



UvA-DARE (Digital Academic Repository)

Word spelling in monolingual and bilingual children with developmental language disorder

de Bree, E.H.; Blikendaal, W.I.; van den Boer, M.

Publication date

2025

Document Version

Final published version

Published in

Journal of Research in Reading

[Link to publication](#)

Citation for published version (APA):

de Bree, E. H., Blikendaal, W. I., & van den Boer, M. (2025). Word spelling in monolingual and bilingual children with developmental language disorder. *Journal of Research in Reading*.

General rights

It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

Disclaimer/Complaints regulations

If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: <https://uba.uva.nl/en/contact>, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.

Word spelling in monolingual and bilingual children with developmental language disorder

Elise H. de Bree 

Research Institute of Child Development and Education, University of Amsterdam, Amsterdam, The Netherlands and Department of Education and Pedagogy, Utrecht University, Utrecht, The Netherlands

Wendy Blikendaal

Research Institute of Child Development and Education, University of Amsterdam, Amsterdam, The Netherlands and Royal Dutch Auris Group, Rotterdam, The Netherlands

Madelon van den Boer

Research Institute of Child Development and Education, University of Amsterdam, Amsterdam, The Netherlands

Background: Children with developmental language disorder (DLD) are reported to have word spelling difficulties. These findings concern monolingual children with DLD; little is known about bilingual children with DLD. We examined word spelling abilities of bilingual children with DLD to determine if bilingualism is an additional risk factor for spelling problems.

Methods: We compared word spelling outcomes of monolingual ($n = 87$) and bilingual children with DLD ($n = 51$), who attended upper elementary years (Grade 5 or 6) of special education for children with DLD. Spelling measures obtained were a standardised curriculum-based word spelling task, an experimental dictation task and word spelling in short written texts.

Results: Outcomes on the curriculum-based spelling test established that both the monolingual and bilingual groups of children with DLD on average showed a spelling delay. Results on this test, as well as those of the experimental dictation task and the writing task, did not indicate differences between the monolingual and bilingual groups with DLD, even when lower oral language outcomes of bilingual children in the school language were controlled for.

Conclusions: The results indicate that DLD is a risk factor for word spelling difficulties while bilingualism is not.

Keywords: bilingual, developmental language disorder, word spelling

Highlights

What is already known about this topic

- Many children with DLD show poorer literacy outcomes than their peers in general.
- Word spelling is an area of difficulty for monolingual children with DLD.

What this paper adds

- We included both monolingual and bilingual children with DLD attending special education.
- Both groups showed spelling delays on three different spelling measures.
- The groups did not differ from each other on each of these tasks, even though the bilingual DLD group showed lower vocabulary and grammar outcomes in the school language.

Implications for theory, policy or practice

- Our findings indicate that DLD is a risk factor for poor word spelling, but bilingualism is not.
- This implies that spelling problems in bilingual children with DLD should not be attributed to their bilingualism.

In literate societies, spelling ability is important: the ease with which a writer can spell impacts on the cognitive load during the writing process. This can affect text production fluency and (perceived) text quality (Graham et al., 1997, 2011). It is therefore valuable to learn to spell correctly. Some learners show difficulty with learning to spell. This is the case for children with developmental language disorder (DLD). DLD is a clinical condition severely impacting on oral language learning, despite normal hearing, average nonverbal intelligence and adequate language input (Leonard, 2014).

Recent meta-analyses have robustly shown lower spelling outcomes for populations with DLD than those without (Graham et al., 2020; Joye et al., 2019). Moreover, DLD often co-occurs with severe and persistent word reading problems (McArthur et al., 2000; Snowling et al., 2019). Youth with co-occurring DLD and dyslexia are very poor spellers (e.g., Brizzolaro et al., 2011; Scuccimarra et al., 2008) and show lower spelling outcomes than those with DLD-only (Bishop et al., 2009; McCarthy et al., 2012; Snowling et al., 2019; Vandewalle et al., 2012). However, children with DLD-only also show spelling difficulties (Alloway et al., 2017; de Bree, Lammertink, et al., 2022). The literature thus indicates that children with DLD run a risk of developing spelling difficulties, pointing to the need of attention to spelling development and instruction in children with DLD (Werfel et al., 2021).

The ability to spell words requires knowledge of phonology, word meanings and word structures (Apel et al., 2012; Ouellette, 2010; van Weerdenburg et al., 2011). These linguistic components are all potential areas of difficulty for children with DLD, indicating

that all children with DLD could run a risk of poorer spelling outcomes. Furthermore, word reading ability is an important predictor of spelling outcomes (Georgiou et al., 2020), also in children with DLD (Werfel et al., 2021).

These findings have generally been limited to monolingual children with DLD. It is important to know whether bilingual children with DLD face similar, more or fewer difficulties with spelling than their monolingual peers. Such knowledge is needed to understand whether both DLD and bilingualism are risk factors for spelling and consequently, to shape education and support. In the absence of an agreed-upon definition of bilingualism, we apply Kohnert's definition of bilingual (or multilingual) children to be those who receive 'regular input in two or more languages during the most dynamic period of communication development' (Kohnert, 2010, p. 456). Bilingual children have to learn two languages in the time in which monolinguals learn one. This can lead to lower language abilities in one language compared with monolinguals (Verhoeven, 2000), although the total language abilities in both languages together do not differ (Hoff et al., 2012; Pearson et al., 1997; Unsworth, 2013). For bilingual children with DLD, this reduced language knowledge in the different languages might lead to a larger risk of word spelling difficulties than for their monolingual peers with DLD. Specifically, given that spelling is related to word meanings and structures, such differences in vocabulary knowledge could impact on spelling.

However, for word reading outcomes, there are indications that monolingual and bilingual children with DLD do not differ. Balilah and Archibald (2018) found that there were no differences on word reading outcomes of 6-to-9-year-old monolingual (American English) and bilingual (English language learners) children for whom parental concerns of language problems were present. Similarly, de Bree, Boerma, et al. (2022) found that monolingual (Dutch) and bilingual children with diagnosed DLD (lower and upper elementary samples) did not differ in word reading. These findings might imply that bilingualism does not have an additional impact above DLD on children's literacy outcomes.

We are not aware of any studies that have compared spelling of monolingual and bilingual children with DLD. There is some literature on spelling of typically developing monolingual and bilingual children. For instance, Verhoeven (2000) found that both monolingual and bilingual typically developing children showed considerable progress in Dutch word spelling in Grades 1–2. The bilingual children, however, showed consistently lower performance than the monolinguals. Such findings have also been reported in German (Czapka et al., 2019) and Italian (e.g., Affranti et al., 2022). These findings suggest that language knowledge influences spelling outcomes. There are also indications that the monolingual and bilingual typically developing children do not differ in spelling performance. For instance, Jongejan et al. (2007) did not find group differences on English spelling across development from Grades 1–4. A third type of findings stems from a meta-analysis on English spelling: bilinguals were found to show *better* word spelling than monolinguals, especially in lower grades (Zhao et al., 2016). There is thus no consistent expectation concerning spelling ability of monolingual and bilingual children.

Present Study

We compared the spelling outcomes of Grades 5 and 6 monolingual and bilingual children with DLD attending special education in the Netherlands. Their special education placement at upper elementary school, indicating the severity of their language disorder, allows us to compare the spelling outcomes in relation to their mono/bilingualism, as both groups

receive the same spelling instruction and practice. We compared the spelling outcomes on (1) a curriculum-based spelling test (CBST), (2) an experimental dictation task and (3) a short written text.

We expected the children with DLD in general to perform poorly on spelling tests. As the literature on spelling outcomes in monolingual and bilingual children is mixed, we had no pronounced expectations concerning differences between monolingual and bilingual children with DLD. At the same time, it has been found that word reading, a predominant predictor of spelling, does not differ between monolingual and bilingual children with DLD. We therefore very tentatively anticipated that the monolingual and bilingual children would not differ in spelling outcomes.

Method

Participants

The 87 monolingual and 51 bilingual participants were all children with formally diagnosed DLD, attending special education. In the Netherlands, a formal clinical *diagnosis* is based on multidisciplinary assessment with clearly defined criteria concerning severity and persistence of the language disorder (Gerrits et al., 2019; NVLF, 2017). At the time of diagnosis, the children with DLD obtained a score of $-1.5 SD$ on at least two out of four language subscales or $-2 SD$ on the total score of a comprehensive standardised language assessment test battery. Hearing problems, severe articulatory difficulties, intellectual disability and a language disorder caused by another (developmental) disorder are exclusion criteria.

For bilingual children with DLD, the same diagnostic criteria apply as for monolingual children with DLD. Additionally, parental information is obtained on whether language difficulties are present in both languages and on the amount of language input in both languages. Evaluation of performance on tasks tapping both languages is made when possible (Stichting Siméa, 2016), sometimes with the aid of a certified interpreter.

In the Netherlands, *educational needs support* is based on evaluations of the child's development twice a year. Children attending special education for DLD have severe language difficulties and require intensified and specialised education in the small classroom setting with integrated teaching and language services. Data were obtained from 10 such schools.

The groups did not differ in mean age (monolinguals: 11;5 years, $SD = 7.7$ months; bilinguals: 11;5 years, $SD = 6.7$ months, $t(137) = 0.183$, $p = 0.855$), in distribution of girls/boys (monolinguals: 26 girls/61 boys; bilinguals: 13 girls/26 boys, $\chi(1) = 0.263$, $p = 0.608$), and in distribution of grade (monolingual: 43 Grade 5, 44 Grade 6; bilingual: 25 Grade 5, 26 Grade 6, $\chi(1) = 0.000$, $p = 0.986$).

The bilingual DLD group included children with (at least) 14 different other languages, of which Arabic ($n = 8$), Polish ($n = 8$) and Turkish ($n = 10$) were most frequent. This information was unavailable for four children. The information on the bilingual background was provided to us by the teachers of the special education school the children attended. For 28 children, teachers indicated the children's preferred language; this was Dutch in most of these cases (25/28).

In Table 1, we present mean outcomes on receptive vocabulary (PPVT-III-NL, $\lambda_2 = 0.89-0.97$; Schlichting, 2005, $M = 100$, $SD = 15$), sentence repetition and formulated

Table 1. Mean language outcomes (and standard deviations) per group.

Standard scores	Monolingual with DLD		<i>N</i>	Bilingual with DLD		<i>N</i>	<i>t</i> -value
Receptive vocabulary	84.6	(10.9)	64	76.7	(11.8)	43	3.516***
Sentence repetition	3.1	(1.8)	61	2.6	(1.5)	41	1.575
Formulated sentences	5.4	(2.1)	75	4.5	(2.0)	45	2.492*

*** $p < 0.001$.

* $p < 0.05$.

sentences (subtests from the Dutch version of the CELF-4-NL, Kort et al., 2008, sentence repetition $\alpha = 0.91$, formulated sentences $\alpha = 0.78$, $M = 10$, $SD = 3$). The information on language outcomes is available for a subset of children, as not all data was available for the researcher. Both DLD-groups obtained low results on these tasks (standardised scores < 6 or < 85). On the basis of the available data, the bilingual group obtained lower outcomes than the monolingual group. This difference was not significant for Sentence Repetition.

Instruments

Curriculum-Based Spelling

We obtained information from schools on the outcomes on the national curriculum-based spelling test (CBST) (Cito, 2014). This test is presented both halfway through and at the end of each school year. The task consisted of two parts, administered on a different (part of the) day. In each part of the task, children were asked to write down 20 to 30 words. Target words were different for each grade, tuned to the learning goals. The teacher read aloud a sentence containing a target word that children were asked to write down. There was no time limit. The raw scores, consisting of the total number of words spelled correctly, are converted to spelling levels, ranging from 1 to 5 (1 = percentiles 75–100; 2 = percentiles 50–75; 3 = percentiles 25–50; 4 = percentiles 10–25; 5 = percentiles 0–10). Test–retest reliability was 0.93 for Grade 5 and 0.91 for Grade 6 (Tomesen et al., 2019, 2020).

We intended to compare the distributions of the monolingual and bilingual groups with DLD on the CBST. However, inspection of the data indicated that there was considerable variation in the level at which the assessments took place. For instance, the CBST assessment of spelling abilities of a beginning Grade 6 student is expected to be at the level of end Grade 5. For our sample of children with DLD attending special education, the grade levels of the CBST varied between the end of Grade 1 to the end of Grade 5. This implies that children have also been receiving spelling instruction at lower levels. We therefore looked into the difference between the actual grade levels and the grade level of the CBST rather than performance on the test.

Experimental Word Dictation

General word spelling was also evaluated through experimental pen-and-paper word dictation. Spelling of 52 two-and-three syllable words was assessed. These words encompassed (1) straightforward phoneme–grapheme associations (‘spaarpot’ *piggybank*; $n = 2$), (2) rule-based spellings (‘takken’ *branches*; $n = 32$), (3) analogies (‘maaien’ *to mow*; $n = 8$)

and (4) words containing graphemes that need to be learnt by heart (e.g., ‘geit’ /xEit/ *goat* is spelled with ‘ei’, not ‘ij’ $n = 10$). The teacher introduced the target word, followed by a sentence containing the target. The target word was then repeated twice. The dictation task was divided over three separate classroom-based sessions conducted within a timespan of 1 week.

We used two sets of stimuli. These versions did not differ in terms of the word frequencies and age of acquisition, see Blikendaal et al. (2024). Dictation version did not impact on the pattern of findings: There was no effect of dictation version and no interaction between group and dictation version.

For each word, it was tallied whether the word was spelled correctly or not. Per child, a mean total proportion correct was calculated across all targets. Cronbach’s alpha indicated good reliability (Version1: 0.948, Version2: 0.922).

Writing Task

To measure spelling outcomes in a writing task, a pen-and-paper classroom-based writing task was administered by the teacher. Children were asked to write down a text on the basis of a prompt (‘At this school the Monday starts with ...’). Children were free to write what they wanted and were given 10 min to write a text. The numbers of words used in the text were tallied. There was no significant difference in mean number of words between the monolingual ($M = 79.1$, $SD = 31.3$) and bilingual children ($M = 85.9$, $SD = 31.8$; $t [138] = 1.202$, $p = 0.242$). There was considerable variation between children in the text length they produced. Therefore, the total number of spelling errors (there could be more than one error in a word) was divided by the number of words in the text. The findings were the same when the outcome measure was number of words with at least one error divided by number of words in the text.

Procedure

Data stem from a cross-sectional study focused on spelling in children with DLD compared with typically developing children. Data were obtained in the winter of 2019–2020. It was approved by the Ethical Assessment Committee of the Research Institute of Child Development and Education at the University of Amsterdam (2019-CDE-11491), in line with ALLEA, and thereby following human subjects guidelines. Parents of participants signed an informed consent form. The dictation sessions preceded the writing task.

Results

Data Screening

There were no outliers (z -scores $< > 3.29$) on the CBST and dictation measures. For the writing task, there were two positive outliers, both monolingual children with DLD. These outliers were retained in the dataset as there was no reason to exclude them. The findings did not change if they were excluded.

Skewness and kurtosis were in the acceptable range. The pattern of findings was exactly the same on nonparametric testing.

Spelling Outcomes

Table 2 presents the findings per spelling task.

For the CBST, spelling assessment grade level is more than 1.5 years below students' actual grade, pointing to spelling difficulties. Only 17% of the monolingual and 14% of the bilingual DLD group were assessed on a CBST that was congruent with the actual grade level or half a year lower. This distribution did not differ between the groups $\chi(1) = 0.202, p = 0.698$. The majority of both groups thus showed spelling difficulties compared with typically developing peers.

A multivariate analysis of variance with spelling outcomes of the three tasks and group does not yield a significant multivariate effect, Wilk's Lambda (3127) = 0.872, $p = 0.457$, $\eta_p^2 = 0.020$. These findings suggest that there are no differences in spelling outcomes of the monolingual and bilingual children with DLD. This finding is endorsed by subsequent independent samples *t*-tests for each spelling measure separately (Table 2). This remained the case when separate univariate ANCOVAs were conducted with vocabulary, formulated sentences and sentence repetition as covariates for the subset of participants for whom these data were available, as well as with *t*-tests within this subset. Despite lower language outcomes in the school language, bilingual children did not obtain lower spelling outcomes.

We checked whether outcomes on the spelling tasks were correlated. This was the case, with Pearson correlations varying from moderate ($r = 0.475, p < 0.001$) to strong ($r = 0.763, p < 0.001$), also for the monolingual/bilingual groups separately.

Discussion

We made a first comparison of spelling outcomes of monolingual and bilingual children with clinically diagnosed DLD attending special education. The findings show a

Table 2. Spelling outcomes per task per group.

	Monolingual DLD				Bilingual DLD				<i>t</i> -value
	<i>M</i>	<i>SD</i>	Range	<i>N</i>	<i>M</i>	<i>SD</i>	Range	<i>N</i>	
<i>CBST</i>									
Difference between grade level and CBST assessment	1.68	0.97	0.0–4.5	87	1.72	0.99	0.0–4.5	49	0.231
Difference in years:									
0–0.5	17%			15	14%			7	
1–1.5	43%			37	37%			18	
2–2.5	28%			24	35%			17	
3–3.5	10%			9	12%			6	
4–4.5	2%			2	2%			1	
<i>Experimental dictation</i>									
Proportion correct	0.66	0.25	0.04–1.0	87	0.70	0.23	0.1–1.0	51	1.009
<i>Writing task</i>									
Spelling errors per word	0.11	0.13	0–0.68	86	0.09	0.09	0–0.3	49	1.387

* $p < 0.05$.

considerable spelling delay: the CBST provided to the children is on average 1.5 years below their actual grade level. These findings align with meta-analyses on spelling difficulties in monolingual children with DLD (Graham et al., 2020; Joye et al., 2019). Importantly, the results do not provide indications of differences between the monolingual and bilingual groups of children with DLD on three spelling tasks (CBST, a dictation task, and spelling in a short writing task). This remained the case when, for a subset of children for whom data were available, Dutch oral language abilities were taken into account.

This consistent pattern of findings suggests that bilingual children with DLD do not run a greater risk for word spelling difficulties than monolingual children with DLD in the special education context. This pattern resembles that found for word reading in monolingual and bilingual children with possible language problems (Balilah & Archibald, 2018) and DLD (de Bree, Boerma, et al., 2022). Very tentatively, the results indicate that DLD is a risk factor for poor word spelling, similar to previous meta-analyses (Graham et al., 2020; Joye et al., 2019), but bilingualism is not. However, as we think this study is the first to make such a comparison, replication and further specification of our findings is pivotal.

Ideally, a cross-linguistic longitudinal study would be conducted, similar to those that have been conducted for typically developing monolingual and bilingual children (e.g., Jongejan et al., 2007; Verhoeven, 2000). It could contain different experimental spelling measures, such as real/pseudoword spelling and text dictation/writing (e.g., Affranti et al., 2022; Czapka et al., 2019), next to more norm-based outcomes. This way, more insight can be gained in the consistency of findings across orthographies, to evaluate whether findings are the same in (semi-transparent and opaque) orthographies. Also, more insight can be gained in the consistency of spelling outcomes across tasks and across ages. Furthermore, inclusion of tests tapping assumed underlying skills of spelling (e.g., Czapka et al., 2019; Jongejan et al., 2007; Werfel et al., 2021) and information on the type and effect of instruction provided could be obtained.

Related, an important follow-up question is to what extent the current findings can be generalised to the larger population of mono- and bilingual children with DLD. This means that a comparison needs to be made between spelling outcomes of monolingual and bilingual children with DLD attending mainstream and special education. Next to differences between these DLD groups, there might be differences in the educational curriculum and in teachers' instruction across these school types (Graham et al., 2022, 2023). Such a comparison should also include monolingual and bilingual typically developing children (attending mainstream education).

Evidently, future work needs to address the influence of bilingualism in more depth. We cannot draw any conclusions about whether and how the (type of) other language affects spelling in Dutch. This is an important caveat, as first language characteristics have been found to affect spelling in a second language (Figueredo, 2006). The amount of cross-linguistic transfer can differ depending on the level of literacy in the first and second language. Furthermore, we lack information about the onset of bilingualism and the amount of language input in both languages. Both variables might affect spelling outcomes in the dominant (school) language. Additionally, we have no information on socio-economic, cultural and literacy background. We cannot, therefore, establish whether and how these variables affect the spelling outcomes. Spelling is a skill that typically requires instruction (Graham & Santangelo, 2014), which takes place at school, in the dominant language. We expect that education reduces potential effects of bilingualism and background variables. Moreover, we stress that these variables are likely to affect bilinguals'

language outcomes and could explain lower spelling outcomes, while the current study indicated similar outcomes despite lower language outcomes.

The upside of our findings is that bilingualism does not seem to have a negative effect on upper elementary children with DLD's spelling outcomes in the school language. This means that bilingualism should not be taken to be the cause of spelling delays, similar to word reading (Geva et al., 2019). Literacy interventions should be started as soon as spelling delays arise, irrespective of proficiency in the school language. The downside of the findings is that spelling difficulties are present in children with DLD. As language and literacy are keys to further learning and for participation, these children face a double challenge. The findings confirm that education and support services for these children need to target both.

Acknowledgements

We thank the teachers for providing us with the children's information. We are grateful to Britt Hakvoort, Liza van den Bulk and Roxette van den Bosch for assistance in recruitment and data collection.

Conflict of Interest Statement

No conflict of interest declared.

Data Availability Statement

Data are available on reasonable request.

References

- Affranti, A., Tobia, V., Bellocchi, S., & Bonifacci, P. (2022). Spelling and writing skills in minority-language bilingual children exposed to a transparent orthography: Multilevel profiles and concurrent predictors. *International Journal of Bilingual Education and Bilingualism*, 27(1), 1–18. <https://doi.org/10.1080/13670050.2022.2132813>
- Alloway, T. P., Tewelde, F., Skipper, D., & Hijar, D. (2017). Can you spell dyslexia without SLI? Comparing the cognitive profiles of dyslexia and specific language impairment and their roles in learning. *Research in Developmental Disabilities*, 65, 97–102. <https://doi.org/10.1016/j.ridd.2017.04.013>
- Apel, K., Wilson-Fowler, E. B., Brimo, D., & Perrin, N. A. (2012). Metalinguistic contributions to reading and spelling in second and third grade students. *Reading and Writing*, 25, 1283–1305. <https://doi.org/10.1007/s11145-011-9317-8>
- Balilah, A. M. A., & Archibald, L. M. D. (2018). Sentence recall and single word reading in monolingual children and same-age English language learners with and without parental concerns about language development. *Canadian Journal of Speech-Language Pathology and Audiology*, 42(2), 81–93. https://www.cjslpa.ca/files/2018_CJSLPA_Vol_42/No_02/CJSLPA_PROOF_Vol_42_No_2_Full_Issue.pdf#page=6
- Bishop, D. V., McDonald, D., Bird, S., & Hayiou-Thomas, M. E. (2009). Children who read words accurately despite language impairment: Who are they and how do they do it? *Child Development*, 80(2), 593–605. <https://doi.org/10.1111/j.14678624.2009.01281.x>

- Bliekendaal, W. I., van den Boer, M., Hakvoort, B. E., & de Bree, E. H. (2024). Spelling abilities of Dutch children with developmental language disorder on words differing in complexity. *Reading and Writing*. <https://doi.org/10.1007/s11145-024-10593-w>
- de Bree, E., Boerma, T., Hakvoort, B., Blom, E., & van den Boer, M. (2022). Word reading in monolingual and bilingual children with developmental language disorder. *Learning and Individual Differences*, 98, 102185. <https://doi.org/10.1016/j.lindif.2022.102185>
- de Bree, E., Lammertink, I., van Witteloostuijn, M., & Rispens, J. (2022). Word-level spelling of children with dyslexia and developmental language disorder. *Stem-, Spraak- en Taalpathologie*, 27, 24–51. <https://doi.org/10.21827/32.8310/2022-SG-24>
- Brizzolaro, D., Gasperini, F., Pfanner, L., Cristofani, P., Casalini, C., & Chilosi, A. M. (2011). Long-term reading and spelling outcome in Italian adolescents with a history of specific language impairment. *Cortex*, 47(8), 955–973. <https://doi.org/10.1016/j.cortex.2011.02.009>
- Cito. (2014). *Handleiding. Cito Volgstelsysteem. Primair en Speciaal Onderwijs. Spelling 3.0. Groep 3 tot en met 8 [Manual. Cito. Primary and Special Education. Spelling, version 3.0. Grades 1 to 6]*. Cito.
- Czapka, S., Klässert, A., & Festman, J. (2019). Executive functions and language: Their differential influence on mono-vs. multilingual spelling in primary school. *Frontiers in Psychology*, 10, 97. <https://doi.org/10.3389/fpsyg.2019.00097>
- Figueredo, L. (2006). Using the known to chart the unknown: A review of first-language influence on the development of English-as-a-second-language spelling skills. *Reading and Writing: An Interdisciplinary Journal*, 19(8), 873–905. <https://doi.org/10.1007/s11145-006-9014-1>
- Georgiou, G. K., Torppa, M., Landerl, K., Desrochers, A., Manolitsis, G., de Jong, P. F., & Parrila, R. (2020). Reading and spelling development across languages varying in orthographic consistency: Do their paths cross? *Child Development*, 91(2), e266–e279. <https://doi.org/10.1111/cdev.13218>
- Gerrits, E., de Jong, J., Zwitserlood, R., & Klatte, I. (2019). The Netherlands vignette. In J. Law, C. Murphy, C. McKean, & E. Þórðardóttir (Eds.), *The theory and practice of managing the child with language impairment—Across Europe and beyond* (pp. 339–350). Routledge.
- Geva, E., Xi, Y., Massey-Garrison, A., & Mak, J. Y. (2019). Assessing reading in second language learners: Development, validity, and educational considerations. In D. A. Kilpatrick, R. M. Joshi, & R. K. Wagner (Eds.), *Reading development and difficulties. Bridging the gap between research and practice* (pp. 117–155). Springer. <https://doi.org/10.1007/978-3-030-26550-2>
- Graham, S., Berninger, V. W., Abbott, R. D., Abbott, S. P., & Whitaker, D. (1997). Role of mechanics in composing of elementary school students: A new methodological approach. *Journal of Educational Psychology*, 89(1), 170–182. <https://doi.org/10.1037/0022-0663.89.1.170>
- Graham, S., Ciullo, S., & Collins, A. (2023). Do special and general education teachers' mindset theories about the malleability of writing and intelligence predict their writing practices? *Journal of Learning Disabilities*, 75(2), 63–78. <https://doi.org/10.1177/00222194231181915>
- Graham, S., Collins, A. A., & Ciullo, S. (2022). Special and general education teachers' beliefs about writing and writing instruction. *Journal of Learning Disabilities*, 56(3), 163–179. <https://doi.org/10.1177/00222194221092156>
- Graham, S., Harris, K. R., & Hebert, M. (2011). It is more than just the message: Analysis of presentation effects in scoring writing. *Focus on Exceptional Children*, 44(4), 1–12. <https://doi.org/10.17161/foec.v44i4.6687>
- Graham, S., Hebert, M., Fishman, E., Ray, A. B., & Rouse, A. G. (2020). Do children classified with specific language impairment have a learning disability in writing? A meta-analysis. *Journal of Learning Disabilities*, 53(4), 292–310. <https://doi.org/10.1177/0022219420917338>
- Graham, S., & Santangelo, T. (2014). Does spelling instruction make students better spellers, readers, and writers? A meta-analytic review. *Reading and Writing*, 27(9), 1703–1743. <https://doi.org/10.1007/s11145-014-9517-0>
- Hoff, E., Core, C., Place, S., Rumiche, R., Senor, M., & Parra, M. (2012). Dual language exposure and early bilingual development. *Journal of Child Language*, 39(1), 1–27. <https://doi.org/10.1017/S0305000910000759>
- Jongejan, W., Verhoeven, L., & Siegel, L. S. (2007). Predictors of reading and spelling abilities in first- and second-language learners. *Journal of Educational Psychology*, 99(4), 835–851. <https://doi.org/10.1037/0022-0663.99.4.835>
- Joye, N., Broc, L., Olive, T., & Dockrell, J. (2019). Spelling performance in children with developmental language disorder: A meta-analysis across European languages. *Scientific Studies of Reading*, 23(2), 129–160. <https://doi.org/10.1080/10888438.2018.1491584>
- Kohnert, K. (2010). Bilingual children with primary language impairment: Issues, evidence and implications for clinical actions. *Journal of Communication Disorders*, 43(6), 456–473. <https://doi.org/10.1016/j.jcomdis.2010.02.002>

- Kort, W., Compaan, E., Schittekatte, M., & Dekker, P. (2008). *Clinical evaluation of language fundamentals (CELF-4^{NL})*. Nederlandse Versie. Handleiding [Dutch version. Manual]. Pearson Assessment and Information.
- Leonard, L. B. (2014). *Children with specific language impairment*. MIT Press.
- McArthur, G. M., Hogben, J. H., Edwards, V. T., Heath, S. M., & Mengler, E. D. (2000). On the “specifics” of specific reading disability and specific language impairment. *Journal of Child Psychology and Psychiatry*, 41(7), 869–874. <https://doi.org/10.1111/1469-7610.00674>
- McCarthy, J. H., Hogan, T. P., & Catts, H. W. (2012). Is weak oral language associated with poor spelling in school-age children with specific language impairment, dyslexia or both? *Clinical Linguistics & Phonetics*, 26(9), 791–805. <https://doi.org/10.3109/02699206.2012.702185>
- NVLF. (2017). *Richtlijn taalontwikkelingsstoornissen [Guideline developmental language disorders]*. NVLF.
- Ouellette, G. (2010). Orthographic learning in learning to spell: The roles of semantics and type of practice. *Journal of Experimental Child Psychology*, 107(1), 50–58. <https://doi.org/10.1016/j.jecp.2010.04.009>
- Pearson, B. Z., Fernandez, S. C., Lewedeg, V., & Oller, D. K. (1997). The relation of input factors to lexical learning by bilingual infants. *Applied PsychoLinguistics*, 18(1), 41–58. <https://doi.org/10.1017/S0142716400009863>
- Schlichting, L. (2005). *Peabody Picture Vocabulary Test-III-NL. Dutch version*. Harcourt Assessment B.V.
- Scuccimarra, G., Cutolo, L., Fiorillo, P., Lembo, C., Pirone, T., & Cossu, G. (2008). Is there a distinct form of developmental dyslexia in children with specific language impairment? Findings from an orthographically regular language. *Cognitive and Behavioral Neurology*, 21(4), 221–226. <https://doi.org/10.1097/WNN.0b013e31818a5caf>
- Snowling, M. J., Nash, H. M., Gooch, D. C., Hayiou-Thomas, M. E., Hulme, C., & Wellcome Language and Reading Project Team. (2019). Developmental outcomes for children at high risk of dyslexia and children with developmental language disorder. *Child Development*, 90(5), e548–e564. <https://doi.org/10.1111/cdev.13216>
- Stichting Siméa. 2016 *Handreiking TOS bij meertaligheid: Doelgroepbepaling [Guideline DLD and multilingualism: Target group determination]* https://simea.nl/media/richtlijnen/simea_handreiking_meertaligheid_tos.pdf
- Tomesen, M., Wouda, J., & Horsels, L. (2019). *Wetenschappelijke verantwoording Spelling 3.0 digitaal voor groep 7 [Scientific justification Spelling 3.0 digital for Grade 5]*. Cito.
- Tomesen, M., Wouda, J., & Horsels, L. (2020). *Wetenschappelijke verantwoording Spelling 3.0 digitaal voor groep 8 [Scientific justification Spelling 3.0 digital for Grade 6]*. Cito.
- Unsworth, S. (2013). Current issues in multilingual first language acquisition. *Annual Review of Applied Linguistics*, 33, 21–50. <https://doi.org/10.1017/S0267190513000044>
- Vandewalle, E., Boets, B., Ghesquiere, P., & Zink, I. (2012). Development of phonological processing skills in children with specific language impairment with and without literacy delay: A 3-year longitudinal study. *Journal of Speech, Language, and Hearing Research*, 55(4), 1053–1067. [https://doi.org/10.1044/1092-4388\(2011\)10-0308](https://doi.org/10.1044/1092-4388(2011)10-0308)
- Verhoeven, L. (2000). Components in early second language reading and spelling. *Scientific Studies of Reading*, 4(4), 313–330. https://doi.org/10.1207/S1532799XSSR0404_4
- van Weerdenburg, M., Verhoeven, L., Bosman, A., & van Balkom, H. (2011). Predicting word decoding and word spelling development in children with specific language impairment. *Journal of Communication Disorders*, 44(3), 392–411. <https://doi.org/10.1016/j.jcomdis.2010.12.002>
- Werfel, K. L., Al Otaiba, S., Kim, Y.-S., & Wanzek, J. (2021). Linguistic predictors of single-word spelling in first-grade students with speech and/or language impairments. *Remedial and Special Education*, 42(2), 118–128. <https://doi.org/10.1177/0741932520918858>
- Zhao, J., Quiroz, B., Dixon, L. Q., & Joshi, R. M. (2016). Comparing bilingual to monolingual learners on English spelling: A meta-analytic review. *Dyslexia*, 22(3), 193–213. <https://doi.org/10.1002/dys.1530>

Elise de Bree is a full professor of Orthopedagogy at the University of Amsterdam (the Netherlands). She held the Royal Dutch Auris Group endowed chair of DLD in (more) inclusive education at Utrecht University until 2024. Her research is focused on spoken and written language acquisition and language and learning disorders in the educational and healthcare context.

Wendy Blikendaal is a researcher and PhD student at the Royal Dutch Auris Group and the University of Amsterdam. Her research focuses on the spelling abilities of children with developmental language disorder.

Madelon van den Boer is an assistant professor of Orthopedagogy at the University of Amsterdam. Her research focuses on the acquisition of language, reading, spelling and math skills within the educational context, with a focus on evaluating the effectiveness of instructional practices and intervention programmes.

Received 3 November 2023; revised version received 8 November 2024.

Address for correspondence: Elise H. de Bree, University of Amsterdam, Research Institute of Child Development and Education, P.O. Box 15780, 1001 NG Amsterdam, The Netherlands. Email: e.h.debree@uva.nl