

Reported speech uses in children with and without developmental language disorder

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Abstract

This study compares the use of reporting speech devices (RS) in narrative retells by Spanish-speaking children with (and without) Developmental Language Disorder (DLD). We assessed 50 7-year-old children (25 with DLD and 25 with TD) and analyzed the narrative retells' length and the RS forms introduced by children. In addition, we considered the Type of Reported Speech linguistic mechanism (TRSm) and the Type of Voice Assignment (TVA). Neither the number of RS sequences introduced, narrative retells' length, nor the number of original sequences exhibit significant differences between both groups. We found a mean correlation among groups' differences and TRSm (Spearman: 0356 rho>: 0011). Although both groups behave in a very similar way in some indicators, we found slight differences that characterize different communicative profiles for DLD and TD. The results have implications for planning DLD language interventions, mainly in those designed to improve DLD grammar and narrative usages.

Keywords

developmental language disorder, reported speech, narrative, Spanish speaking children, child language

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I Introduction

Children who exhibit some language deficit in absence of any sensory, neurological, emotional, and/or severe behavioral problem or intellectual disability (Ervin, 2001; Leonard, 2014) have been considered as children with Developmental Language Disorder (DLD), due to the developmental characteristics of this syndrome (CATALISE, Bishop, 2017). DLD children can exhibit different problems with various aspects of language comprehension and/or production that allow for recognizing different DLD profiles (Leonard, 2014). These profiles change and develop according to ageing (Auza and Morgan, 2013).

The narrative ability is a major aspect that affects DLD children; they show lower ability in the production and comprehension of narratives in comparison with their TD peers, mainly at processing and building its episodes (Andreu et al., 2011).

Narratives play a central role in language and cognitive development. In fact, narratives allow some cognitive functions to reach a more complex status (Nelson, 2003) and, in this process, speakers can build their subjectivity (Bruner, 1996; Hudson and Shapiro, 1991; Nelson, 2003). Reporting voices, thoughts, or motivations give narrators the opportunity to represent themselves and others. Reported Speech (RS) mainly convey this function (Alarcón Neve, 2018; Shiro, 2007). From a cognitive perspective, RS implies the narrators' ability to recognize and assume another voice, take distance from the speaking situation, and merge this voice onto their own discourse. From a linguistic point of view, RS implies the arrangement and coordination of a set of complex discursive, syntactic, and pragmatic resources, such as subordination, verbal forms, and pronouns.

Although RS use in TD children has been extensively studied (Berger and Pekarek, 2015; Burdelski, 2015; Johansen, 2011; Mahler, 1997; Serratrice *et al.* 2015; Shiro, 2012; Welliver et al., 2023), there are fewer studies on DLD children (Crespo and Silva, 2019; Crespo et al., 2021, Kaderavek and Sulzby, 2000). If we could understand better RS uses, we could grasp aspects still unrecognized from DLD language performance and some related cognitive and pragmatic aspects of their communicative behavior.

I *Developmental language disorder children*

Because DLD children need more time than TD children do to acquire new words and sentences, they have been characterized by a slower language learning ability. As they get older, they show weaker linguistic performance, causing some morphosyntactic and lexical faults (Leonard, 2014).

DLD child language descriptions recognize difficulties in narrative production and comprehension (Andreu et al., 2011; Botting, 2002; Fey et al., 2004; Newman and McGregor, 2006; Pavez et al., 2008; Reilly et al., 2004). In text structure, the DLD child narratives are slightly different from those produced by their TD peers (Andreu et al., 2011; Ukrainetz and Gillam, 2009), with fewer components and weaker coping at introductions and in the episodes building (Pavez et al., 2008).

2 *Reported speech*

Referring to other people's words, either to account for characters sayings and thoughts in narratives or to support an assumption, is a common activity in conversation. Discursive and grammar studies have named this process as reported speech, quoted discourse, reflexive language usage, meta-discourse, meta-communication, and meta-pragmatics (Shiro, 2007). RS involves a relation between two communication events; it means the discourse rebuilding into another and, in addition, its attribution of ownership. The most typical structure consists of a frame + a quote (Brunetti, 2009; Reyes, 1995).

The frame identifies the source of the discourse reported, holds a communication verb (or *verba dicendi*) and the mention of the speaker to whom the narrator assigns the ownership of sayings or thoughts. Communication verbs codify verbal activities and have three functions: giving information, explaining the speaker's communicative intentions (e.g., to assure, to promise, to ask), and indicating how the quote might be interpreted (Brunetti, 2009; Reyes, 1995). Although traditionally "thinking verbs" were not considered as *verba dicendi*, they arrange and convey mental states, and therefore, speakers use them for building a discourse. These verbs display thoughts and perceptions (i.e., *think* and *believe*) (Reyes, 1995).

Sometimes speakers mention the source of RS, a process known as *Voice Assignment* (VA). Languages hold some specific grammar devices to do that; some only demand the explicit mention of the source e.g., phrases such as "x said or thought," while in pro-drop languages (i.e., Spanish) other grammar devices are required, such as inflectional endings (i.e., 1) or connectives.

The following examples show the categories sketched previously. In the first row appears the Spanish example, in the second word-by-word annotation -with the tense morpheme in brackets- and an adequate English translation in the third (own authorship). The single slash (/) separates the verbs; the double slash (//) demonstrates how, in Spanish, two sentences mean the same and can be used as equals. The difference between them is the agent omission.

(1) *El niño dijo/pensó: no iré // Dijo/pensó: no iré*

The child said/ thought: He/she not (will) go // Said/ thought: (will) not go

The boy said/ thought: I will not go // He said/ thought: I won't go. [The exemplars are by our own]

Different linguistic devices codify RS varying from a style closer to the original words to a more distant rephrasing. In the first, the speaker creates a barrier between his words and the words quoted; in the second, the speaker reformulates the quote, attempting to merge it into his own discourse (Brunetti, 2009; Shiro, 2007).

The grammatical tradition classified RS linguistic devices into *canonical* – direct forms (DRS, i.e., 1), and indirect forms (IRS, i.e., 2) – and *no canonical* (i.e., 3) forms (Lázaro Carreter, 1990; RAE, 1973).

(2) *El niño pensó/dijo que había perdido su juguete*

The boy thought/said that had lost his toy.

The boy thought/said that he had lost his toy.

(3) *La mama felicitó al niño por su nota*

The mom congratulated the child for his grade.

His mom congratulated the child because of his grade.

DRS (i.e., 1) is a form syntactically characterized as the juxtaposition of quoting and quoted discourses, simulating literality, i.e., keeping the original deictic system. Conversely, IRS (i.e., 2) is a device characterized as quoted text subordinated through the insertion of a conjunction (i.e., *that*). In IRS, speakers only give the semantic content of the statement and change the source's deictic system (Maldonado González, 1999; Reyes, 1995). IRS establishes a close link between the source and the speaker.

Moreover, there are other *non-canonical* RS variations such as Narrated Reported Speech (NRS). Brunetti (2009) characterizes it (i.e., 3) as an RS form in which the sayings or thoughts are introduced as events, paraphrasing the content as a "dictum verb" (i.e., in 3, the speaker uses

“congratulated” instead of the words said by the mom), and merging the discourses. In NRS, speakers could omit the attribution of discourse to another (*Voice Assignment*). Mixed Reported Speech (MRS) (i.e., 4) is a kind of RS considered a hybrid form that arises from an IRS or an NRS with DRS parts conflated. Free Indirect Reported Speech (FIRS) (i.e., 5) is a complex process of reporting, in which speakers try to reproduce source speakers’ words along with their supposed thoughts and/or perceptions, using the original deictic system (Reyes, 1995).

(4) *Le prometió ir “sí o sí”.*

(to) him promised to go “yes or yes.”

He promised to go “yes or yes.”

(5) *Ahora deseaba ir a casa a descansar.*

Now (He/ She) wanted (to) go home to rest.

Now she wanted to go home to rest.

When analyzing the forms by which children introduce RS, Shiro (2012) recognized another form, not described previously. She defines it as the report of a sound that imitates or represents some noise or scream and is named Onomatopoeic RS (ORS) (Shiro, 2012) (i.e., 6).

(6) *El gatito dijo: miau, miaaaaauuuuuu.*

The kitten said: meow, meooowwwwww.

The kitten said: meow, meooowwwwww.

a Reported speech use in TD. Some studies have recognized and described TD children’s RS usages. Shiro (2012) found in Spanish speaking children from 6 to 11 years old that their RS uses increases with age, that differences according sex and socioeconomic factors can be observed and that its main discursive function is evaluative. Ely et al. (1996), studying parent- child exchanges of English speaking children from 2 to 5 years old observed that parents tend to reinforce sexual differences. Considering different forms of RS, Nordqvist (2001) observed studying Swedish-speaking children from 2 and 4 years old that DRS is the earliest with a considerable time span before the emergence of IRS. On other hand, Mahler (1997) recognized studying 6 years old Spanish-speaking children that they prefer DRS when they take the narrator’s point of view, but increase the frequency of IRS when they include characters’ voices. At last Serratrice et al. (2015) studying 5-year-old English-speaking children found that the exposure of children to stories with IRS favors its usage instead of DRS.

In sum, although these results are an important contribution, it is noteworthy that studies on TD RS child usages focus mainly on typical forms. In fact, other forms have received sparse attention (Shiro, 2012). Another interesting phenomena recognized if we compare results in different languages is that the emergence of each type of RS mechanism and its frequency could be slightly different in each language considered.

b Reported speech use in DLD. In relation to RS uses in DLD children there are fewer studies. Kaderavek and Sulzby (1997) compared 2 and 4-year-old English speaking children with DLD and TD and observed that TD children used RS significantly more often than their DLD peers. Otherwise Crespo and Silva (2019) at studying the relationships between the use of RS sequences and the level of pragmatic flexibility of TD and DLD children in a retelling task, found that both groups of 7 years old Spanish-speaking children show no significant differences in their RS performance, although they found slight differences in the frequency of introduction of DR and in the use of some specific mechanisms and resources in favor of TD. They observed in DLD children

a slight tendency to create original DR sequences that is “new forms” created by the children. Regarding the hypothesis, their results, although not conclusive, indicate a strong association between the use of DR, its specific devices and the contents and functions of the narrative structure in which DR is instantiated. They hypothesized that these differences could be caused by the lower DLD level of pragmatic flexibility

In another study, Crespo et al. (2021) described the IRS forms used by TD and DLD Spanish Speaking children in a renarration task, but considering them from a longitudinal perspective, taking children uses from 5 to 10 years old. Despite the similarities found, they observe that DLD children had more grammatical difficulties at using IRS than TD children.

In spite of the fact that RS usages of DLD children were not rigorously and systematically considered, we have found that the RS performance is part of an assessment tool for diagnosing DLD (Petersen et al., 2008).

In sum, it is crucial to explore and describe better the characteristics of DLD RS uses because RS involves the mastering of a grammar set of resources typically described as a deficit in DLD (i.e., morphological relations between the main and subordinate verb). Aiming to cope this purpose we want to know

What kind of differences exist in the amount and type of RS mechanism used by Spanish Speaking children with and without DLD?

II Method

I Study overview

This study aimed to investigate the use of RS in DLD Spanish-speaking children, comparing them with their TD peers, trying to recognize some patterns that could explain their grammatical difficulties.

The differences investigated were:

- The frequency of RS uses.
- The frequency of RS Canonical and Non-Canonical forms
- The type of Voice Assignment and their frequency.

The data were taken in 2016, in the region of Valparaíso, Chile. In this study, a team of academics from Pontifical Catholic University of Valparaíso and the University of Valparaíso have collaborated. Also data were analyzed by a team of psycholinguistic researchers from CIIPME-CONICET, Argentina.

2 Participants

Fifty monolingual Spanish-speaking children participated in this study (25 diagnosed with DLD and 25 considered as their TD control peers). Children were evaluated at seven years old (TD: Mean = 7.6, SD = 0.11; DLD: Mean = 7.5, SD = 0.10, Range 6.9–7.11). Their parents or their legally responsible tutors in an informed consent form authorized all of them.

We evaluated children with DLD through the Screening Test of Spanish Grammar Exploratory Test (STSG) (Toronto, 1973), version revised by Pavez (2003) to assess their grammatical performance: expressive (STSG-E) and receptive (STSG-R). For phonological processes, we used TEPROSIF-R (Pavez et al., 2009). In order to discard some hearing problems, we administered

a set of clinical auditory tests (otoscopy, pure tone audiometry, and logo audiometry). We administered to discard cognitive problems the Raven's Progressive Matrices (1981). Table 1 exhibits the scores of the different tests administered on DLD population.

All the children who participated in this study were recruited through an invitation sent to the educational institutions. The invitation explained in detail the study characteristics and requirements, mainly the need that institutions and families adhere to a participation commitment for, at least, 3 years. The institutions that had accepted, received the authorization/consents to the families whose children meet the requirements. If the child, his/her family and institution accepted the child become part of the study.

All children attended educational institutions in the Chilean Valparaíso Region. These institutions enrolled children from Medium Socioeconomic Level, according to Chilean educational population standards. All the participants were Spanish monolingual speakers. None of them had any cognitive or sensory impairment. DLD children attended these institutions and also to a school integration program (Min Educ, Chile, 2020). In these Language Schools they received speech and language therapies focusing on their difficulties. The TD population had normal cognitive and linguistic performance according to standardized tests levels, their teacher's criteria, and each school's psycho-pedagogical department. Children with TD were not examined with DLD tests because Chilean schools do not allow an external assessment for children who are not expressly included in integration programs. Table 2 exhibits the demographic distribution of the assessed population.

The DLD prevalence is 3:1 males over females, therefore, we replicated this distribution in the population assessed (Leonard, 2014).

Table 1. DLD child population scores (mean) in diagnosis tests.

Tests	DLD Group	
	Mean	Standard Deviation
STSG-E (Expressive)	23.4	6.64
STSG-R (Receptive)	24.5	7.33
TEPROSIF-R	30.9	14.20
RAVEN	20.53	4.48
Auditory evaluations	Min.	Max.
Tonal audiometry right ear	5	23.3
Tonal audiometry Left ear	3.3	21.7

Table 2. Population: DLD and TD groups.

	Sex		Age range		Mean Age
	Girls	Boys	Min.	Max.	
DLD	9	16	7.1	7.11	7.7
TD	13	12	6.9	7.11	7.5
Total	22	28			

3 Materials

We gathered data via a narrative-retell procedure. A set of speech therapists, trained on the methods of child speech gathering and on the specific protocol norms for this study, assessed the children individually in a small quiet room in their schools. Each child watched and listened to an audiovisual narrative movie- (Stimuli Text, or ST), named “El valiente Lilo” (“*The brave Lilo*”). It belongs to a stimuli set designed to assess the development of child narrative performance and the text syntactic complexity (Bustos and Crespo, 2014) of two groups of children (with TD and DLD) during 5 years. The data taken started when children turned 5 and ended when they turned 10 years old. The set of stimuli is not standardized yet but there is evidence about its sensitiveness for both populations (Crespo and Figueroa Leighton, 2016). The short movie (4 min of duration) displays a tale of a bird who is afraid to fly outside its nest. We choose a movie with a narration as a ST for child data gathering because the movie guarantees that children pay attention and are emotionally engaged with the story and, also, allows that the STs were the same for all children. This technique of two steps (short movie plus a picture book) allows us using the picture book to retrieve the story and minimize in children their memory load effects. Its structure is composed of a frame and two episodes according to the Story Grammar (Stein and Glenn, 1979, revised by Peterson and McCabe, 1983; Owens, 1991). The ST has 380 words in 58 clauses and includes six RS sequences (Reported Speech at Stimuli Text, RSST). This ST was used in another RS previous study (Crespo and Silva, 2019).

Each RSST sequence displays the characters’ desires, purposes, or thoughts, which makes it easier to understand the plot. Appendix 1 includes the tale, divided into episodes with the six RSSTs underlined. Four RSSTs introduce the speech of an identified speaker (person or group) in a single conversational turn, and two RSSTs are internal monologues. The average RSST length is 21.16 words (9–34 words). The audiovisual design followed Kress and van Leuween (2001) guidelines.

4 Procedure

Fifty narratives (25 for TD children and 25 for DLD) were gathered. The procedure implied three stages. First, each child watched the movie individually. Afterwards, the child received a picture book with all the movie pictures that could watch previously and check it as many times as he/she wanted. At last, another adult (speech therapist or a technical research assistant) who had not watched or listened the movie, requested the child to retell the story to him/her. This procedure was designed in order to keep some of the ecological features of retelling situations, between them: telling something to somebody who does not know the story. Children retell while handling the book. The narrative retells were audio-recorded and transcribed phonetically and orthographically (Corpus NIR2014, FONDECYT 1130420). In this analysis, only orthographic transcriptions were considered.

5 Analysis

Different qualitative indicators were designed to describe Child’s Reported Speech sequences (CRS). These indicators allow us to consider the amount of language uses of each type (tokens), while others allow to describe their characteristics. We count the occurrences of tokens of each type and after we calculate descriptive statistics of each Type (frequencies and Means). This kind of analysis was developed and tested previously (Crespo and Silva, 2019).

Indicators that consider tokens' frequency:

- (1) Insertion of CRS: We counted the CRS sequences resembling RSST.
- (2) Insertion of Novel CRS (NoRS): We counted the RS sequences that children created originally. Afterwards we considered how much these contribute to the plot.

For considering CRS characteristics, we designed some scalar indicators, with them we discriminated most salient linguistic mechanisms involved in RS.

These indicators were:

(3) Type of RS linguistic mechanism (TRSm): This indicator holds five instances: Onomatopoeic Reported Speech (ORS), Direct Reported Speech (DRS), Indirect Reported Speech (IRS), Free Indirect Reported Speech (FIRS), and Narrated Reported Speech (NRS).

(4) Type of Voice Assignment (TVA): Spanish is a pro (pronoun)-drop language. In these languages, it is possible to omit the reference to the subject of a verb because a large verbal morphology indicates the person who performs the action. To codify the mechanisms of TVA we consider five categories

(I) Omission: this situation occurs when children do not include RSST in their narrative retells.

(II) Postposed Voice Assignment (PVA): In these instances, children refer to the RS speaker through morphological devices but in an ambiguous way, either because retrieving its complete explicit mention is difficult or because children rely on images at retelling.

(III) Inadequate Voice Assignment (IVA): In these occasions children confuse the character who said (or thought) the words.

(IV) Appropriate Implicit Voice Assignment (AIVA): It refers when children indicate which character was responsible by using verbal endings, and it is possible to retrieve the mention from previous sentences.

(V) Adequate Explicit Assignment (AEVA): In these situations, children explicitly mention, via nominal phrases or pronouns, the character responsible for RS.

Two codifiers with previous and proper training in the analyzing-scheme did the CRS analysis; their coincidence reached 92%. Discrepancies were re-analyzed, and if they remained, we consulted a third codifier to solve them. The coincidence between the two codifiers was calculated considering the whole of the tokens analyzed and, after that, we calculated the percentage of coincidence.

6 Data analysis

We carried out data processing with descriptive statistics analysis. To compare both groups, for tokens indicators, means and Mann–Whitney U test for differences between means were calculated. Considering qualitative indicators, frequencies were calculated. Also, we calculated Spearman correlation coefficient in order to recognize if the populations show similar (or different) patterns in their relations with the indicators. These statistics were selected because both allow the comparison of two independent samples when variables were not normally distributed. Also, we choose Spearman coefficient because the indicators are ordinal. The analysis was performed with SPSS, version 18.

III Results

We observed some common features and differences in TD and DLD scores in each indicator.

Table 3 shows comparative results of performance: Narrative retell length, CRS sequences, and Novel CRS.

Table 3 results show that DLD and TD children’s performances at narrative retell length and CRS sequences seem very similar. Mann–Whitney U analysis does not indicate any mean difference between media in each indicator, for narrative retell length, in words $F(-0.40) = .71, p = .05$; in clauses $F(0.35) = .68, p = .05$; for CRS $F(1.03) = .30, p = .05$ and for Novel RS $F(1.09) = .27, p = .05$.

Both groups introduce almost the same amount of CRS, although remarkably, DLD children have a higher frequency of novel RS.

If we compare SD values in length, DLD children perform in a more homogeneous way than TD children do.

In CRS, DLD children show slightly poorer performance than TD children, but both groups exhibit means higher than 4, the SD is so similar that both groups show the same range. These means indicate that performance trends are relatively high (four sequences of a total amount of 6) and that both groups show similar performance. The most relevant difference occurs in Novel CRS where DLD children have a higher mean than the TD group.

As we previously mentioned, the tale introduces six RSST; if we analyze these results independently, we see that both groups perform differently according to each one.

Table 3. DLD and TD performances in words, clauses, and CRS.

	Retelling Length				RS			
	Words		Clauses		CRS related to RSST		Novel CRS	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
DLD	162.84	54.77	33.56	8.84	4.56	1.22	0.24	0.43
TD	171.12	72.31	32.24	11.97	4.88	1.18	0.12	0.33
Total	166.98	63.62	32.90	10.44	4.64	1.20	0.18	0.38

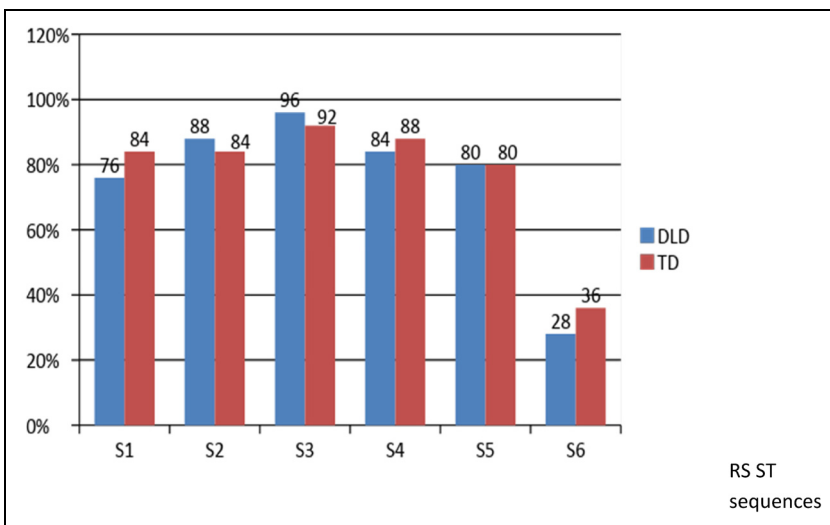


Figure 1. Frequencies of CRS related to RSST target: comparison between DLD and TD.

Figure 1 shows that children in both groups produced all RSST considered and that both groups seem to have a very similar performance trend. For both, the highest CRS frequency occurs at the third RSST (“an idea came to him: he would become ill so, due to this he would not have to go to the flight practice”) and the lowest at 6th RSST (“and they congratulated him for his bravery”). However in this case, DLD children show a slightly lower frequency than TD do. In the other sequences, the performances seem to be similar, with slight differences between groups (the greater is around 8% in 1st RSST: “tomorrow we will do our first flight practice”).

1 CRS: Analysis of linguistic devices

Because the analysis of length and CRS token frequency shows no considerable difference between DLD and TD children’s performances, we will consider CRS grammatical characteristics - Type of RS mechanism (TRSm) and TVA procedure.

a CRS mechanisms. At their narrative retells, children could omit RSST or reformulate using different procedures. The low frequency of omissions (24.3%) allows us to observe that children prefer to build their narrative retells including RSST.

Among reformulation procedures used by children, we identified two prototypical forms: DRS, i.e., 7) and IRS, i.e., 8), and two non-prototypical: MRS, i.e., 9), and Narrative Reported Speech (NRS, i.e., 10). There were no examples of FIRS forms.

Examples:

(7) DRS: La mamá dijo: “gracias”

The mother said: “thanks”

The mother said: “thank you” (43, DLD)

(8) IRS: *Él dijo que le dolían los ojos*

He said that (to) him hurt the eyes

He said that his eyes hurt him (59, DLD)

(9) MRS: *Y dijo que voy a volar como mi mamá... como me ens.../ como la vi volar*

And said that I go to fly as my mom...as me teach/ as I her saw to fly

And he said that I’m going to fly as my mom...as she teaches...as I saw her flying (22 DLD)

(10) NRS: *Un día la mamá empezó a volar cerca del nido para enseñarle a volar a los hijos*

One day the mother began to fly near the nest to teach to fly the children

One day the mother flew near the nest to teach them to fly (43 TD).

Tables 4 and 5 show the distribution of different linguistic mechanisms used by DLD and TD children according the RSST sequences.

We could consider relevant in both groups the frequency of omission, but there are differences according to each RSST. The 6th RSST shows the highest frequency of omission in both groups.

Comparing the distribution of RS mechanisms, at first, NRS is the most frequent for both groups. In the second instance, DLD group prefers DRS (18%) instead of other devices. In DLD children, IRS was the third-most frequent (16%) and MRS was the fourth. In TD children, the hierarchy is reversed. MRS occupies the second position (15.34%), IRS (13.33%) the third, and DRS (6.7%) the fourth. It is interesting to note that DRS is much more frequent in DLD narratives and the difference is considerable in comparison to those produced by TD children.

Comparing the distribution of RS mechanisms in the Stimuli Text (ST) with the DLD and TD narrative retells, we observed that in the ST, the most frequent form is DRS; NRS appears in only one instance.

Table 4. DLD children: CRS mechanisms.

RSST target	Omission		DRS		IRS		MRS		NRS	
	N	%	N	%	N	%	N	%	N	%
1	6	24	5	20	4	16	0	0	10	40
2	3	12	3	12	7	28	2	8	10	40
3	1	4	4	16	7	28	4	16	9	36
4	5	20	9	36	2	8	6	24	3	12
5	5	20	5	20	4	16	7	28	4	16
6	18	72	1	4	0	0	0	0	6	24
Total	38	25.34	27	18	24	16	19	12.66	42	28
Total	150									

Table 5. TD children: CRS mechanisms.

RSST target	Omission		ORS		DRS		IRS		MRS		NRS	
	N	%	N	%	N	%	N	%	N	%	N	%
1	4	16	0	0	1	4	11	44	0	0	9	36
2	5	20	0	0	0	0	7	28	1	4	12	48
3	2	8	0	0	1	4	1	4	9	36	12	48
4	3	12	1	4	4	16	0	0	8	32	9	36
5	2	8	0	0	3	12	1	4	5	20	14	56
6	20	80	0	0	0	0	0	0	0	0	5	20
Total	36	24	1	0.66	9	6	20	13.33	23	15.34	61	40.67
Total	150											

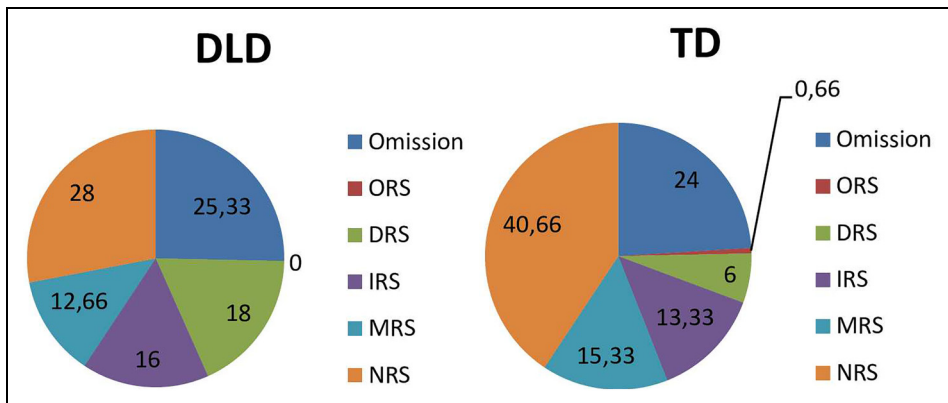


Figure 2. Frequency of Type of mechanisms: Comparison between DLD and TD population.

DLD and TD narrative retells do not follow this trend because both groups use more NRS. However, the predominance of DRS in DLD children indicates that they are closer to the distribution of ST.

b Voice assignment. In data, we recognized only four categories identifying the character who spoke or thought in CRS: 1) PVA, i.e., 12);¹ 2) IVA, i.e., 13); 3) AIVA, i.e., 14), and 4) AEVA, i.e., 15).

(12) PVA: *Y después se le ocurrió una idea, (clause 15) de hacerse el enfermo (clause16) para no volar (clause17)*

And then occurred to him an idea (clause 15) to get sick (clause 16) to not fly (clause 17)

And then he had an idea, (clause 15) of malingering (clause 16) for avoid to fly (clause 17) (3, TD)

(13) IVA: *Su hermano [de x Lilo x] tenía...hablaba, decía que le dolían los ojos*

His brother [of Lilo/ Lilo was] had... was talking, said that hurt the eyes

His brother [of Lilo] had... He spoke, he said that they his eyes hurt him (35, DLD)

(14) AIVA: *Y Lilo estaba preocupado / dijo no voy a tener más miedo de volar*

And Lilo was worried / said I'm not going to be more afraid of flying.

And Lilo was concerned/ he said I will not be afraid to fly ever (23, DLD).

(15) AEVA: *Su mamá dijo mañana le voy a enseñar a volar*

His mom said, tomorrow I'm going to teach him to fly

Table 6. DLD: VA procedures.

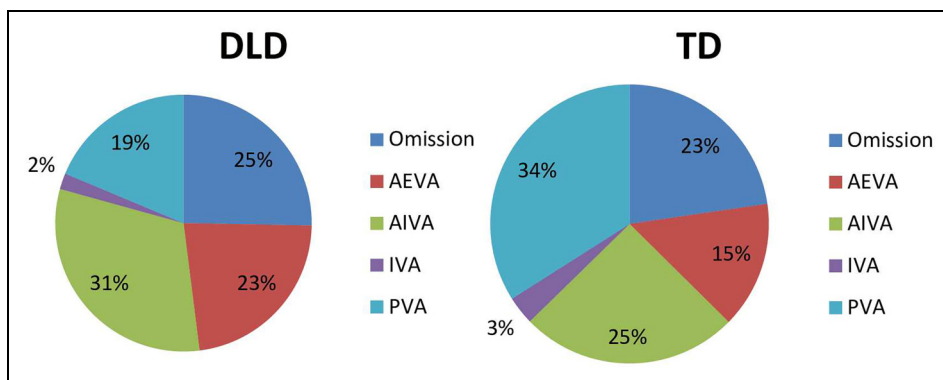
RSST target	Omission		AEVA		AIVA		IVA		PVA	
	N	%	N	%	N	%	N	%	N	%
1	6	15.8	5	14.7	2	4.3	0	0.0	12	42.9
2	3	7.9	12	35.3	6	12.8	0	0.0	4	14.3
3	1	2.6	5	14.7	14	29.8	0	0.0	5	17.9
4	5	13.2	5	14.7	11	23.4	1	33.3	3	10.7
5	5	13.2	6	17.6	13	27.7	0	0.0	1	3.6
6	18	47.4	1	2.9	1	2.1	2	66.7	3	10.7
Total	38	100.0	34	100.0	47	100.0	3	100.0	28	100.0
% Total frequency	25.3		22.7		31.3		2.0		18.7	

Table 7. TD: VA procedures.

RSST target	Omission		AEVA		AIVA		IVA		PVA	
	N°	%	N°	%	N°	%	N°	%	N°	%
1	4	11.8	8	36.4	3	7.9	2	40.0	8	15.7
2	4	11.8	7	31.8	7	18.4	0	0.0	7	13.7
3	2	5.9	2	9.1	9	23.7	0	0.0	12	23.5
4	3	8.8	2	9.1	11	28.9	0	0.0	9	17.6
5	5	14.7	2	9.1	6	15.8	1	20.0	11	21.6
6	16	47.1	1	4.5	2	5.3	2	40.0	4	7.8
Total	34	100.0	22	100.0	38	100.0	5	100.0	51	100.0
% Total frequency	22.7		14.7		25.3		3.3		34.0	

Table 8. Spearman correlation coefficients: differences between DLD and TD children in RS indicators.

	Number of clauses	Number of words	Number of NRS	Number of CRS	Linguistic mechanism	Voice assignment
Spearman correlation	-.111	.058	-.156	.070	.356*	-.273
R(bilateral significance)	.443	.688	.279	.631	.011	.056

**Figure 3.** Distribution of frequency of VA: comparison between DLD and TD population.

His mother said tomorrow I will teach you to fly (03 TD)

The distribution of procedures are shown in Table 6 and Table 7.

Considering the results observed in TVA, the frequency of RSST omitted is very similar for DLD and TD children. The distribution of TVA procedures shows relevant differences, particularly in PVA procedures.

The most frequent procedures are AIVA for DLD children (31.3%) and PVA for TD children (34%). IVA is an infrequent phenomenon for both, which means that in both the great majority of TVA procedures were adequate. We believe that it happens because RSST sequences introduce monological instances, in which general grammatical subjects conflate the main agent in the causal chain (Stein and Glenn, 1979), making it difficult to confound the adequate voice.

The verbal ending has been the morpho-phonological procedure preferred by both groups. We note that it is the Spanish unmarked grammatical strategy for identifying subjects.

c CRS: DLD and TD performance profiles. Trying to identify the intergroup relationships between the different indicators of CRS we carry out a Spearman correlation analysis. Table 8 exhibits the results obtained. The analysis indicates a significant correlation (at level p : 0.05) only between the difference between groups and the reformulation devices displayed. This result indicates that each group tends to use different procedures.

IV Discussion

Considering DLD and TD performances in narratives retell lengths and RS insertion, the results show that both exhibit a very similar performance. These findings coincide with Crespo and Silva (2019) they found that DLD and TD child populations show a very similar performance when they include RS in retellings, with some exceptions (i.e., the frequency of Free Indirect and Narrated RS mechanisms). However, these results do not coincide with previous characterizations about DLD performance in grammar abilities (Altman et al., 2016; Ebbels, 2014). It is possible that earlier interventions in Chilean Specialized Language Schools influenced DLD child performances. Chile holds 2027 Specialized Language Schools, which improve and develop the language skills of the 138554 children from 3 to 6 years old. It represents 24.1% of the whole kindergarten population. These schools have a specialized curriculum focusing on the Speech, Language and communication needs (SLCN) of their students. In addition to the children's activities, they implement seminars for parents and families giving guidelines to foster language and communication in children. A core issue is how to expand the curriculum in child daily settings. We could read an advice in these families guidelines saying

“Es muy motivante para el niño, contarle cuentos cortos, en los que intervengan animales y ellos puedan participar haciendo ruidos, bailes, gestos, etc. Luego hacerle preguntas sencillas sobre lo escuchado” (Is very challenging to the child, to tell him short tales, with animals playing different roles, and in which children can participate making noises, dances, gestures, etc. After that, you can make easy questions about the tale listened).

In this sense, our results indicate that all DLD children could retell and almost the majority of children could retrieve RSSTs that are part of the main actions; they took up, less frequently, beginning and closing RSST.

Considering RSST performances, we found that the sixth RSST exhibits the lowest frequency in both groups. It appears in the tale's coda and it would have been the cause for the lowest frequency.

In sum, in both groups, the number of children who can retrieve RS increases when we consider RSST closer to the plot and decreases at closing and coda episodes. The higher frequency of RS linked to the main actions coincides with some characterizations of narrative development (Slobin, 1997; Stein and Glenn, 1979).

An interesting phenomenon recognized and not described previously has been the emergence of NRS. Although its frequency is low, DLD children tend to produce more than their TD peers do, although in our study it was the TD group that produced the highest amount of NRS. NRS sequences are used to support the progress of the story and seems to repair some memory miss adjustments or displacements, functioning as a “remedial” discursive strategy. Reyes (1995) states that it frequently appears in conversational exchanges because it is unlikely that we can accurately remember words said by the characters, therefore, speakers try to create novel, plausible and coherent RS according to the context and to the actions performed by the characters.

Considering prototypical RS devices, both groups have produced the same types, but in different frequencies and tendencies: DLD children seem to prefer DRS while TD children tend to use IRS more often. We could sort out different explanations to consider this phenomenon. One may consider the different weights of the structural and pragmatic complexities of each device. Some researchers (Griswold, 2016; Reyes, 1995; Shiro, 2012) consider that DRS due to its more basic structural characteristics and earlier ontogenetic character (Nordqvist, 2001), it could be considered a simpler device than others. DLD seems to prefer simpler reformulation devices, such as DRS. Another interesting question is that these results do not coincide with those obtained by Serratrice et al. (2015). In fact, they observed that DLD only could frequently use IRS when they are exposed to. Although our results have not experimentally tested the incidence of IRS as prompts, the ST have mostly DRS instances and DLD children preferred changing it to IRS more than

TD. We could hypothesize that these results demonstrate the efficacy of the Speech Therapies intervention strategies on DLD population but, it is noted that this result would be qualitatively analyzed considering if these uses are representative of a particular group of subjects or a population tendency.

In sum, from a developmental perspective, DRS has been considered a simpler device because, syntactically, it implies the juxtaposition of elements and, pragmatically, it does not require a change of deictic perspective.

In these data, in addition, five RSST appear in DRS, so we think DLD children prefer this device not only because of its characteristics but also its relevance in the ST.

IRS, from a syntactic perspective, demands displaying complex forms, such as subordination and verbal agreement and, from the pragmatic point of view, a change in the deictic system.

To consider non-canonical devices, the results showed that both groups have a high frequency of NRS usages, but TD children overcome the DLD frequency. Although NRS implies displaying a complex cognitive and linguistic process of paraphrasing, at the same time, it involves more straightforward grammatical structuring and conveys generic meaning.

DLD children produce more MRS than TD children. Many of these tokens can be considered ungrammatical (i.e., “and Lilo said that *I would/ go flying like my mother,*”).

Considering TVa, it was observed that both groups show similar performance because both prefer morpho-phonological marking (IVA and AIVA). As mentioned, this procedure is the most frequent in Spanish (unmarked use).

Besides that, we observed that PVA shows a higher frequency in both groups. PVA involves usages in which referents are far away and, by this, the text of child narrative retells seems disarranged. Higher frequency PVA would have originated with the task instrument because children could use and point out images in the storybook as they are retelling.

V Implications

These results give some interesting teaching and clinician guidelines about how design effective strategies fostering grammar and narrative development in DLD children. There are two approaches to facilitate their grammar development: implicit and explicit (Ebbels, 2014). While in the implicit approach, the different methods aim to increase the exposure to target structures, in explicit one teachers and therapists try DLD children by paying attention to them increasing their metacognition levels about their grammar usages (Ebbels, 2014). Several studies have demonstrated the effectiveness of each different approach in some specific and isolated grammar processes, such as morphological markings. (i.e., considering verb inflections or noun derivations), semantic or syntactic issues (see Ebbels, 2014 for a review); but none of them have considered the complex mastering of grammar resources implied in RS usages. Our study reveals the interdependence between narrative and grammar abilities in DLD and TD children. In this sense, “Narrative Based Language intervention” (NBLI) (Fey et al., 2010; Swanson et al., 2005) proposed teaching explicitly narrative structure while using grammar facilitation approaches to teach grammar. Studies results show that the intervention improved children’s narrative quality, but not their grammatical abilities (Fey et al., 2010; Swanson et al., 2005). The authors attributed this to the DLD limited processing resources, so it is possible that in Spanish RS usages entails a more strong relationship between narrative performance and grammar abilities that, for DLD children, creates some kind of “facilitation frames” through retellings. These “frames” would improve processing resources associated with the specific grammar abilities required in RS uses. In this sense, our findings partially coincide with other studies that report syntax could function, for DLD children, as a bootstrap to foster other cognitive abilities (Sundström et al., 2018). We should test the hypothesis in future research, but the cues that RS would give could be fruitful at intervention’s design.

Based on this, we plan some suggestions for clinical and teaching practices, for example, to include different RS forms in the narrative sequences to spread out DLD children grammatical resources and to improve their language skills. Activities such as requesting children to remember the sayings or thoughts, to create voices with different pitches or to sing the words sayings, could be function as “facilitation frames” fostering DLD language skills.

On the other hand, results show the relevance of considering TD authentic usages at designing remedial language interventions. In fact, we could see not only DLD omit target structures though TD children also omit the insertion of RS in some sequences. In consequence, if DLD children omit an expected structure, we should not always attribute it merely to the disorder characteristics (i.e., limitations of processing); nevertheless we should take into account that other factors interfere, such as the pragmatic task demands (Crespo and Silva, 2019).

At last, considering the planning of DLD services we observed, as it has been previously suggested (Glover et al., 2015) the earlier, systematic and collaborative programs and actions implemented jointly by the Health and Educational Systems improve the opportunities that DLD equal TD children language performances. As it was suggested by some organizations this kind of holistic approach combines the skills, knowledge and collaboration of agents involved in different services in order to provide the best intervention for children with SLCN (Speech Pathology Australia, 2017). In this sense, the Chilean government implemented an early diagnosis and a “holistic” intervention program. In these years, it has demonstrated a very deep impact at improving the DLD population’s communication abilities in relation to other Latin American countries. However, we believe that it could be better if it would include a systematic research program, so the interventions would be evidence- based.

VI Conclusions

This research contributes to the description of RS usages in Spanish-speaking children of school ages, considering RS as a later language developmental device (Nippold, 2016). A considerable number of studies have considered RS, both in adults and children, but we have not found fewer considering RS in the DLD child population. This study aims to supply this lack: analyzing and characterizing RS via DLD and TD trends comparison. Indeed, we have considered RS complexity, considering its variations and its token’s frequency. According to the results, we can conclude that, in Spanish, both populations can produce, in a similar way, RS in narratives; but DLD children, although handle the same forms as their TD peers, seem to exhibit slightly lower management of some linguistic devices that conventionally codify RS.

From an applied perspective, these results contribute to the description of the communicative profile of DLD Spanish-speaking children. Indeed, it sheds light about the entrenchment of narrative and grammar abilities in the DLD population. In that sense, this knowledge could be useful to design clinical interventions and early DLD screening.

We believe that this study posits interesting research guidelines, i.e., comparing RS development at different ages, comparing DLD and TD, or studying RS with other techniques to determine whether tasks affect performance and so on.


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Note

1. We include in brackets the clause number in which the phrases are located because the mentions used are far away from the character's mention.

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