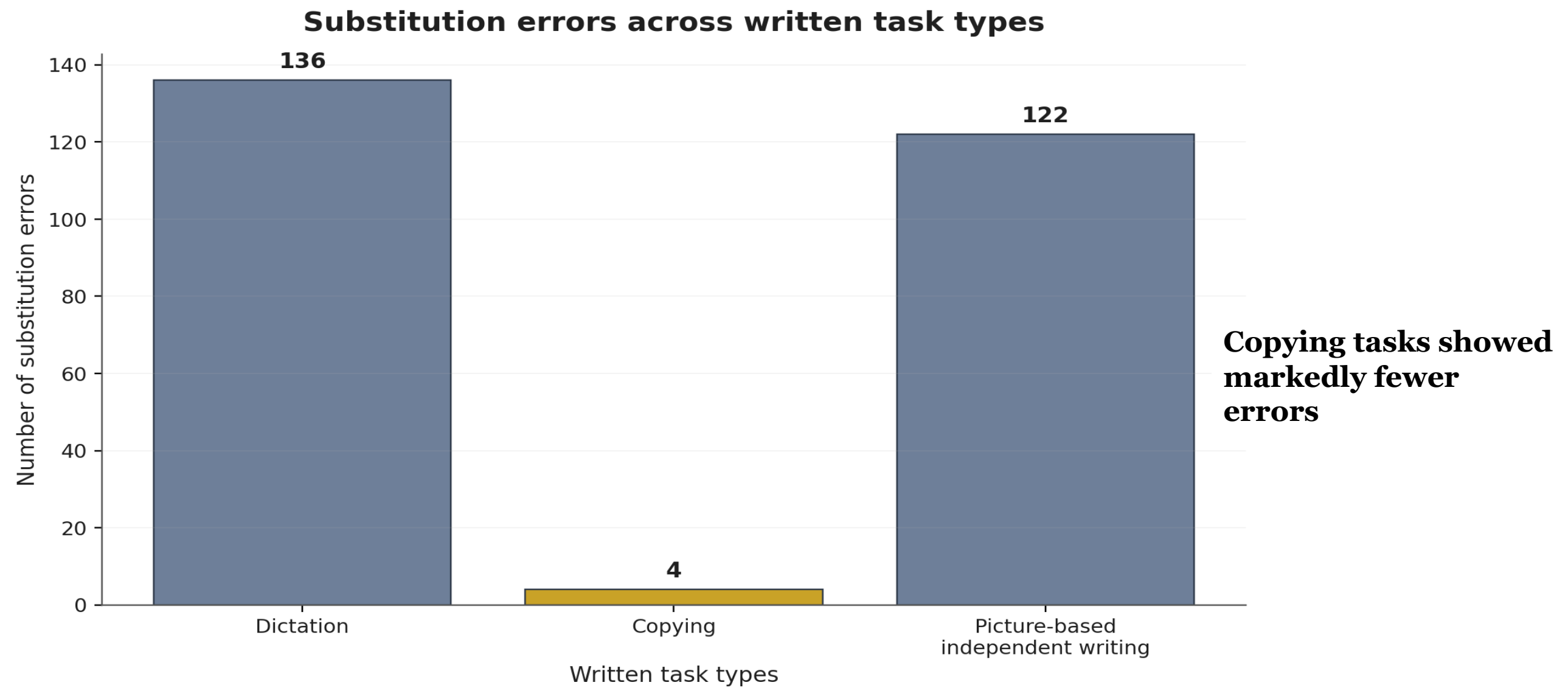
The aim of this study was to identify and quantify difficulties in differentiating the acoustically and articulatorily close consonants in Latvian /tʃ/, /c/, /j/ and /dʒ/ across different types of written tasks performed by second-grade pupils with written language disorders.

- The ability to discriminate target consonants was assessed in 42 second-grade pupils with written language disorders using three task types: dictation, copying tasks, and picture-based independent writing tasks.
- Each task consisted of 24 target words, with no overlap between word lists across tasks.
- The target sounds occurred in both word-initial and word-medial positions.
- There was identical number of all target sounds in each task.
- Errors involving the target sounds were categorized as omissions or phoneme substitutions.
- Data were compiled in Microsoft Excel and analysed using repeated-measures ANOVA and non-parametric repeated-measures procedures (Friedman test with Durbin–Conover pairwise comparisons).



RESULTS 1

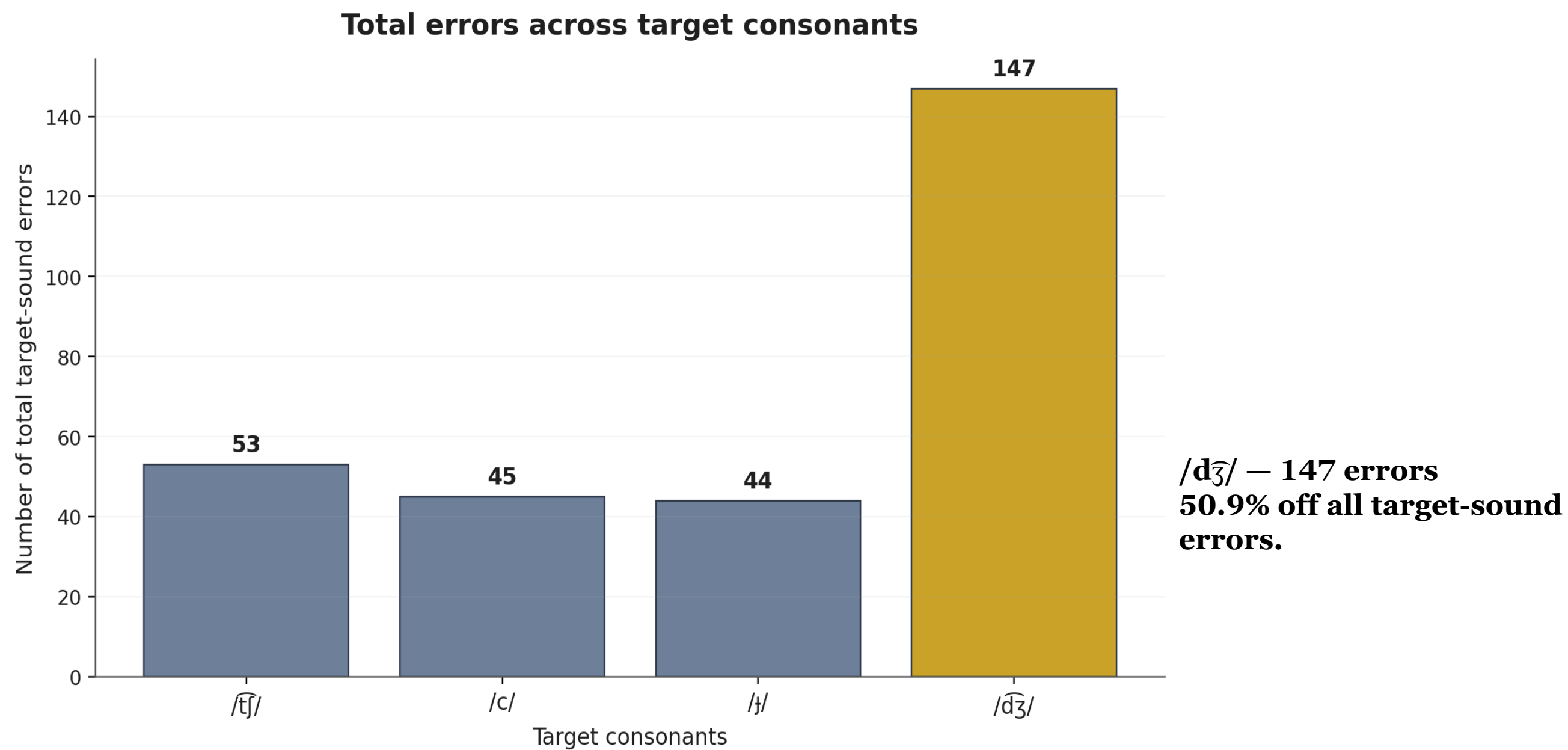
- The frequency of substitution errors differed significantly by task type (ANOVA: $F=4.03$, $p=0.021$; Friedman: $\chi^2=37.7$, $p<0.001$).
- Post hoc analyses revealed significantly fewer substitution errors in copying tasks compared with both dictations and picture-based independent writing tasks (both $p<0.001$).





RESULTS 2

The highest error proportion was observed for the sound /d̄z/ (147 errors), accounting for 50.9% of all target-sound errors.





RESULTS 3

Across all task types, phoneme substitution errors occurred more frequently than omissions (263 vs 27)

263

phoneme substitution errors

27

omissions



CONCLUSIONS

- Copying tasks, which provide direct visual orthographic support, were associated with a substantial reduction in phoneme substitution errors.
- In contrast, dictations and picture-based independent writing tasks that place higher demands on phonemic processing resulted in markedly higher error rates, with the sound /dʒ/ showing the greatest vulnerability.
- These findings indicate that orthographic support facilitates more accurate phoneme-grapheme mapping in pupils with written language disorders and should be considered in both assessment and intervention planning.

Orthographic support should be considered in both assessment and intervention planning.



REFERENCES

1. Auziņa, I. et al. (2013). *Latviešu valodas gramatika*. Riga: LU Latviešu valodas institūts.
2. Čeirāne, S., & Markus, D. (2013). *Līdzskaņu ģ un ķ izrunas īpatnības bērnu un pieaugušo valodā*. *Baltistica*, 48(1), 57–67.
3. Tūbele, S., & Lūse, J. (2012). *Ja skolēns raksta nepareizi*. Riga: RaKa.