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Original Article

Artigo Original

Syntactic markers in the oral retelling of dyslexic students

Marcadores sintáticos no reconto oral de escolares disléxicos

Adriana de Souza Batista Kida[1]
Clara Regina Brandão de Ávila[2]
Simone Aparecida Capellini[1]

Keywords

Evaluation
Reading
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ABSTRACT

Purposes: To investigate, in the oral retelling after reading process, the syntactic markers capable of characterizing different clinical groups of developmental reading disabilities. **Methods:** Thirty-two Brazilian students were evaluated: dyslexic group (DG) — 16 individuals were diagnosed with developmental dyslexia; control group (CG) — 16 individuals did not present reading difficulties when compared with the DG by age, gender, and educational level. They all read one narrative and one expository text and orally retold what was read. The retellings were recorded, transcribed, and analyzed via *Coh-Metrix-Port*. The performances were statistically analyzed using productivity indexes, lexical diversity, grammar skills, and complexity. **Results:** DG showed a lower average of correct sentences in the narrative and expository retellings, fewer words per sentence, and a lower incidence of content words in the expository retelling. **Conclusion:** The analysis of the microstructure of retellings differentiated the groups' performances. Dyslexic students presented lower grammar skills for narrative and expository text retellings. Fewer words per sentence and a lower incidence of content words characterized the retellings of expository texts by dyslexic students, possibly a consequence of a higher cognitive demand to the reading comprehension of this type of text.

Descritores

Avaliação
Leitura
Aprendizagem
Dislexia

RESUMO

Objetivo: Caracterizar marcadores sintáticos na expressão oral de escolares disléxicos em tarefa de reconto oral da leitura de textos. **Métodos:** Avaliou-se 32 escolares que compuseram dois grupos: Grupo Dislexia (GD) – 16 com diagnóstico de dislexia do desenvolvimento, Grupo Controle (GC) – 16 sem queixas de leitura, pareados ao GD por idade, gênero e escolaridade. Todos leram um texto narrativo e um expositivo e os recontaram oralmente. Os recontos foram gravados, transcritos e analisados por meio do *Coh-Metrix-Port.* Analisou-se, estatisticamente, o desempenho por meio dos índices de produtividade, de diversidade lexical, de complexidade e de competências gramaticais. **Resultados:** GD mostrou menor média de sentenças corretas em recontos narrativos e expositivos, menor número de palavras por sentença e incidência de palavras de conteúdo para o expositivo. **Conclusão:** Escolares disléxicos apresentaram menor competência gramatical ao recontarem textos narrativos e expositivos. Menos palavras por sentença e menor incidência de palavras de conteúdo também caracterizaram o reconto de textos expositivos na dislexia, possível efeito da maior demanda cognitiva imposta pelo tipo de texto à compreensão leitora.

Correspondence address:
Adriana de Souza Batista Kida
Avenida Hygino Muzzi Filho, 737, Mirante, Marilia (SP), Brazil, CEP: 17525-000.
E-mail: adrianabatista@gmail.com

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Study conducted at the Learning Disorders Research Laboratory of the Department of Speech–Language Pathology and Audiology of the Universidade Estadual Paulista "Julio de Mesquita Filho" – UNESP – Marilia (SP), Brazil.
(1) Department of Speech–Language Pathologyand Audiology, Universidade Estadual Paulista "Julio de Mesquita Filho" – UNESP – Marilia (SP), Brazil.
(2) Department of Speech–Language Pathology and Audiology, Universidade Federal de São Paulo – USP – São Paulo (SP), Brazil.
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INTRODUCTION

Several evidences of phonological and meta-phonological deficits in dyslexia support and reinforce the importance of the investigation of this language subsystem and its processors for the clinical diagnosis of reading disorder. However, the investigation of alterations in other language areas, such as syntax-morphology interface (morphosyntax) is incipient, although there is evidence of alterations in dyslexic individuals. Among them are the low performance in syntax as evidenced by a greater number of grammatical mistakes and incomplete sentences[1], errors in noun and verb agreements[2], and difficulties in tasks involving morphological awareness[3]. The presence of delays in morphosyntactic language development of children considered at risk for dyslexia, so even before learning to read, has pointed out an evidence that poor morphosyntactic skills are not purely a result of insufficient exposure to reading[4].

The relation between the learning of reading and the development of spoken language is consensus in the literature and, therefore, the investigations of the alterations in processors and subsystems of language, as probable causes and/or predictors of reading demonstrations, are not rare[5,6]. This evidence only reinforces the importance of investigating the morphosyntax in the search for potential clinical markers that can assist the characterization and diagnosis of dyslexia.

The morphosyntactic research has benefited from the analysis of the microstructure of the speech, in which characterization of the retelling through objective measures of syntactic structures[7] proves to be an effective assessment for both predicting academic performance[7] and differentiating the performance in syntax of the students with and without reading disability[7-9]. Among the many variables related to the analysis of the narrative microstructure there are the productivity, which relates to the quantification of the speech[10,11]; lexical diversity, which means the variety of words used in a narrative situation[12]; and the grammatical complexity[13] and the grammatical competence, involving the precision in the use of the grammar[9-11,14].

In order to accurately obtain the syntactic measures, computational tools have been successfully used in the analysis of the speech. In this context, we highlight the Coh-Metrix program, which produces widely studied and validated measurements[15]. This program is used to measure the syntactic structure of written texts[16] and transcripts of narratives or oral retelling of the texts read[17,18]. There is a version adapted for analysis of Brazilian Portuguese, the Coh-Metrix-Port.

The Coh-Metrix-Port[19] is an adaptation of the metrics of Coh-Metrix 1.0 for the Brazilian Portuguese and has 34 of the 60 metrics available in the original program. Still restricted to the computer analysis in oral or written tasks in Portuguese, Coh-Metrix-Port has not yet been applied to investigate the narrative microstructure in the schoolchildren. A study employing computational tools adapted to Brazilian Portuguese to investigate the language microstructure of dyslexic individuals may be promising in the search for evidence of alterations in the linguistic domains[10]. It should contribute to the functional diagnosis of human communication disorders, in addition to promoting comprehension of the findings in a language of Latin origin, especially if compared with the results obtained in English.

This study aims at characterizing the linguistic productivity of the oral retelling in the Brazilian children diagnosed with developmental dyslexia, in order to identify the possible syntactic markers capable of differentiating their linguistic performances from that expected for proficient readers.

It is assumed that the retelling task after reading is an activity performed in two phases. The first phase, involving the comprehension, depends on receptive language and encompasses the abilities to identify and memorize the main ideas of the text, to understand and establish the relationships between the main ideas, and to organize them, mentally, in a structured and coherent system that allows the comprehensive understanding of the reading[21]. The second phase, involving the expression, requires the expressive language domain in order to convey the ideas inferred from the text[14]. The oral retelling of a text, by its nature, may prove a potentially important tool, because it refers to a specific content, presented and delimited by the text itself. The analysis of the retelling allows the clinician to obtain important information on the reading comprehension of the person evaluated and their ability to communicate orally.

The specific research questions aim at investigating the possible differences in the oral expression of a clinical group and its control in retelling tasks after reading, under the assumption that dyslexic students must present poorer performance in the syntactic domains in situations of spoken language construction. The questions also consisted of the following objectives:

1. to increase the number and variety of measures investigated, considering for this purpose the following indicators pointed out by research conducted in the English language: productivity, lexical diversity, grammatical complexity, and grammatical competence;
2. to study the influence of the type of text on the retelling, and analyzing the behavior of the variables related to the performance of the oral retelling depending on the nature of the recounted texts (narrative versus expository).

METHODS

This study was approved by the Research Ethics Committee of the Universidade Estadual Paulista "Júlio de Mesquita Filho" – UNESP - Marília (No. 0928/2014). The assessments started after the following: 1) authorization to collect data at the Clinic of Learning Disabilities at the Clinical Hospital of Faculdade de Medicina de Botucatu – Universidade Estadual Paulista "Júlio de Mesquita Filho" – UNESP - Botucatu and the Laboratory for Investigation of Learning Disabilities at the School of Philosophy and Sciences, Universidade Estadual Paulista "Júlio de Mesquita Filho" – CEES/FFC/UNESP - Marília (SP).

Participants

Thirty-two students participated in the study and integrated two research groups: dyslexia group (DG): 16 children diagnosed with developmental dyslexia; control group (CG): 16

students without complaints of reading difficulties, paired with the DG by age, gender, educational level, and type of school. We adopted the absence of complaints or indicators of hearing loss, visual, neurological, behavioral, or cognitive disorders as the inclusion criteria. All the students were Brazilian Portuguese native speakers.

Table 1 summarizes the distribution of the participants by gender, age, and educational level.

The DG participants were selected by the diagnosis conducted by an interdisciplinary team (child neurologist, neuropsychologist, educational psychologist, and speech–language pathologist), held at the Laboratory for Investigation of Learning Disabilities at the School of Philosophy and Sciences, Universidade Estadual Paulista "Júlio de Mesquita Filho" – CEES/FFC/UNESP - Marília (SP) and Clinic of Learning Disabilities at the Clinical Hospital of School of Medicine – Universidade Estadual Paulista "Júlio de Mesquita Filho" – UNESP - Botucatu.

The students of DG showed a discrepancy between the verbal IQ and the execution in the psychological assessment WISC-III; alterations in relation to the phonological memory, reading, and writing in the neuropsychological tests[22]; phonemic and syllabic alterations, rhyme, and alliteration in phonological awareness tests[23]; and oral reading rate and accuracy lower than expected for the age and educational level, measured by oral reading of words and separate pseudowords[24].

The participants in the control group (CG) were recruited in primary education in public schools. In addition to the inclusion criteria determined for all the participants in the sample, they showed no history of speech and language disorders and academic or reading difficulties.

The study of the matching between the clinic and control groups in terms of gender and age showed that the groups were properly paired (gender: χ^2 (2)=2.775, p=0.438, (likelihood ratio) indicates no differences between the expected frequencies in gender between the two groups investigated; Age: ANOVA test - F (3.54)=1.405, p=0.251, η^2=0.072). The comparison of the variables of decoding, rate and accuracy of reading, showed that the clinical group (DG) presented lower values when compared with the control group (rate: DG, mean=28.2, CG, mean=58.4, t=-7.382, p=0.000, d=-2.62; accuracy: DG, mean=13.4, CG, mean=50.1, t=-7.622, p=0.000, d=-2.707).

Table 1. Participant's distribution by gender, age, and educational level

Variables	Groups	
	DG (n=16)	CG (n=16)
Gender (%)		
Male	56.30	56.30
Female	43.80	43.80
Age		
Minimum	8.6	8.3
Maximum	12.5	12.4
Average	10.8	10.3
SD	1.2	1.1
School year		
3rd year - n (%)	3 (18,75%)	3 (18,75%)
4th year - n (%)	2 (12,5%)	2 (12,5%)
5th year - n (%)	11 (68,75%)	11 (68,75%)

Caption: DG = dyslexia group; CG = control group; SD = standard deviation;

Procedures

Retelling task after reading

The children were assessed after reading a narrative and an expository text. In this study, we used three narrative texts selected from didactic books and three expository texts were elaborated[1] with appropriate syntactic complexities for each of the investigated school years (Flesch index[I] and frequency of occurrence of words[II], number of words and sentences in the text, sentences per paragraph, type/token[III], incidence of content words[IV], incidence of pronouns, number of pronouns by phrase[V], and number of connectives[VI]). In addition, all narrative texts respond to the grammar of the stories containing settings and episodes divided in: initiating event, internal response, planning, execution, consequence, and reaction[25]. The expository texts were elaborated containing themes related to the educational content of school years ahead of those of the children evaluated, with the intention to restrict the influence of their prior knowledge on the reading comprehension.

The students were instructed to read two texts, one at a time, in the same way they usually follow to understand the text (aloud or silently). After reading, the participants recounted what they understood, and the retelling was recorded and submitted to transcript for further analysis.

The retelling transcripts were adapted for the analysis of computational parameters of linguistics productivity. For this procedure, the following criteria were established:

1. suppression of the marking of short and long silent pauses;
2. Sentences interrupted with a period were marked;
3. suppression of transcription of the incomplete words; (d) insertion of the score based on the language rules; (e) suppression of transcription of the repeated words; (f) suppression of the syntactic errors promptly self-corrected, keeping only the corrected transcript of the speech; (g) correction of errors of phonological type and; (h) suppression of marking of filled pauses.

[I] The Flesch Readability Index seeks a correlation between average length of words and sentences and readability. Four reading difficulties ranges are identified for the Portuguese language. However, in this project, we used only the following: (a) very easy texts (index from 75 to 100), suitable for readers from the //1st to 3rd grades; (b) easy texts (index from 50 to 75), suitable for readers from the //4th to 9th grades.

[II] Average of all frequencies of content words found in the text (nouns, verbs, adverbs, and adjectives). The value of the frequency of words adopted comes from the corpus Banco de Português (BP), compiled by Tony Sardinha at PUC-SP.

[III] Number of different words divided by the number of tokens of these words. Each different word is a type. Each repetition of this word in the speech is a token.

[IV] Incidence of content words in a text: nouns, verbs, adjectives, and adverbs.

[V] Average number of pronouns that appear in a text divided by the number of phrases.

[VI] Incidence of all connectives appearing in a text.

The same speech–language pathologist performed all of these modifications.

A researcher reviewed the changes made in the recount, and the discrepancies found were corrected through the consistent application of the criteria.

Verbal productivity measures

The following variables were adopted for this study, subject to analysis by computerized tool Coh-Metrix-Port[19]:

1. Productivity index: number of words and number of spoken sentences;
2. Lexical diversity indexes:
   - Frequency of content words: calculated based on the average frequency of all content words found in the speech (nouns, verbs, adverbs, and adjectives).
   - Minimum frequency of content words: equal to the average of all minimum frequencies of the content words obtained in each of the sentences of the speech.
   - Type/token ratio: Number of different words divided by the number of tokens of these words. Each different word is a type. Each word is a token. For example, if the word "dog" appears 7 times in a text, its type is 1, and its token is 7. The program calculates this metric only for content words (nouns, verbs, adverbs, and adjectives).
3. Grammatical complexity indexes:
   - Number of words per sentence;
   - Incidence of content words (nouns, verbs, adverbs, and adjectives);
   - Incidence of function words (articles, prepositions, pronouns, conjunctions, and interjections);
   - Total number of logical operators: the program considers the following logical operators: and, or, if, negations (no, neither, none, nothing, never, and ever) and a number of conditions (in case, since, provided that, once, unless, without, except that, that is, and why). Total number of logical operators in the speech is quantified and then divided by the total words spoken;
   - Total number of connectives: the program has connective lists classified into two dimensions: positive and negative connectives (positive connective extends events, while negative connective stops events); connectives are also classified by the type of cohesion: additives, temporal, causal, and logical. The program quantifies the total number of connectives found in the discourse and divides them by the total words spoken.

Variables related to the grammatical competence were then added to this analysis[26]:

- Total grammatically correct sentences;
- Percentage of grammatically correct sentences, calculated by dividing the number of correct sentences by the total sentences produced by the subject.

To this purpose, the following were considered grammatical errors: disrespect to the rules of verbal and noun agreements; errors in use of the verbs (inadequacies in conjugation, verb tenses, and modes); verbal regency errors (inadequacies in the use of multiword, phrasal, and prepositional verbs); inappropriate use of pronouns; phrase construction errors in relation to the word order and focus; and errors in morphology derivation.

The total score of grammatically correct sentences of all transcripts was performed by two speech–language pathologists, whose interrater agreement (Cohen's Kappa coefficient) was 0.87.

The adoption of these measures aimed at keeping the greatest number of variables available to analyze: the dimensions that reflect the use of syntax in the case of productivity variables and grammatical complexity; and competence in the use of syntax, in the case of grammatical competence variables and vocabulary (lexical diversity). Thus, the analysis by means of statistical procedures could reveal, which are the best indexes to differentiating the performance in the spoken language of the studied groups.

RESULTS

The tests were performed to investigate the presence or absence of a normal distribution (Kolmogorov–Smirnov (KS) test for one sample), whose results showed normal distribution in most part of the variables investigated. The following specified variables presented nonnormal distribution:

- the dyslexia group (DG) analysis: minimum frequency for retelling of narrative texts (mean=6345.7; SD=18963.1; p=0.004) and expository texts (mean=1059.1; SD=2441.1; p=0.028);
- the control group (CG) analysis: percentage of correct sentences for retelling of narrative texts (mean=104.5; SD=31.4; p=0.001) and expository texts (mean=92.3; SD=12.2; p=0.03), and minimum frequency for the retelling of expository texts (mean=552.4; SD=79.9; p=0.031).

In order to compare the performance between clinical groups and their controls, *t*-tests were conducted for the parametric variables under investigation, using independent samples. We considered as significant the results of $p<0.05$. The degrees of freedom (*df*) showed a value of 30 for DG in these comparisons.

Analyses comparing the variables classified as nonnormal were performed using the Mann-Whitney test.

Tables 2 and 3 summarize the results for comparisons between DG and CG.

When we analyzed the retelling of expository texts, the results indicated that the DG distinguished from the typical group of children in relation to the performance in the grammatical complexity variables. The performance of dyslexic students revealed fewer words per sentence, meaning the use of more concise sentences (DG: mean=13.19; SD=4.15; CG: mean=16.63; SD=3.18; p=0.013) and, therefore, grammatically simpler and presenting lesser use of content words (DG: mean=587.4; SD=37.8; CG: mean=587.4; SD=53.8.18; p=0.028).

The comparative analysis of performance averages for the variables of nonnormal distribution, related to the analysis of retellings of the texts read by students with dyslexia and their respective controls, showed differences in grammatical competence for both types of retelling (narrative and expository), with a lower percentage of correct sentences for DG (narrative retelling of DG: mean=85.2; SD=18.2; mean of positions=12.91;

Table 2. Results of parametric statistics for variables with normal distribution (DG *versus* CG)

Variables		Mean	SD	*T*	p-value	*d*	Result
Retelling of expository text							
Productivity							
# Words	DG	92.81	48.06	-1.918	0.065	-0.681895706	DG=CG
	CG	129.37	59.18				
# Sentences	DG	9.12	6.86	-1.542	0.134	-0.551108968	DG=CG
	CG	13.56	9.24				
Lexical diversity							
Frequency	DG	231255.4	75343.11	0.243	0.810	0.08798621	DG=CG
	CG	222712.8	118837.73				
Type/Token	DG	0.77	0.11	0.104	0.918	0.036756729	DG=CG
	CG	0.77	0.09				
Grammatical complexity							
Words/Sentence	DG	11.8	4.37	0.006	0.996	0.001995726	DG=CG
	CG	11.79	4.39				
Content Words	DG	586.44	63.95	0.311	0.758	0.11226125	DG=CG
	CG	580.47	42.45				
Funct. Words	DG	381.72	66.89	-0.328	0.745	-0.116784812	DG=CG
	CG	388.78	54.01				
Logical Op.	DG	50.78	29.82	0.127	0.899	0.04627578	DG=CG
	CG	49.66	18.43				
Connectives	DG	53.78	17.40	-0.978	0.336	-0.377261	DG=CG
	CG	65.44	44.41				
Syntactic Competence							
Correct Sentences	DG	8.19	6.96	-1.726	0.095	-0.61396	DG=CG
	CG	13.00	8.72				
Productivity							
# Words	DG	52.56	28.59	-0.796	0.432	-0.282919	DG=CG
	CG	59.93	23.54				
# Sentences	DG	4.00	1.751	0.425	0.674	0.1505229	DG=CG
	CG	3.75	1.571				
Lexical Diversity							
Frequency	DG	197268.238	126702.956	0.129	0.898	0.04647	DG=CG
	CG	192285.212	87759.288				
Type/Token	DG	0.860	0.133	-0.033	0.974	-0.012038	DG=CG
	CG	0.861	0.074				
Grammatical Complexity							
Words/Sentence	DG	13.191	4.152	-2.629	0.013	-0.93765	DG < CG
	CG	16.629	3.183				
Content Words	DG	587.399	37.793	2.308	0.028	0.8282689	DG < CG
	CG	549.452	53.837				
Funct. Words	DG	383.514	60.601	-1.692	0.101	-0.598383	DG=CG
	CG	418.854	57.517				
Logical Op.	DG	38.988	33.918	-1.654	0.109	-0.593935	DG=CG
	CG	56.105	23.721				
Connectives	DG	64.975	29.265	-1.264	0.216	-0.447131	DG=CG
	CG	77.653	27.444				
Syntactic Competence							
Correct Sentences	DG	2.750	1.653	-0.681	0.501	-0.241301	DG=CG
	CG	3.125	1.455				

Caption: # Words = number of words of the text; # Sentences = number of sentences in the text; Frequency = average of all frequencies of the content words found in the text; Type/Token = number of different words divided by the number of tokens of these words; Words/Sentence = number of words divided by the number of sentences; Content Words = incidence of content words; Funct. Words = incidence of function words; Logical Op. = incidence of logical operators; Connectives = incidence of connectives appearing in a text; Correct Sentences = number of correct sentences; SD = standard deviation; DG = dyslexia group; CG = control group.

Table 3. Results of nonparametric statistics for nonnormally distributed variables (DG *versus* CG)

Groups	Mean of positions	Sum of positions	Mann-Whitney U Test	p-value	Results
Narrative Retelling					
Lexical Diversity					
Min frequency					
DG	18.81	301.00	91.000	0.162	DG=CG
CG	14.19	227.00			
Grammatical Competence					
% Correct Sentences					
DG	12.91	206.50	70.500	0.021	DG<CG
CG	20.09	321.50			
Expository Retelling					
Lexical Diversity					
Min frequency					
DG	16.41	262.50	126.500	0.955	DG=CG
CG	16.59	265.50			
Grammatical Competence					
% Correct Sentences					
DG	13.06	209.00	73.000	0.027	DG<CG
CG	19.94	319.00			

Caption: Min frequency = minimum frequency of all the content words; % Correct Sentences = percentage of correct sentences; DG = dyslexia group; CG = control group.

CG: mean=104.5, SD=31.4, mean of positions=20.09; u=70.50, p=0.021; expository retelling of DG: mean of positions=13.06; CG: average of positions=19.94; u=73.00; p=0.027).

DISCUSSION

Some of the linguistic variables in this study differentiated the performance of the clinical group from their respective control, showing a poorer performance of the dyslexic students.

In this regard, the results of DG showed that regardless of the retold text, narrative or expository, and, therefore, the cognitive demands imposed by the text comprehension, oral production was characterized by a worse performance on the grammatical competence. The DG executions were characterized by a lower percentage of correct sentences when compared with their peers. Thus, the dyslexic students included in this sample presented lower skills in applying the rules of verbal and noun agreement, lower assertiveness in verbal conjugations, tenses and regency, lower proficiency in the use of pronouns, in the word order and focus, and in the use of morphology derivation.

With regard to the efficiency in the use of grammatical rules, previous studies in English supported the hypothesis that dyslexic individuals show less proficiency in the use of grammar rules when compared with typical readers[1,2,14,27], similar to the findings of this study. However, these same results do not appear in the syntactic performance of Russian schoolchildren on the retelling tasks[15].

Among the scientific evidence, worse performance of dyslexic individuals have been observed when measuring their fluency skills, completeness, and grammatical accuracy in the elaboration of sentences[1,27]. When evaluated lengthwise, the difficulties regarding the grammatical accuracy were resolved during adolescence, suggesting that the grammatical development in children with dyslexia may be delayed[1].

One explanation would be that the first representations of words require its mapping and association between the phonological representations and their semantic representations. However, in children with dyslexia, phonological representations are unstable or inaccurate, which slows down the development of reliable representations of the word[1,4,28] and knowledge of morphological units, which, in general, also carry important syntactic information of the language[3,28].

In this regard, considering the data presented on the analysis of the dyslexic group, an aspect that should be emphasized is that, in the syntactic structure of the Portuguese, the verbal inflection morphemes are always positioned at the end of the word. Therefore, considering that dyslexic individuals may fail to read the stimulus, in initial or medial syllables, or even use the semantic access to guess the stimulus without ever reading the end of the word, the mistakes can contribute to the absence of accurate orthographic representations of the word, and the inadequate experience with grammatical morphemes can harm the learning of verbal inflection rules.

With regard to the retelling of the expository texts only, dyslexic individuals showed the worst performances in the variables of grammatical complexity, characterized by a speech with shorter sentences and lesser use of content words. These findings support the hypothesis that, in tasks of higher cognitive demand, such as in the retelling of expository texts, both productivity and efficiency in syntax may be impaired when expressing the content read[29].

In fact, the task of understanding the expository texts is more demanding when compared with the narrative texts, given the amount of information that the former provides[29]. The expository texts can perform the role of instructing on a given subject, because a lot of new information can be found on the text. Thus, the lack of familiarity with the subject, which is the case of the expository texts used in this study, because

the themes they addressed are applicable to higher grades in order to ensure the absence of interference from previous knowledge, may have resulted in lower availability of knowledge to facilitate the processing of information. The most common approach in such situations is that the reader strategically seeks to record the ideas read in his memory, without necessarily understanding them or their relations with other ideas in the text. The difficulty in predicting which of these ideas would be the most relevant information and the best option for storing a large number of text ideas would result in a greater burden on the working memory, which would make processing of expository texts more demanding than the narrative texts[29]. Thus, the greater attention paid and the cognitive effort may result in difficulties in establishing relationships between facts conveyed in the text, grammatically characterized by the use of conjunctions and complex sentences. In this circumstance, the retelling can be characterized by the more frequent use of sentences grammatically simple (simple periods) and, therefore, with fewer words.

Added to this condition is the evidence that dyslexic individuals made less use of content words (nouns, verbs, adjectives, and adverbs) when compared with nondyslexic students. This type of information contained in the text, often expressed by this category of words, can be frequently misunderstood and thus removed from the oral recount. These assumptions of the interaction between the performance in the syntactic complexity variables and the task of reading comprehension can be confirmed, as new studies are conducted, in order to add to its observations the statement of retold text ideas, which is a limitation of this study.

Another explanation for the use of a smaller number of words per sentence and the lower incidence of content words in the retelling of expository texts would be admitting that these situations may be owing to poorer reading accuracy observable for dyslexic students, more frequent in situations of lesser familiarity with a given topic addressed by the text and with the vocabulary presented. Frequent errors in text decoding interfere in the construction of basic text, resulting in the loss of key ideas for the text comprehension and more difficulties in establishing the relationship between the transmitted information[30]. This hypothesis considers the evidence that dyslexic students exhibit a higher error rate for text connecting issues when compared with students with proficient reading[30].

In short, the lower efficiency in the use of grammar rules by dyslexic individuals, a finding similar to others described in the literature in English-speaking schoolchildren, may reflect both: deficits in syntactic development which, according to some authors, could be owing to flaws in the phonological representation of the word by instability and inaccuracy, damaging the construction of the syntactic knowledge necessary to the recognition of essential grammatical morphemes for the grammatically correct expression; and inadequate experience with morphemes in reading situations, which seems independent of the spoken language.

The different profile revealed when comparing the performances of clinical and control groups indicates that the analysis of the microstructure of the discourse can assist in the characterization of dyslexia, contributing to a more specific diagnosis. Therefore, the task of retelling a text read proves to be a promising clinical assessment tool not only for the performance in the reading comprehension but also in the linguistic expression.

CONCLUSION

Students with dyslexia differed from the proficient readers by revealing poorer grammatical competence, characterized by a lower percentage of correct sentences, expressed on the retelling of both narrative and expository texts.

The performance difference was more comprehensive in the retelling of the expository texts not only by the lower percentage of grammatically correct sentences but also by the number of words per sentence and the incidence of content words that also differentiated the performance of dyslexic from the typical children. This result is owing to a possible effect of higher cognitive demands imposed by expository texts that make it difficult to retain and establish relationships between the information read.

**ASBK prepared the project and the evaluation tool, collected and analyzed the statistics of the survey data, identified the literature, and wrote the article; CRBA collaborated in drawing up the assessment tool, in the discussion of survey data, and the preparation of the article; SAC supervised the study, participated in the discussion of the data, and the preparation of the article.*

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