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RESEARCH REPORT

Spelling problems after early oral language difficulties

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Abstract

Recent research has stated that early oral language acquisition difficulties are related to reading and writing difficulties. Children with developmental language disorder (DLD) experience difficulties with several dimensions of language. In this study we focus on the specific difficulties of children with DLD in spelling. We examine the impact of lexicality and length in written production of Spanish-speaking children with DLD. A total of 18 children with language difficulties (M_{age} = 8;4) were compared with age-matched children (M_{age} = 8;2). Participants completed a spelling-to-dictation task of words and pseudowords, where length was manipulated. A digital tablet was used to collect data and obtain measures of accuracy, latencies and total writing durations. Results showed that children with DLD produced more errors, longer latencies and longer writing durations than age-matched children. Regarding accuracy, analysis of the errors shows that children in the control group produce few errors, most being substitutions, while children with DLD made more errors and of more varied categories. Moreover, they were more affected by length on writing accuracy than the control group.

KEYWORDS
language problems, spelling, writing, Spanish, oral difficulties

WHAT THIS PAPER ADDS

What is already known on this subject

Children with language difficulties are more likely to present reading difficulties. There are fewer studies analysing the impact of oral language difficulties in writing skills.

What this paper adds to existing knowledge

The study suggests that children with oral language difficulties also have impairments in spelling, impacting on accuracy, duration and reaction time, possibly related to poor phonological working memory.

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What are the potential or actual clinical implications of this work?

This study highlights the need to emphasize early oral intervention and language-related processing skills to help prevent written language difficulties.

INTRODUCTION

Previous studies have shown that children with poorer oral language skills are more likely to present literacy difficulties (Bishop & Snowling, 2004; Catts et al., 2002). However, most of these studies have focused on the relation between oral language and reading problems (Aguilar-Mediavilla et al., 2014; Buil-Legaz et al., 2015; Snowling et al., 2000; Stothard et al., 1998) and there are fewer studies analysing the impact of oral language difficulties (LD) over writing skills (Broc et al., 2021; Joye et al., 2019).

Writing is a very complex task, as it implies several cognitive processes, and many models have tried to explain the steps that people follow to write (Berninger et al., 1997; Berninger & Amtmann, 2003; Chenoweth & Hayes, 2001; Juel et al., 1986). Chenoweth & Hayes (2001) suggested that text production implies at least four cognitive processes: a proposer, a translator, a transcriber, and a reviser or evaluator. The proposer is responsible for generating ideas, the translator converts the ideas into a linguistic form, the transcriber includes the orthographic retrieval (i.e., spelling) and the graphomotor execution (handwriting), and finally the evaluator judges the output appropriateness. Focusing on spelling, the dual-route theories (Coltheart et al., 2001) and the dual-route connectionist model (Houghton & Zorzi, 2003) suggest that two strategies could be used for spelling. Progressive knowledge of both routes, sub-lexical and lexical spelling strategies, is needed to spell correctly (Hillis & Caramazza, 1991; Patterson, 1986). With regards to the sub-lexical or assembled route, possible graphemes corresponding to the pertinent sounds are activated in a phoneme-to-grapheme conversion process using the sound–spelling correspondences of the appropriate language (Patterson, 1986). Sub-lexical processing is responsible for spelling unknown words or non-existent pseudo-words such as 'cigbel'. The use of this route is prevalent while children are learning to write, because for a novice speller a real word might appear as a pseudo-word due to lack of familiarity. This is specially the especially in children learning transparent orthographies, such as Spanish, in which most phonemes are specifically mapped to only one grapheme (Caravolas, 2004; Sprenger-Charollesa et al., 2006), so most of the words can be written accurately using the sub-lexical route. The *lexical route*, on the other hand, consists of accessing word-specific memory, for instance, activating the specific spelling of a given known word such as 'friend'. Lexical route is especially relevant when sounds are not unequivocally mapped to only one grapheme (e.g., the 'i' in 'pint'). In these cases, spelling can only be accomplished correctly by activating the appropriate item in the lexicon (Juel et al., 1986). Following this, the analysis of the errors has been a useful methodology for understanding the spelling strategies. According to this theoretical framework, the analysis of the errors has been a useful methodology for understanding the spelling strategies (Kohnen et al., 2008; Rapp et al., 2002). Phonologically plausible errors, for irregular words, would be compatible with the absence of orthographic representations and greater use of phonological codes. In Spanish, some words (e.g., vaso [*glass*]) contain at least one phoneme with two spelling options (e.g., /'**b**aso/: **v**aso—correct, **b**aso—incorrect), so the pronunciation is preserved despite the misspelling. In contrast, phonologically non-plausible errors would imply a significant problem in achieving the phoneme–grapheme correspondence, associated with a phonological deficit because, in this case, the misspelling (e.g., plapa instead of plata [*silver*]) changes the pronunciation of the word (Angelelli et al., 2004; Suárez-Coalla et al., 2016).

Additionally, a strong relationship between spelling (central processes) and graphomotor execution (peripheral processes) was considered by handwriting models (Kandel et al., 2011). Even though, the impact of linguistic variables on graphomotor execution seems to depend on the task, age and literacy skills (Olive & Kellogg, 2002). For example, it has been reported that lexical frequency affects writing latencies in both children and adults (Afonso et al., 2018); but orthographic consistency (Suárez-Coalla et al., 2018) and lexical frequency (Afonso et al., 2018) seem to impact on writing durations around 8-year-old Spanish children, and length effect is stronger for 8- than for 10-year-old children (Afonso et al., 2020). Considering children with dyslexia, Afonso et al. (2020) found they show larger effects of consistency, lexical frequency and length on writing latencies than the control groups, interpreted as a marker of a sub-lexical strategy for spelling. In their study, the effect of lexical frequency on writing durations was absent for children with dyslexia, considered evidence of difficulties at the lexical level.

Finally, the role of working memory (WM) has also been recognized, not only in writing composition but also in tasks such as copy or spelling-to-dictation. Regarding the spelling-to-dictation tasks, WM has been considered responsible for maintaining the information on the

orthographic form of words during the graphomotor execution (Cuetos, 1991; Tainturier & Rapp, 2003). In addition, Spanish adults with dyslexia demonstrated a larger length effect than controls in the inter-letter interval durations and errors, being considered a result of graphemic buffer problems (Afonso et al., 2015). Likewise, Spanish children with dyslexia also appear to show problems in orthographic WM (Afonso et al., 2020).

Regarding children with developmental language disorder (DLD), writing difficulties often occur in this population. Children with DLD are defined as children that present persistent LD which impair communication and/or learning in everyday life, without a medical condition that can explain it, such as a brain injury, genetic conditions or disorders, a hearing loss, an autism spectrum disorder or an intellectual disability, and are unresolved at 5 years of age (Bishop et al., 2016). Children with DLD experience difficulties with several dimensions of language and with general processing skills. In this study, we will focus on the specific difficulties of children with DLD in spelling.

Problems with spelling in children with DLD have been associated with difficulties in critical skills for reading and spelling: phonology, morphology, and orthographic knowledge (Berninger et al., 2006a; Catts et al., 2002; Mackie et al., 2013). As the Triple Word Form Theory states (Berninger et al., 2006b), these three types of knowledge are stored and then activate for spelling. In addition, some studies about spelling errors demonstrate that children use that information for spelling (Bahr et al., 2009). Phonological errors (Broc et al., 2013) and grammatical errors (Windsor et al., 2000) are frequent in these children, and programs designed to improve their spelling include grapheme–phoneme correspondence tasks, as well as activities promoting active review of spelling skills, especially focused on ensuring comprehension of, among other aspects, grapheme–phoneme and linear correspondence, consonant blends, suffixes, etc. In fact, children with DLD have shown difficulties in manipulating segments of words and in maintaining verbal units active in phonological WM (Buil-Legaz et al., 2016).

Regarding the development of DLD, Snowling et al. (2000) observed normal spelling skills in children with LD resolved by 5;5 but poorer skills in those children with persistent LD. Similarly, Snowling et al. (2016) found that both children who resolved LD in middle childhood (8 years old) and children with persistent difficulties perform worse than their age controls in literacy tasks including spelling, although the group of children resolving LD had better scores than those with persistent difficulties.

Evidence of a recent meta-analysis of spelling performance in children with DLD, considering 31 research findings, showed that participants with DLD performed worse than their peers in a typically developing (TD) group, regardless of the characteristics of the spelling task, and that these results are modulated when participants had additional phonological or reading difficulties (Joye et al., 2019).

Nevertheless, some authors have not found a direct relationship between oral LD and spelling, and it seems that the type of spelling task plays a crucial role in this association. Mackie and Dockrell (2004) did not observe differences in the number of spelling errors between a group of children with DLD and their age matched peers in a written narrative task, although they noted that children with DLD used another word when there was one that they did not know how to spell correctly. In this sense, Joye et al. (2019) indicated that, among other factors such as age, language spoken, or profile of difficulties, the nature of the tasks used in the assessment act as a moderator of the impact of DLD on orthographic performance. For instance, the difficulties of children with DLD might not be evident when they are compared with their TD peers in too easy or too difficult tasks.

In children with DLD, when considering the spelling errors, it is observed that, in the early stages of schooling, participants make more errors of omission while their TD peers make mostly substitutions, and these differences between errors of omission and substitution tend to disappear with age (Nauclér, 2004). When considering the errors and their origin, some researchers focus on oral language (Berninger et al., 2006a), while others refer to reading and its difficulties (McCarthy et al., 2012; Swanson et al., 2003). With regards to the latter, lexical and sub-lexical deficits have been postulated as the underlying causes of poor spelling abilities in children with dyslexia (Angelelli et al., 2004), so these same deficits could help explain the difficulties in spelling tasks in children with oral LD, who usually present reading difficulties too. At the same time, reading difficulties and their relationship with oral LD could be related to spelling performance. As reported by Bishop and Snowling (2004), specific patterns of oral language deficit are related to different profiles of reading deficiency, with the relationship between DLD and dyslexia being directly dependent on the specific language profile of each child.

This study assesses, and better understands, the spelling abilities of a group of Spanish-speaking children with a history of oral LD. Previous studies addressing this topic have focused on spelling accuracy in English-speaking children. Accuracy is a very relevant aspect of writing; however, spelling in transparent orthographies is much easier than in opaque orthographic systems (e.g., 80% versus < 40% of correctly spelled words in the second year of primary school in Spanish and British pupils, respectively; Llaurado & Dockrell, 2020). This could make this measure less sensitive in our context due to the reduction of the

potential variability of the error rates in languages with transparent orthography. With this in mind, and following previous studies that have suggested that spelling difficulties in children with dyslexia are reflected in longer writing latencies and writing durations (Afonso et al., 2020), we also gathered kinematic measures of the written response, operationalized as written latencies, and total writing durations. Analysis of spelling production, both errors and kinematic measures during graphomotor execution, can provide insight into how DLD children process spelling. The impact of lexical and sub-lexical strategies and the role of WM were evaluated through the lexicality (words and pseudo-words) and the length of stimuli used in a spelling-to-dictation task.

Considering previous studies and taking into account that children with oral difficulties have been shown to have poor abilities in phonological WM and lexical retrieval (Buil-Legaz et al., 2016; McMurray et al., 2019), we could expect to find:

longer latencies by DLD children, that is, DLD will take longer to start the writing response after hearing the stimuli;

length effect on total writing durations in both groups, especially for pseudo-words, and a larger length effect in DLD children, indicating a predominant use of a sub-lexical strategy;

a worse performance by DLD children than the control group in terms of spelling accuracy, with a clear length effect and more errors of omissions than their pairs in the control group.

METHOD

Participants

A total of 36 participants took part in this study. Participants in the DLD group were 18 children with early language difficulties: DLD (aged 7;0–11;5, M_{age} = 8;4, SD = 1.25), recruited from the Hospital of Cabueñes, Phoniatrics Department, and the Speech language Impairment Association of Asturias, Spain. All were native Spanish speakers, as confirmed by the speech therapist, and came from families of middle-class socio-economic status. Children with DLD were compared with a chronologically age-matched control group. This group consisted of 18 children: CON (aged 7;0–11;6, M_{age} = 8;2, SD = 1.29), recruited from primary schools in the same area. All participants in this study had an intelligence quotient (IQ) of 75 or higher according to the Coloured Progressive Matrices of RAVEN (Raven, 1998). In addition, participants had normal, or correct to normal, vision and did not present any cognitive impairment apart from some LD. Therefore, participants were excluded from the study when a physical or sensory disability existed.

The research design was approved by the Clinical Research Ethics Committee of the Hospital of Cabueñes in Asturias, Spain. The study was developed in accordance with the Declaration of Helsinki and the Spanish Law of Personal Data Protection (15/1999 and 3/2018) principles, and an informed written consent from all parents was obtained before performing the study.

Materials

The experimental task consisted of a spelling-to-dictation task of isolated words. A total of 48 stimuli were selected, 24 words (lexical frequency = 133.17, SD = 79.40) and 24 pseudo-words, half were short (four letters, two syllables) and half long (6–8 letters, three syllables). To obtain the lexical frequency, we considered the values provided by ONESC (database of orthographic neighbors for Spanish read by children; Martínez Martín & García Pérez). This database provides us a measure of frequency by age of each word and, to some extent, helps us to control that the stimuli present are known to the participants. The difference in word frequency between the short and long words (i.e., 6–8 letters, three syllables) was not significant. The pseudo-words were created from the words, where the first syllable of all the words was maintained and the following syllables exchanged between words. In this sense, words and pseudo-words were matched by the first syllable (e.g., 'soldado' [*soldier*] and 'solcado') and syllable frequency. In addition, four stimuli (two words and two pseudo-words) were included as practice in order to familiarize participants with the task (see Table A1 in Appendix A). The auditory stimuli were previously recorded using an H4n voice recorder and a microphone Ht2-P Audix and edited with Praat software. The experiment lasted around 20 min.

Procedure

Children with DLD were tested individually at the hospital, in a quiet room, while CON children were tested in their school. Children were asked to write the stimulus they listened to, in lower case, as quickly and accurately as possible. The researcher gave the following verbal instructions to them:

This is a writing task. You will hear words through these headphones. You have to write fast, but do not make mistakes. When you tell me you are ready, I will press the button to start. When you have heard the word you can write it on the first line with this pen.

Each trial started with an auditory signal and a fixation point, which remained on the computer screen for 500 ms. After that, the auditory stimulus was presented. Children wrote the stimuli on a lined sheet of paper stuck on top of a digital tablet (Wacom, Intuos 5) using an inking pen. Once the participants finished a response, they were asked to move the pen into the following line but avoiding the contact with the paper. Then the experimenter clicked the left button of the mouse to present the next stimulus. Four-word lists and four pseudo-word lists were created randomizing the order of the stimuli. Each participant was presented with one of the word lists and one of the pseudo-word lists. Ductus software (Guinet & Kandel, 2010) was used for the stimuli presentation and for the recording of the written responses, taking as a starting point the first contact of the pen on the tablet at the beginning of the word, and as the end the last pen raised on the same word.

Statistical analysis

For the statistical analyses, we considered accuracy, total duration (the time between the pencil contact with the digitizer and the end of stimulus writing) and writing latencies (the time lapse between the presentation of the stimulus and the first pencil contact with the digitizer). Only the correct responses were included in these analyses, so responses with misspellings, self-corrections or missing data were removed from these analyses (20.68%). Finally, we classified the errors considering type: substitutions, omissions and additions of letters; type of unit affected: vocal or consonant; and lexicalizations in pseudo-words. Then, we conducted a qualitative analysis investigating the distribution of different error types in the two groups of participants.

RESULTS

We conducted different repeated-measures analyses of variance (ANOVAs) for our each of the three dependent variables: writing latencies, total duration and accuracy. The analyses included group (CON versus DLD) as the between-groups independent variable, as well as lexicality (word versus pseudo-word) and word length (long versus short) as within-group independent variables.

Regarding writing latencies, that is, the time lapse between the presentation of the stimulus and the first pencil contact with the digitizer, the analysis indicated a significant main effect of group, $F(1, 34) = 4.970$, $p = 0.033$, $\eta^2_p = 0.128$. As can be seen in Figure 1(a) participants in the control group produced faster writing latencies than those in the DLD group. The effects of lexicality, $F(1, 34) = 1.096$, $p = 0.302$, and length, $F(1, 34) = 3.377$, $p = 0.075$, were not significant. The interactions were not significant either, Fs < 2.087, ps > 0.158.

As for total writing durations (Figure 1b), the model indicated a significant main effect of length, with longer words yielding longer durations, $F(1,34) = 253.959$, $p < 0.001$, $\eta^2_p = 0.882$. The main effects of lexicality, $F(1,34) = 1.642$, $p = 0.209$, and group, $F(1,34) = 2.021$, $p = 0.164$, were not significant. Interestingly, we obtained a significant interaction between group and lexicality, $F(1,34) = 7.129$, $p = 0.012$, $\eta^2_p = 0.173$. Post-hoc comparisons (Tukey correction) indicated that whereas participants in the DLD group produced significantly longer writing durations for words compared with pseudo-words, $t = 2.794$, $p = 0.04$, no significant differences appeared between writing durations for words and pseudo-words in the control group, $t = -0.982$, $p = 0.761$. The rest of the interactions were not significant, Fs < 2.021, ps > 0.164.

Finally, the analysis including accuracy data (Figure 1c) indicated significant main effects of group, $F(1,34) = 31.809$, $p < 0.001$, $\eta^2_p = 0.483$, length, $F(1,34) = 29.487$, $p < 0.001$, $\eta^2_p = 0.464$, and lexicality, $F(1,34) = 18.700$, $p < 0.001$, $\eta^2_p = 0.355$. Accuracy was significantly higher for the control group, for real words and for short words. Moreover, significant interactions also emerged between group and length, $F(1,34) = 15.044$, $p < 0.001$, $\eta^2_p = 0.307$. Post-hoc comparisons (Tukey correction) indicated that participants in the DLD group were more accurate for short than long items (both words and pseudo-words), $t = 6.582$, $p < 0.001$. In contrast, stimuli length did not influence the accuracy of the participants in the control group, $t = 1.097$, $p = 0.694$. Differences between groups were significant both for short, $t = 2.852$, $p = 0.03$, and long stimuli, $t = 6.831$, $p < 0.001$. The interaction between lexicality and length was also significant, $F(1,34) = 4.628$, $p = 0.039$, $\eta^2_p = 0.120$. However, given that this interaction is not directly relevant for our study, we did not analyse it further. In contrast, the interaction between lexicality and group was not significant, $F(1,34) = 0.155$, $p = 0.697$. Nor it was the three-way interaction between lexicality, length and group, $F(1,34) = 0.129$, $p = 0.722$.

Analysis of the errors

The analysis of the errors showed that the control group made few errors, most of which were substitutions. Regarding real words, 100% were substitutions errors. In the category of short pseudo-words, they made mostly substitutions (91.60%) and a low percentage of additions (8.40%). Finally, with regards to long pseudo-words, the classification of errors also included a low percentage of additions (3.70%), omissions (14.80%), and mostly substitutions (81.50%). In contrast, the group with DLD showed

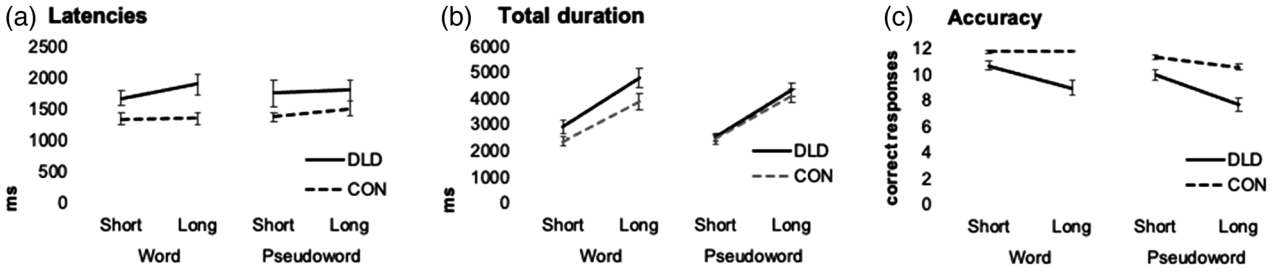

FIGURE 1 Means and standard errors of latencies (a), total duration (b) and accuracy (c) for the control and DLD groups

a slightly different pattern in the classification of errors, committing more and of more varied categories, although most of them were also substitutions. Specifically in short words, they made mostly substitutions (69.60%), and with omissions (17.40%) and additions (13%). Regarding long words (i.e., 6–8 letters, three syllables), the percentage of substitutions was about half (52.70%) and omissions (38.20%), with a low percentage of additions (9.10%). In the category of pseudo-words, substitutions continued to be the most committed errors, but with a relatively high percentage of omissions in long pseudo-words. In short pseudo-words, children in the DLD group made substitutions (66.70%), omissions (19.40%) and additions (13.90%). Finally, in long items from pseudo-words, the percentage of errors was mostly composed of substitutions (59.20%), a high percentage of omissions (38.20%) and a low percentage of additions (2.60%). Besides, considering whether the error affects a vowel or a consonant, regardless of the type of error, we found that most errors occurred in consonants, both in the control group (93%) and in the group with DLD (71%). Finally, children with DLD committed a 13% of lexicalizations, while children without DLD committed a 15% of them.

Summary of the results

In comparison with TD peers, children with DLD produced longer writing latencies regardless of the length of words/pseudo-words and longer total writing durations, specifically for real words. They also committed more mistakes in general and their accuracy decreased for longer words.

DISCUSSION

The aim of this study was to examine the spelling abilities of a group of Spanish-speaking children, from 7 to 11;5 years old, with a history of oral LD, in terms of latencies, total duration and accuracy through a spelling-to-dictation task of words and pseudo-words varying in length.

With regards to writing latencies, that is, the time lapse between the presentation of the stimulus and the first pen contact with the digitizer, we observed differences between the two groups, with participants in the DLD group showing longer latencies than those in the control group. As for total writing durations, considered as the time between when the pen contacts the digitizer and the end of stimulus writing, our results showed that children with DLD were slower writing real words compared with pseudo-words. These findings are in line with the hypothesis that children with oral difficulties have poor abilities manipulating segments of words in phonological WM and to access to lexical units (Buil-Legaz et al., 2016; McMurray et al., 2019). In fact, orthographic, phonological and morphological awareness play a fundamental role in spelling, as evidenced within the triple word theory (Berninger et al., 2006b). Therefore, the quality of the representations of the words at orthographic, morphological and phonological levels is crucial to understand the internal form of words, which is decisive for spelling, and provides an important support for the development of intervention programmes (Moxam, 2020). These results would fit with previous studies on writing latencies in population with dyslexia (Afonso et al., 2020; Suárez-Coalla et al., 2017). In this sense, some studies indicate that sub-lexical skills affect spelling and that phonological awareness could mediate the relationship between oral language and spelling in all languages (Moll et al., 2014). Nevertheless, the fact that, in our study, children in the DLD group produced longer writing durations for real words compared with pseudo-words suggests that their lexical processing is also affected to some extent. Writing durations of children with DLD in our study did not benefit from the fact that they were processing real words. In fact, they were even longer than those corresponding to pseudo-words, suggesting that children in the DLD group found it difficult to access the correct lexical entry, among other possible lexical candidates (McMurray et al., 2019).

Poor phonological WM or difficulties with the phoneme-to-grapheme rules could account for the accuracy execution among children with DLD in our study. We hypothesized that since Spanish has a transparent orthographic system which is easier to acquire compared

with that corresponding to other less orthographically consistent languages such as English accuracy could be less sensitive in the assessment of spelling in our context. However, our results show that our participants also present less spelling accuracy than their TD peers, as seen in other studies (Joye et al., 2019). Moreover, our data also showed a significant interaction between group and item length, whereas children in the DLD group showed lower accuracy for long, compared with short items, children in the control group showed similar accuracy rates for all items irrespective of their length. These observations are in consonance with those of previous studies showing that children with DLD made more errors in spelling tasks than their age-matched peers (Joye et al., 2019). From a qualitative point of view, both DLD and control participants showed higher percentage of errors in the consonants compared with vowels, reflecting the usual pattern for Spanish-speaking children (Tolchinsky & Teberosky, 1998). In contrast, the results showed that, compared with those in the control group, children in the DLD group made a substantial percentage of omissions, especially in the long items. These results are in line with the results that showed a greater number of omissions in the group with DLD in the early stages of schooling (Nauclér, 2004). Again, poor phonological WM could be responsible for the observed pattern of results, as writing longer words implies storing more active information in memory than shorter ones and WM difficulties might explain the high percentage of omitted graphemes in these children. However, a limitation of this study is that we did not include a direct measure of phonological WM, so this interpretation is speculative. Further studies could directly assess phonological WM to ascertain whether, indeed, there is a relationship between the poverty of phonological WM and difficulties in the performance of spelling tasks in children with DLD.

CONCLUSIONS

Individuals with early LD or poorer oral language skills are more likely to present reading difficulties. This study indicates that these impairments are also manifested in the written dimension. Our data suggest that their difficulties could be mainly related to poorer phonological WM, which affects writing accuracy, total durations, and latencies. These results highlight the need to further investigate early oral intervention of cognitive processing abilities that could act as protective factors in oral language or literacy difficulties.

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are openly available in Open Science Framework at https://osf.io/awhs2/files/osfstorage/6354515993d35216c691bf44.

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APPENDIX A

TABLE A1 database of orthographic neighbors for Spanish read by children

	Words	Pseudo-words		Words	Pseudo-words
Short	Daño	Dazo	Long	Defensa	Delanca
	Dedo	Deña		Destino	Destaña
	Gota	Goro		Manzana	Manzama
	Lana	Laza		Mercado	Merdado
	Leña	Ledo		Montaña	Montino
	Loro	Lota		Naranja	Naquete
	Nudo	Nuna		Palanca	Pafensa
	Pila	Pina		Paquete	Paranja
	Pozo	Poño		Pelota	Pemate
	Rana	Rado		Sistema	Sistena
	Taza	Tana		Soldado	Solcado
	Zona	Zola		Tomate	Tolota
Fillers	Tigre Trompeta	Desmefo Polemio			