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Word Processing in Reading: Dyslexia Vs Developmental Language Disorder.

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Abstract
This study compares the reading characteristics of individuals with Dyslexia and Developmental Language Disorder (DLD). Reading is a complex cognitive process requiring the integration of phonological, orthographic, and syntactic skills. While dyslexia is mainly associated with phonological processing deficits, DLD affects broader linguistic abilities, including vocabulary, grammar, and oral comprehension. The study assessed two groups—one with dyslexia (n=20) and another with DLD (n=12)—using the PROLEC-R reading battery and the King-Devick (K-D) eye movement test.

Results indicate that individuals with dyslexia exhibit greater difficulties in Rapid Automatized Naming (RAN) and ocular movements, leading to slower reading fluency. Conversely, the DLD group showed significant deficits in word recognition and decoding, likely due to pre-existing language impairments. Additionally, while both groups struggled with pseudoword reading, individuals with dyslexia tended to transform pseudowords into real words, whereas those with DLD displayed frequent letter omissions and substitutions.

Findings highlight the distinct yet overlapping reading difficulties in both disorders, suggesting a need for tailored intervention strategies. Enhancing oral language skills could benefit individuals with both dyslexia and DLD, improving their reading development. Future research should further investigate the cognitive underpinnings of these reading deficits to refine diagnostic and therapeutic approaches.

Keywords: Dyslexia, Developmental Language Disorder, Reading Process, Phonological Awareness, Rapid Automatized Naming, Reading Comprehension.

1. Introduction

In recent decades, researchers have dedicated significant efforts to studying the processes involved in acquiring literacy skills (Defior & Serrano, 2011). In Spain, learning to read begins before children enter primary education and continues throughout life, emphasizing its importance (Salamanca, 2016). For this reason, numerous educators, theorists, and researchers have focused on this topic and, through continuous work, have developed various approaches to address it (Delhi & Peña, 2014).

Reading, which involves deriving meaning and assigning sense to certain symbols, contributes to transforming what we know. Therefore, reading becomes a social right, an essential condition for accessing knowledge (Wong, 2005). Reading and writing may seem simple, but they are highly complex processes. The construction of this knowledge is slow and includes the perception of recorded or written signs, which also involves comprehension (Boimbini & Labeur, 2022).

Reading plays a crucial role in the development and maturation of children. Despite increasing immersion in a technology-driven world, it remains a fundamental tool for learning. Beyond being an instrumental tool, reading is a highly relevant skill in itself (Ahmed, 2011). According to Grigorenko (2011), its transversal nature significantly impacts various academic areas, generating positive collateral effects that contribute to performance in other disciplines. This highlights its value not only as an educational practice but also as an essential component for the child's overall development.

1.1 Reading.

As a cognitive process, psycholinguistics has provided the most significant contributions, defining reading as an active process of constructing text meanings, in which the reader uses their knowledge, linguistic competence, and directs their task with specific purposes (Delhi & Peña, 2014). The following sections analyze some aspects of reading based on different perspectives:

Reading Process Associated with Visual Function.

Most of the external information we receive comes through vision. If the visual system is not in optimal condition, it can result in learning difficulties, specifically in reading problems (Bennett, 2007; Perfetti, 2017; Stein, 2018). Understanding the path that light follows from the eye to the visual cortex for recognition is essential (Muñoz, 2011).

The process begins when light passes through the eyeball to the retina, where it is converted into chemical energy through different cells. These cells connect with fibers within the optic nerve, and before reaching the brain, fiber crossings occur from both eyes (Mannu, 2014). The response is then sent to the visual cortex, where identification occurs. However, not only the visual cortex participates in the visual process, but at least some regions of the parietal and temporal lobes also intervene (Kravitz et al., 2013; Muñoz, 2011).

Reading initiation undoubtedly begins with decoding, whose first stage involves what Goodman (1996) calls the "ocular cycle," meaning fixing the gaze on text and scanning lines with eye movements.

There are different types of eye movements, but those most directly associated with reading are tracking and saccadic movements (Jiménez, 2022). Tracking movements allow both eyes to read simultaneously along a line and move to the next one (Muñoz, 2011).

Eye movements are determined by both the text's difficulty and the reader's ability (Escudero et al., 2016). Efficient readers make fewer eye jumps per line, whereas struggling readers fix their gaze on almost every word. However, good readers also make jumps where necessary (Pavón, 2017). Saccadic movements allow the eyes to quickly fixate on one object, image, or letter and then immediately shift to another. These are small jumps that move from one fixation point to another rapidly (Jiménez, 2022).

A second stage involves perception (Ortiz & Guzmán, 2003). Fixating on a point allows us to visualize a broader field, known as peripheral vision. With peripheral vision, the reader sees beyond the fixation point, preparing for the next one. This ability is influenced by the graphic characteristics of texts, as shorter words are easier to process peripherally than longer ones (Legge et al., 2001).

Reading comprehension is significantly influenced by the reader's ability to manage peripheral vision. Difficulties can cause line skipping, reading loss, word repetition, letter confusion, and letter inversions (Araujo, 2020).

Therefore, reading is an extremely complex process. Identifying a word requires recognizing it among 30,000 to 50,000 words (the average vocabulary of a language) while simultaneously activating phonological and orthographic information, along with syntactic and semantic knowledge (Leon, 2019).

Although this process occurs almost unconsciously, it happens in just one-fifth of a second (Pavón, 2017).

Rapid Automatized Naming. RAN

Another key factor supporting effective reading is Rapid Automatized Naming (RAN). RAN refers to the speed at which familiar stimuli, such as letters, numbers, colors, or pictures, can be named (Denckla & Rudel, 1974).

The connection between reading and this skill has been demonstrated through multiple studies involving children with and without reading difficulties (López-Escribano et al., 2014; Wolf et al., 2000), showing that this relationship varies depending on the type of stimulus used in the task. Naming letters or numbers appears to be more closely linked to reading ability than naming pictures and colors (Gómez-Velázquez et al., 2014).

Additionally, digit naming seems to be more strongly associated with reading speed than with reading accuracy (Savage & Frederickson, 2005).

At the same time, various studies have provided evidence of a relationship between RAN tasks and text reading. Findings suggest that individuals with dyslexia may retrieve fewer words compared to children of the same age without reading difficulties (Denckla & Rudel, 1976).

However, it is essential to question the exact relationship between these skills and reading fluency, which has been defined as a bridge between decoding and comprehension (Pikulski & Chard, 2005).

The speed at which the brain integrates visual and linguistic processes is central to research on naming speed, which is also related to phonological awareness (Breznitz, 2006; Christodoulou et al., 2014; Koen, 2019; Lee & Stoodley, 2024). The origins of research on this ability date back to 1886, when Cattell published The Time It Takes to See and Name Objects.

Nearly a century later, Denckla and Rudel (1976a, b) pioneered the use of a technique known as Rapid Automatized Naming (RAN) in the first studies highlighting the relationship between the speed of access to phonological codes stored in long-term memory (LTM) and reading ability, as well as its predictive capacity regarding reading proficiency. This is also considered an implicit phonological skill, as phonological codes are retrieved automatically, without the need for explicit reflection on them (Sanmillán et al., 2019).

1.1.1 Phonological Awareness.

One of the most significant contributions of reading psychology in the past century has been the discovery that a metacognitive skill-children's awareness of speech sounds, or phonological awareness (hereafter PA)-is a powerful predictor of individual differences in literacy acquisition (Goswami & Bryant, 1990). PA is an explicit phonological processing skill, as it requires individuals to reflect on and manipulate the sounds of words. Research has demonstrated that deficits in this ability can be the root cause of learning difficulties in many cases (Defior & Serrano, 2011).

Linguistic awareness skills, also known as metalinguistic skills (Defior, 1996, 2004), refer to the ability to objectively analyze language, reflect on it explicitly, and manipulate its structures outside of its communicative function. These include phonological awareness (or PA), morphological awareness, syntactic awareness, semantic awareness, and pragmatic awareness (Gombert, 2002).

Similarly, PA skills indicate an individual's knowledge of the sound structure of their native language (Mattingly,

1972). Strictly defined, PA involves the ability to intentionally identify, segment, or combine sublexical units of words, such as syllables, intrasyllabic units, and phonemes (Defior & Serrano, 2011).

Broadly speaking, PA can also be defined as the understanding that spoken language can be broken down into smaller units, which includes lexical units (words). Accordingly, PA is categorized into several levels, as described by Defior & Serrano (2011):

- Lexical awareness: The ability to identify the words that make up sentences and manipulate them deliberately. An example task would be asking how many words are in a given sentence (e.g., in "My grandmother gave me a ring," there are six words).
- Syllabic awareness: The ability to segment and manipulate the syllables that form words. An example would be asking how many syllables a word has (e.g., "ring" in Spanish (anillo) has three syllables).
- Intrasyllabic awareness: The ability to segment and manipulate the onset (consonants preceding the vowel) and the rime (the vowel and following consonants) within syllables. An example would be asking about the difference between "sea" and "bar" (different onset) or between "pour" and "pez" (different rime).
- Phonemic awareness: The ability to segment and manipulate the smallest units of speech-phonemes. An example of this would be asking how many sounds (phonemes) can be heard in a word (e.g., in "ring" in Spanish (anillo), there are five phonemes).

Findings indicate that among phonological skills, phonemic awareness is the strongest predictor of reading performance. However, its association with writing is even more consistent and significant, aligning with other studies that highlight the greater role of phonological processing in writing than in reading (Defior & Tudela, 1994; Treiman, 2004).

The role of PA in literacy acquisition appears to vary depending on the transparency of the language's orthographic system (i.e., how transparent or opaque a language's spelling system is). However, this remains an open question in research (Vaessen & Blomert, 2010).

1.2 Dyslexia

According to the DSM-V, published in 2013, dyslexia is classified as a "specific" learning disorder affecting reading. Classical definitions are based on the discrepancy between reading ability and general cognitive ability (IQ). Beyond the initial discrepancy and exclusion criteria, the International Dyslexia Association (2003) defines this disorder as a neurologically based specific learning difficulty characterized by deficits in accuracy and fluency in word recognition tasks, as well as problems with decoding and spelling (Lorenzo, 2017).

From a behavioral perspective, some authors emphasize that a child with dyslexia is not one who has failed to learn or lacks reading and writing skills but rather one who has learned in a different way, making errors in the process (Aragón & Silva, 2000).

Currently, no general, reliable, and widely accepted epidemiological data exist regarding the prevalence of dyslexia. This is due to variations in incidence depending on language transparency, schooling, and whether a more or less restrictive criterion is adopted to differentiate dyslexia from reading delay (Di Folco et al., 2020; Erbeli et al., 2021; Snowling & Melbing Lervag, 2016).

Thus, the estimated prevalence of dyslexia or reading learning disorder, depending on the consulted source, is approximately 7.52% (Cubilla-Bonnetier, 2024).

Finally, the primary characteristics of dyslexia are defined by difficulties in reading and writing, including:

- Deficits in phonological processing: Difficulties with spelling and mental manipulation of word sounds (Stanovich, 1988, 1991).
- Difficulties in phoneme-grapheme correspondence, as well as in phoneme manipulation (counting, omitting, adding, searching, etc.) (Mori Leovina, 2012).
- Challenges with rhyming and sequential ordering of multisyllabic words (Neciosup Guibert, 2018).
- Difficulties in naming colors, letters, and numbers, as well as in memorizing certain verbal sequences, such as the days of the week, months of the year, the alphabet, or multiplication tables—functions related to RAN (Téllez, 2016).
- Struggles with learning unfamiliar words (Carrillo, 2012).
- Frequent spelling errors, both natural and arbitrary, particularly in words containing b/v and g/j (García, 2021).
- Poor text structuring and morphosyntactic difficulties, along with errors in punctuation usage (Carbó, 2022).
- Reading with a high number of errors, especially in reading mechanics. These children put significant effort into reading, which is poorly automated (Sans-Fitó et al., 2013).
- Slower reading speed compared to peers (Escurra, 2003).
- Preserved reading comprehension, despite errors and the effort involved (Almeida, 2022).
- Difficulties with copying tasks (Aguirre-Medrano & González-López, 2021).
- Challenges in learning foreign languages, often leading to avoidance of academic or professional activities that require extensive reading or writing (Domínguez et al., 2019).

1.3 Developmental Language Disorder

Developmental Language Disorder (hereafter DLD) is defined as a deficit in linguistic development that occurs in the absence of identifiable factors that could explain it (Leonard, 1998). Consequently, it is diagnosed by exclusion to ensure that auditory, neurological, cognitive, or environmental difficulties are not responsible for the issue (Fresneda & Mendoza, 2005).

DLD has a prevalence of 7.58%, with a male-to-female ratio of 1.22:1 (Norbury et al., 2016). However, variations in diagnostic methodologies, assessment tools, and cohort criteria prevent confirmation of an exact prevalence rate (Mendoza, 2016).

The linguistic characteristics of this disorder, as described in the study by Black and Grant (2013) and based on DSM-V diagnostic criteria, include:

- Difficulties in language acquisition and usage across all modalities due to deficits in both comprehension and production.
- Reduced vocabulary, both in knowledge and in word usage.
- Compromised grammatical structure, involving

difficulties in organizing words and their endings to construct grammatically and morphologically correct sentences.
- Impaired discourse abilities, including difficulties in using vocabulary and linking sentences to explain, describe, or maintain a conversation.
- Language skills below age expectations, resulting in ineffective communication and subsequent limitations in social participation, academic achievement, and job performance.

Beyond linguistic deficits, many children with DLD exhibit reading difficulties, which may be influenced by lower lexical processing, phonological awareness, and discourse-level skills—factors considered critical for reading performance (Coloma & De Barbieri, 2007; Dickinson et al., 2003; Nation & Snowling, 2004; Ricketts, 2011).

Students with DLD show average performance in reading and writing, but they experience significant difficulty in acquiring both skills. In general, their reading characteristics include (Pérez, 2020):

- Difficulty remembering the alphabet.
- Types of reading errors:
    - Inversions: Changing the order of letters/syllables within words.
    - Omissions and additions: Omitting or adding letters, syllables, or words.
    - Rotations: Confusing mirror-image letters.
    - Substitutions: Replacing one letter with another.
    - Incorrect word segmentations: Improperly combining or separating words.
    - Lexicalizations: Inventing words while reading.
    - Low or absent reading comprehension.
- Avoidance of reading and writing tasks.
- Slow reading pace, characterized by hesitations, corrections, syllabification, and loss of line tracking.
- Frequent spelling errors.
- Difficulties in processing and integrating spelling rules taught in class.
- Struggles with dictation tasks, often unable to keep up.
- High error rates in copying exercises.
- Significant issues with handwriting quality and spatial organization.

Additionally, research has consistently shown that individuals with DLD exhibit lower performance in decoding (Tomas & Vissers, 2019; Gray et al., 2019). As a result, systematic interventions should focus on enhancing decoding skills in the early stages of reading development, as difficulties in this area are expected (Coloma & De Barbieri, 2007; Dickinson et al., 2003; Nation & Snowling, 2004; Ricketts, 2011).

It can therefore be concluded that children with DLD demonstrate weaker coding skills and, consequently, reduced reading comprehension (Adlof, 2020). However, this is not always the case. Some children with DLD do not exhibit reading difficulties (Catts et al., 2002), while others experience isolated issues either in reading comprehension or in decoding (Bishop & McDonald et al., 2009; Kelso et al., 2007).

Previous studies highlight the heterogeneous nature of reading performance in these children and suggest that the relationship between reading and language deficits in DLD requires further investigation (Coloma et al., 2015).

In conclusion, some studies confirm that dyslexia and DLD are distinct disorders (Bishop et al., 2009; Snowling et al., 2019). However, others suggest shared manifestations (Kamhi & Catts, 1986), and more recent research indicates potential comorbidity between them (Ramus et al., 2013). What is certain is that both diagnoses involve overlapping reading difficulties, prompting reflection on their shared characteristics in relation to literacy (Kamhi & Catts, 1986).

It is estimated that 43% of children with DLD later receive a diagnosis of a reading disorder (Snowling et al., 2000), while 55% of children with dyslexia meet the diagnostic criteria for DLD (McArthur et al., 2000). This finding suggests that DLD and dyslexia may share common etiological factors or, alternatively, represent distinct manifestations of an underlying cognitive deficit (Bishop & Snowling, 2004; Catts et al., 2005; Pennington & Bishop, 2009).

The scientific literature highlights the overlap between DLD and dyslexia, identifying several early indicators predictive of a dyslexia diagnosis. These include delays in speech onset, phonological immaturity, and limited metalinguistic awareness (Cevallos, 2020). Dyslexia, as a learning disorder, is frequently associated with language impairments, a phenomenon extensively documented by Mulas et al. (2006).

The language delay characteristic of children with dyslexia significantly affects phonological, semantic, and syntactic processes related to literacy (Vidal et al., 2021). These difficulties are evident in key tasks such as reading comprehension, expressive reading, and spontaneous writing, all of which exhibit markedly poor quality (Carrillo & Alegría, 2009).

Consequently, linguistic errors at all three levels—articulation, word formation, and sentence structuring—not only impact the oral expression of dyslexic children but also manifest in their reading and writing abilities. This evidence supports the strong functional connection between the brain circuits regulating oral and written language (Nieto-Herrera, 1998).

2 Material and Methods

The objective of this research is to evaluate the main reading characteristics of both disorders and compare the differences that emerge between them at this level.

2.1 Participantes

The sample consisted of two groups: DLD and dyslexia. On one hand, the DLD group included 12 individuals aged 7 to 20 years with a confirmed diagnosis. To reach these individuals, contact was made with the Madrid Association for Specific Language Disorders/DLD (ATELMA) and other clinics with patients diagnosed with this condition.

On the other hand, the dyslexia group consisted of 20 individuals aged 9 to 22 years with a confirmed diagnosis of dyslexia, recruited from the dyslexia association of Cuenca (ACUAPRENDE).

Table 1: Study participants.

	Group TDL	Group dislexia
Mean Age.	10.92	12.5
Standard Deviation.	3.82	3.06
Number of Females.	3	8
Number of Males.	9	12
Primary School Students.	8	9
Secondary School Students.	3	6

2.2 Instruments

Las pruebas que se le administraron a todos los participantes fueron las siguientes:

- PROLEC-R. (Cuetos, Rodríguez, Ruano y Arribas, 2014). This battery consists of several tasks aimed at analyzing key reading processes, from basic to complex. In this study, only four subtests related to word processing were used:
    - **Letter Naming or Sound:** this subtest evaluates whether the child recognizes all letters and their pronunciation in Spanish. Additionally, the time taken is recorded, providing information about the level of automaticity in letter recognition and naming (letter-to-sound decoding). A total of 23 letters (both consonants and vowels) are presented, with the first three serving as examples.
    - **Same/Different Task:** The objective of this subtest is for the child to determine whether two presented words are the same or different, responding with "same" or "different". A total of 20 word pairs are presented. This task assesses the child's ability to segment and identify the letters within words, distinguishing between logographic and phonological reading strategies. Response time is also measured to determine the automaticity of this process.
    - **Word Reading:** In this subtest, the participant reads 40 words, 20 of high frequency and 20 of low frequency, all matched in length and syllabic structure. Both accuracy and reading time are measured, with the objective being to read as quickly and accurately as possible.
    - **Pseudoword Reading:** In this subtest, the participant reads 40 pseudowords constructed by combining elements of the words from the previous subtest. Both lists share similar characteristics in length and syllabic structure. Scoring is based on reading accuracy (minimizing errors) and time taken.

- Prueba K-D de movimientos oculares: (King y Devick, 1976). This test evaluates saccadic eye movements during reading. It is administered individually and consists of four number-based cards.
    - The first card serves as a demonstration, guiding the participant on how to perform the task. The child reads numbers as if reading a text, with markers to assist in eye tracki
    - The second card is similar to the first but without tracking markers for line changes.
    - The third card removes all eye-tracking markers.
    - The fourth card is the most challenging, with numbers distributed randomly without visual references.

Participants are instructed to read each card as quickly as possible while minimizing errors. Reading time and errors are recorded.

3 Procedure

Initially, families were contacted through the respective associations. Those who agreed to participate signed an informed consent form. The assessments were then conducted at the association's facilities, with each participant undergoing testing in one-hour sessions.
Following test administration, the results were scored, and each participant received an individualized report detailing their performance. These reports were subsequently sent to the families.

4 Results

Table 2 presents the results for the dyslexia group on the K-D test and the subtests of the PROLEC battery.

Table 2. Results of the K-D and PROLEC-R test for the dyslexia group.

Subtest	Average errors	Average time
K-D List 1	0.30	25.02
K-D List 2	3.15	28.94
K-D List 3	5.90	29.16
PROLEC Letter Naming	0.55	15.75
PROLEC Same-Different	1.30	71.45
PROLEC Word Reading	3.75	69.2
PROLEC Pseudoword Reading	7.6	91.75

The results of the same tests for the DLD group are presented in Table 3.

Table 3. Results of the K-D and PROLEC-R tests for the DLD group.

Subtest	Average errors	Average time
K-D List 1	1.25	30.48
K-D List 2	4.58	40.56
K-D List 3	7.33	41.62
PROLEC Letter Naming	1.58	27.92
PROLEC Same-Different	5	111.25
PROLEC Word Reading	8.5	151.66
PROLEC Pseudoword Reading	8.33	155.83

When analyzing the performance of both groups across the two tests, examining mean errors and time, it is evident that the overall performance of the dyslexia group is better than that of the DLD group. This difference is particularly pronounced in the PROLEC subtests.

A statistical analysis comparing the mean scores of both populations across all administered tests revealed significant differences between groups in the mean errors for K-D List 3 ($p = 0.479$) and the mean errors in the PROLEC-R pseudoword reading subtest ($p = 0.007$).

This reflects greater difficulty in ocular movements and RAN performance on the K-D test for the dyslexia group compared to the DLD group. Additionally, differences were observed between groups in pseudoword reading, with poorer performance again in the DLD group.

For example, in the ocular movement test, individuals with dyslexia exhibited more errors related to line skipping than those in the DLD group. On the other hand, the errors made by individuals with DLD in the pseudoword reading subtest were primarily omissions and letter substitutions, whereas individuals with dyslexia tended to "transform" a pseudoword into a meaningful word (e.g., “bospe” instead of “bosque” and “blansa” instead of “blanca”).

5 Discussion

From the outset, this study has addressed the inherent complexity of the reading process, a phenomenon that, despite appearing simple, requires the coordinated activation of multiple cognitive, linguistic, motor, and emotional mechanisms to occur efficiently (Defior & Serrano, 2011; Delhi & Peña, 2014; Salamanca, 2016). Reading is not an innate ability but a cultural construct that depends on the correct interplay between basic linguistic abilities, visual and auditory skills, and phonological processing (Sancho, 2014). Therefore, this study underscores the importance of establishing a strong linguistic foundation as a prerequisite for reading acquisition. This aspect is crucial because oral language not only lays the groundwork for vocabulary development and comprehension but also influences the ability to decode written words (López-Escribano et al., 2014; Vaessen & Blomert, 2010; Wolf et al., 2000).

Considering each of the evaluated processes and beginning with RAN, specifically number naming, as assessed by the K-D test, the results indicate that—as reported in the literature—this is one of the key components affected in dyslexia (López-Escribano et al., 2014; Pikulski & Chard, 2005). Significant differences were observed in both errors and completion time, with individuals with dyslexia performing worse than those diagnosed with DLD.

Although this study cannot determine whether the observed difficulties are directly related to the ocular movements required for the task, it is important to consider that ocular movements depend on both the complexity of the presented word and the reader’s proficiency. Additionally, individual perceptual ability also plays a critical role, introducing another influencing factor in reading performance (Ortiz & Guzmán, 2003; Pérez, 2020; Protopapas et al., 2012)

Furthermore, reading processes themselves were assessed, and the data obtained revealed significant interindividual variability. In the letter identification task, the mean number of errors was higher in the DLD group compared to the dyslexia group. This could be partially explained by pre-existing language difficulties, which may impact decoding skills, as well as a lack of prerequisites for reading and writing (Coloma & De Barbieri, 2007; Ricketts, 2011; Nation & Snowling, 2004).

As previously mentioned, reading comprehension relies heavily on both decoding and oral language competence. Given the deficits observed in individuals with DLD, they struggle with word recognition due to impairments in phonological awareness, a foundational skill in this process, which is likely influenced by phonological and lexical difficulties (Bishop & Snowling, 2004; Oakhill & Cain, 2012). Although phonological awareness is also severely impaired in individuals with dyslexia, this study highlights the importance of prior language functions in successful reading performance. When these functions are compromised, as in the case of DLD, the reading process is further hindered (McGuinness, 2006; Rayner et al., 2001).

Additionally, when evaluating word identification skills, the results again indicate poorer performance in the DLD group. This difficulty is likely linked to language impairments, which consequently affect reading, and more specifically, decoding—the process required for word recognition and differentiation (Coloma & De Barbieri, 2007; Dickinson et al., 2003; Nation & Snowling, 2004; Ricketts, 2011).

Moreover, during reading tasks, children with DLD exhibited the characteristic errors associated with their condition, as previously noted: inversions, omissions and additions, rotations, substitutions, incorrect word segmentations, lexicalizations, and poor or absent reading comprehension. This combination of difficulties reflects the underlying limitations in their linguistic and reading abilities, highlighting the need for targeted interventions to improve both reading accuracy and comprehension in this population (Pérez, 2020).

Although both disorders exhibit distinct characteristics, the literature has identified certain commonalities that hinder reading acquisition in both cases. While dyslexia is primarily associated with phonological processing and decoding difficulties (Catts & Kamhi, 2005), DLD originates from broader linguistic deficits, including impairments in vocabulary acquisition, grammar, and oral language comprehension.

However, these similarities have led to the establishment of shared therapeutic goals in speech-language pathology,

aiming to address common areas of difficulty (Snowling & Hulme, 2011; Stein, 2018; Tomas & Vissers, 2019).

The primary objective of this study was to identify differences in reading characteristics between both disorders, thereby providing insight into speech therapy strategies that may be implemented in their treatment. The results revealed notable findings, highlighting that some behaviors previously considered highly dysfunctional were not reflected as such in this study, which could lead to shifts in treatment approaches.

6 Conclusion

In conclusion, on the one hand, having difficulties exclusively in reading while preserving oral language skills may allow for the development of compensatory strategies. On the other hand, proper development and consolidation of oral language provide a solid foundation for future reading and writing acquisition.

Therefore, the practical implications of this study could be useful for designing specific intervention plans for each disorder, tailored to the reading proficiency of each patient. Additionally, the findings suggest the importance of strengthening oral language in all patients, regardless of their disorder, to support future reading acquisition.

However, this study has certain limitations. Firstly, some participants had comorbid conditions, which could have influenced the results. Additionally, the comparison groups were not equal in size, potentially affecting statistical validity. Finally, to generalize the findings more accurately, it would be necessary to administer a broader set of assessments to more comprehensively evaluate the functions analyzed.

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