LUMEN ET VIRTUS

Performance of students in gaping texts with the use of pictures and words

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ABSTRACT

The objective of this study was to verify the performance of students in the 2nd year of Elementary School in the use of text with pictures and text with words. The study included 21 students from the 2nd year of public education, without learning difficulties. The initial stage of the research proposed to carry out the adaptation of two texts. In the first text, words were replaced by gaps to fill in, with the selection between two figures of the one that best represented the meaning of the sentence and, subsequently, the word was written in the gap. In the second text, words were removed and gaps were formed to be filled in with a written word, selected between two semantically different response options. In the next stage, the texts were applied in two individual sessions. As a result, there was an average of 6.95 out of a maximum of seven gaps in the first text and 8.3 out of a total of nine gaps for the second text. Reading time was longer at T2 compared to T1. In the classification of misunderstandings to fill in the gaps, most exchanges were identified as close co-hyponyms. Regarding spelling errors, the students had a higher number of errors in the first text compared to the second. It was concluded that it was possible to verify the performance of students in the 2nd year of Elementary School in the use of lacunated texts, both with images and words. The analysis of the answers by successes and errors helped in the reflection on the processes acquired in this educational phase and on measures that can help the learner, since the rate of correct answers was high.

Keywords: Reading, Comprehension, Speech Therapy, Learning, Literacy.

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INTRODUCTION

Learning to read and write are important skills for social interaction, as they open up countless possibilities for the reception and exchange of information, providing new knowledge. However, learning these two competencies does not happen in the same way for all individuals, in addition to being a long process and influenced by aspects of oral language, cognitive, social, and emotional (Bettio & Bazon, 2019).

According to data from the National Literacy Assessment (ANA) applied in Brazilian public schools with the aim of outlining the literacy levels of students in the 3rd year of Elementary School in reading, writing and mathematics indicate that, in 2016, 54.73% of these students were in insufficient reading levels (BRASIL, 2017). Of these, 21.74% were at level 1, indicating that more than 465 thousand students in the 3rd year were still unable to recognize the purpose of texts such as recipes, tickets, posters and invitations; identify, in texts with up to five lines, explicit information; and perceive the subject of texts in the title or in the first line (BRASIL, 2018).

Reading and writing are not innate skills for human beings, they require formal education to be acquired. Their learning requires the development of multiple skills that need to be mature, including learning the alphabetic code, letter/sound recognition, transposition of sounds into read or written words, access to their meaning, among others. Thus, being literate corresponds to a fundamental milestone in child development, which begins with reading and later has its unfolding into other even more complex skills, such as reading comprehension (Rasinski, 2017; Silva & Fonseca, 2021).

Reading comprehension can be understood as the result of the process of reading, association, and construction of meaning, based on what is explicitly identified in the text and according to inferential aspects, associated with the reader's knowledge of the world and based on intratextual structures (Rebello et al., 2019). Thus, in order for there to be a broad understanding of what is read, it is not enough for the child to be taught to decode, it is necessary that specific skills such as focused attention to passages of the text, the retrieval and association of information by working memory, access to the lexicon for the evocation of vocabulary, along with its meaning and knowledge of the world, is accessed efficiently (Peng et al. 2019; Varizo et al., 2022).

Reading and comprehension are associated skills, which feed each other, since reading without comprehension makes the process incomplete and reading comprehension has its origin in word recognition during decoding (Oakhill & Cain, 2011). The success of the association of these skills makes it possible to understand what is read, for the learning of new concepts and information, an extremely important factor throughout life, but which

becomes paramount during the school period. In this context, the deficit in reading and comprehension implies educational delay and the sooner the causes of poor performance are identified, the less damage there is during this process (Kendeou et al. 2014; Souza et al., 2019)element.

However, strategies for adapting materials can be carried out in order to facilitate and collaborate with the teaching of reading and comprehension, among them the use of images, highly explored in the early years of literacy. Access to information through images, to obtain meaning via visual input, provides the learner, in the literacy phase, with a more precise access to vocabulary and its meaning, since the image directs not only the linguistic representation of its signifier, but also refers to the meaning. Thus, the use of representative images associated with sentences and short texts is a relevant tool for the process of teaching reading, due to word recognition, and for comprehension, by facilitating access to meaning (Varizo et a., 2022; Abas, 2023).

According to the specialized literature, to improve reading and comprehension, it is necessary to work with several processes, including those considered low-level, such as decoding, accuracy in word recognition, reading fluency, and access to the meaning of the language (Peng et al., 2019; Souza et al., 2019; Silva & Rodriguez, 2021). And the high-level processes, that is, of greater linguistic and cognitive complexity, such as the association between parts of the text that make up the textual macro and microstructure, the use of implicit and explicit inferences, and aspects associated with executive functions, such as working memory, attention and inhibitory control for the selection of information that makes sense and is relevant to comprehension (Roldán, 2019; Petscher et al., 2019).

The use of specific strategies can help identify alterations in one or more aspects related to reading and comprehension. Among them, the Cloze Technique can be cited as a tool, with applicability in different educational cycles. Succinctly, the Cloze Technique consists of organizing texts of approximately 200 words, in which the first and last clauses are preserved. From the second clause onwards, words are omitted in a structural way, in which the 5th, 7th or 10th words are eliminated, these being functional words; or lexically, eliminating words from the same grammatical category (Taylor, 1953; Santos & Monteiro, 2016; Cunha et al., 2018).

The applicability of Cloze aims to measure specific reading comprehension skills, through access to the meaning of the word for the comprehension of the textual microstructure, with the identification of words that complete each sentence with coherent meaning. The aspects of microstructure are reflected in the understanding of the textual macrostructure, as the parts of the text complement each other in the textual composition

as a whole. Thus, the Cloze Technique allows the measurement of both a lexical component and a functional component, depending on the type of word selected to be suppressed (Oliveira et al., 2017; Abreu et al., 2017; Cunha et al., 2018).

Since word recognition for decoding and extraction of meaning are the basic levels necessary for learning comprehension, and alterations in these levels can be identified from the beginning of literacy, that is, in the 1st and 2nd years, the possibility of a work directed to this population arises. Reducing the need to wait for the later years of elementary school to carry out strategies to monitor and enhance the initial learning of reading and writing (Oakhill & Cain, 2011; Kendeou et al., 2014; Silva & Rodriguez, 2021).

This study hypothesizes that the use of serial texts, aimed at the 2nd year of Elementary School, is an effective tool in the stimulation and monitoring of reading and reading comprehension associated with low-level processes (decoding and recognition of words with association with meaning).

Therefore, it is necessary to develop strategies that allow this monitoring of performance in reading and reading comprehension, focused on the aspects of decoding, access to lexical memory and comprehension of information, in addition to the functions of memory and attention. Based on the points described, the study is justified by the relevance in the identification of reading and comprehension alterations from the early years of schooling and by the lack of strategies that monitor performance in this age group, which often makes it impossible to apply early strategies associated with the learning of reading, acquisition and development of reading comprehension in the early years of schooling.

In view of the exposed context, the objective of this study was to verify the performance of students in the 2nd year of elementary school in the use of text lacuna with pictures and text lacunado with words.

METHOD

This is a quantitative, cross-sectional, exploratory and experimental field study. Prior to the beginning of the research, this proposal was submitted to the Research Ethics Committee and approved under opinion number 3,939,907. The research only began after the participants and those responsible for the research signed the terms of Assent and Free and Informed Consent, respectively, according to the resolution of the National Health Council - CNS 466/12.

ADAPTATION AND APPLICABILITY OF TEXTS

For the adaptation of the material, two texts of the narrative genre belonging to the original material of Cloze were selected (Mauro & Bitar, 2017). The selected texts were identified in the Cloze Notebook - level II, indicated for the second level of the technique. The selection followed the criterion of searching for texts that resembled the didactic material used in the classroom, considering texts between 100 and 330 words, with simple syllabic structuring (CV) and complex syllabic structuring (CVC), with high frequency and regularity of words. For this analysis, a bank was set up composed of the words contained in each text of the Cloze Notebook - level II. Also criteria for the selection of texts belonging to the narrative genre were the presence of textual markers (period, comma, interrogation, exclamation and dash) and texts with the possibility of lexical erasure and figurative representativeness for nouns and adjectives.

Among the eight texts that make up the Cloze Notebook - level II, text 1 (T1) "My sister Zizi" and text 2 (T2) "The Legend of the Water Lily" were selected. Each text was adapted according to the proposal of use with gaps, one of them directed to the selection of pictures and the other to the selection of words.

Text 1 (T1), entitled "My sister Zizi" contains 121 words, from which seven words were removed, with figurative representation and that did not allow dubious interpretation. In the place of each word removed, two pictures were made available, in which only one should be selected to complement the sentence. The figures offered contrast of semantic representation, one of them being semantically correct to complete the sentence and the other semantically incorrect, in contrast to the correct answer.

All the figures used in T1 were taken from the Arasaac platform (Arasaac, 2023), as it is a free access platform, with standardized figures, easy identification of the sign represented. The figures are characterized by having a white background, in contrast to the color image and simple stroke. The search for the figures in the Arasaac image bank (2023) was carried out by exact representativeness of the words taken from the text. Thus, in the adaptation of T1, the gaps should be filled by selecting one of the two figures presented and, immediately after selecting the figure, the word should be written to complete the gaped text, replacing the figure.

The second text (T2) selected was "The Legend of the Vitória-Régia" composed of 176 words, of which nine were removed to form the gaps. In this text, the gaps should be filled by selecting one of two semantically different words, presented in written form below the gap. The adaptation of this text remained close to the original version of the Cloze level II Notebook, differing in the reduction of the gaps, from 18 in the original text to nine gaps in

the adapted text, for greater proximity to T1. Therefore, in the adaptation of T2, the gaps should be filled by selecting one of the two possibilities of words presented in written form and then filling the gap with the writing of the selected word.

Both texts kept the first and last paragraphs in full, that is, the initial and final paragraphs, preserved so that they allowed the contextualization and closure of the narratives by the reader. For application, T1 (with images) was initially used and later T2 (with words).

For the application, the texts were read orally in full by the applicator/researcher and then delivered to the student for oral reading. During the student's oral reading, the total time for the execution of the reading was recorded. After the oral reading, the text composed only of words was collected and the student was given the blank text, containing the images or words positioned below the gaps, to select and fill in the texts with the writing of the word. The mistakes and successes in filling in the gaps were accounted for in the two texts.

Thus, the analysis of the results was performed by the number of correct answers to fill in the gaps, in which the selection of the exact figure and/or word used in the full text was considered correct, and the synonyms or adaptations were incorrect. The total reading time was carried out with the recording of the time spent while reading the text by the child, the marking was carried out by a stopwatch, starting the record from the reading of the title of the text.

The results were also analyzed by classifying comprehension errors according to the Analysis of the Typology of Substitution Processes proposed in the ABFW Test (Andrade et al., 2002). In this study, the analysis of the answers was adapted to the use of exchanges of written words referring to the vocabulary belonging to the texts. The errors were subdivided into groups classified in exchanges by Near Cohyponym, Immediate Hypernym or Distant Cohyponym. Finally, for the classification of spelling errors, the classification of errors in writing was used, divided into accentuation errors, simple (contextual), grapheme/phoneme conversion and errors by omission or addition of letters (Moojen, 2014).

APPLICATION OF THE TEXTS

For the application of texts 1 and 2, a sample of 21 students of both genders (nine girls and 12 boys), belonging to the 2nd year of Elementary School, from a public school, aged between 8 years and 10 months to 9 years and 4 months, was composed. The sample was composed of convenience, all participants belonged to the same classroom and had no complaints of learning difficulties, as reported by the school.

The inclusion criteria for the sample were schoolchildren who developed reading skills; with visual and auditory acuity and cognitive performance within normal standards and who have never been submitted to neuropsychological, speech-language pathology and psychopedagogical follow-up. The exclusion criteria adopted were not reading at any level of decoding; presence of an interdisciplinary diagnosis of Specific Reading and Writing Disorders and other genetic or neurological syndromes. The information to compose the pre-established criteria was taken from the school records, analyzed by the researchers together with the school administration.

The two adapted texts were used with individual application, in a space provided by the school, outside the regular classroom (classroom), in a single session, with an average duration of 25 minutes for the reading of both texts. The application was carried out at the beginning of the 3rd school bimester, over the course of a month, at times and days authorized by the teacher, avoiding content losses to the students.

The texts were presented on laminated A4 sheets, with formatting in uppercase letters, Arial 12 font and double spacing between lines, seeking the best visibility for the identification of the words by readers (Beier & Oderkerk, 2022). The pictures and words were given to the students positioned below the gaps, so that the selection could be carried out during the reading. The words were written with a felt-tip pen, erased with 70 alcohol and paper towels for a new application.

The application was divided into three distinct moments, in which the applicator/researcher was first read aloud from the text. The previous reading occurred with the use of intonation, respect for pauses and adequate reading speed, that is, not slowing down or speeding up the reading. In a second moment, the oral reading of the text was carried out by the student to record the total reading time. Finally, the student received the blank text, containing the answers positioned below the gaps, in the form of images (T1) or words (T2), so that he could select the corresponding answer and fill in writing which one represented the text.

All participants in this study were submitted to the three stages, without changing the order of application of the texts, with the same instructions and application proposal. It is noteworthy that the students who were submitted to the research and presented performance below the expected were referred for follow-up at the School Clinic where the researcher responsible for the research works. As well as, guidelines were given to teachers to carry out the work in the classroom.

ANALYSIS OF THE RESULTS

At this stage of the study, statistical analysis of the results was performed to verify the sensitivity of the texts adapted in the proposed evaluation. The variables were described by mean, standard deviation, minimum and maximum values, median, and p-value. The distribution of performance by quartile was represented by the measure that corresponds to the first quartile (25th), median (50th) and third quartile (75th). The level of significance was set at 5% ($p \leq 0.05$) and the data were analyzed using the Minitab software (version 17.1).

RESULTS

The data obtained with the application of the adapted texts were compared to obtain the means, minimum and maximum value, standard deviation and p-value of the sample (Table 1). According to the distribution of the results for the reading time, the performance averages were lower for T1 and in filling in the gaps with correct answers, there were higher averages for T2.

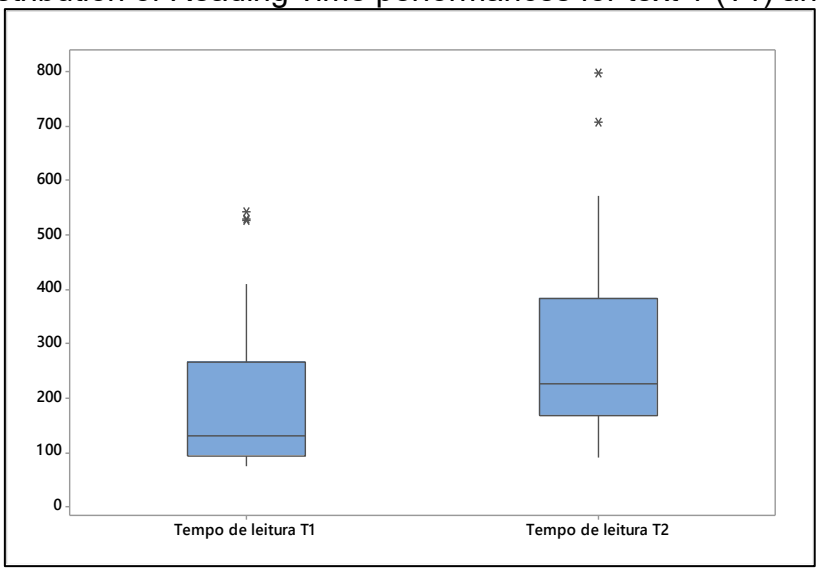
Table 1. Distribution of performances in Total reading time and Correct answers for the two texts used (T1 and T2)

Variables	Average	Standard deviation	Minimum	Median	Maximum
Reading time T1	206,6	159,3	76	132	542
Reading Time: T2	300,3	193,4	93	227	797
Correct Answers T1	6,95	0,21	6	7	7
Correct answers T2	8,28	1,23	5	9	9

* Testing Mann-Whitney

For complementary analysis of the group's performance, the results of the students were distributed by the median, first and third quartiles (Q1 and Q3). The results show a higher concentration of schoolchildren above the median for T1 when compared to T2, but both showed a lower distribution for the first quartile compared to the third. Both groups presented *outliers* with performances above the values stipulated by the sample mean (Figure 1).

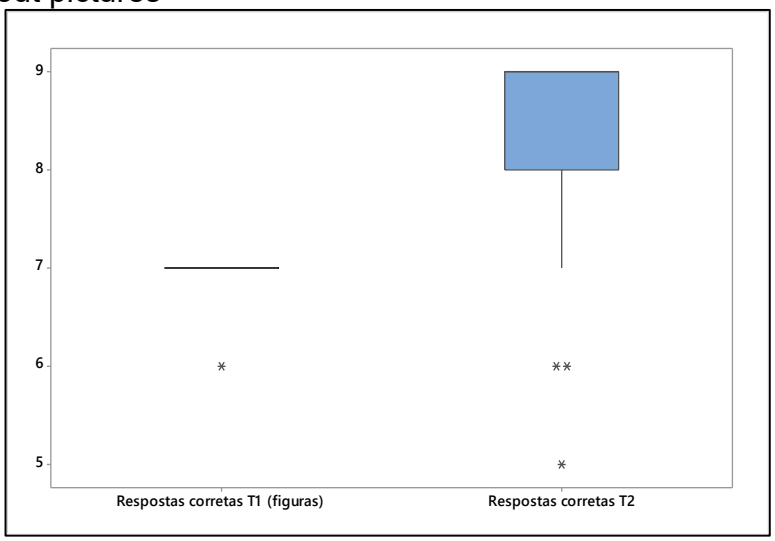
Figure 1. Distribution of Reading Time performances for text 1 (T1) and text 2 (T2)



Legend: T1 = text 1; T2 = text 2

There was a distribution of performance for correct answers in the gaps referring to T1 and T2 (Figure 2), in which the results indicate uniform performance for T1 and differences in T2 performance. In both texts, there were students who presented performances below the average values for the sample.

Figure 2. Distribution of the Correct Answers performances for text 1 (T1) with pictures and for text 2 (T2) without pictures



Legend: T1 = text 1; T2 = text 2

In T1, after selecting the picture, the students wrote in the gaping space of the word that represented it, being instructed to select the one corresponding to the text. Thus, for the analysis of the productions, the answers that presented the word of the original text were considered correct, and the answers with the use of synonyms, semantically similar words and words out of context were incorrect. Of the 21 students who participated in the

research, two (9%) filled in all the correct gaps, five students (23%) filled in six correct gaps, 12 students (57%) filled in five correct gaps, one student (5%) filled in four correct gaps and only one student (5%) filled in only three correct gaps.

The errors produced during the filling of the gaps classified in Co-hyponym Next were made with the word *little girl*, by 17 students (80%) who changed the word for *girl, little girl, daughter* or for the name of the character to which the word referred. And with the word *dog*, by 10 schoolchildren (47%) which was replaced by *dog* or *dog*. The errors in comprehension of Immediate Hypernym were made with the word *pudding*, when it was replaced by *sweet* by three students (14%). The errors of Distant Co-hyponym were made by four students (19%), three (14%) of whom replaced the word *little girl* with *mommy*, and one (5%) replaced the word *closet* with *table*.

Errors related to spelling production were identified in the use of accentuation by 16 students (76%) in the word *closet*. The simple (contextual) errors in the words *dog, table* and *pudding*, the most representative was in the exchange of [RR] for [R] committed by 12 schoolchildren (57%). The grapheme/phoneme conversion errors were performed in *teeth - dendes/dentis/deiti* and *pudding - podim*, with frequent vowel changes performed by 11 students (52%). And errors due to omission or addition of letters present in the words *dentes – dete/detis/dente, armário – armaro/amario,* and *cadeira – cadera*, the most common being the omission of vowels performed by 12 students (57%), (Table 2).

Table 2. Distribution of comprehension and spelling errors in T1 according to the proposed classification

Errors	Kind	Production
Comprehension	Co-hyponym Next	Little Girl - *Little Girl, Little Girl, Daughter* Puppy - *puppy and puppy*
	Immediate Hypernym	Pudim – *doce*
	Distant Cohyponym	Little Girl – *Mommy* Cabinet – *table*
Spelling	Accentuation	Closet – *closet*
	Simple (contextual) errors	Puppy – *puppy* Mesa – *meza* Pudding – *pudding*
	Grapheme/phoneme conversion	Dentes - *dendes/dentis/deiti* Pudim – *podim*
	Omission or addition of letters	Teeth – *de(n)te(s), de(n)tis and tooth(s)* Closet – *arm(i)o and a(r)mario* Chair – *chair*

Source: Prepared by the authors. Based on the analysis criteria proposed by Andrade, Béfi-Lopes, Fernandes and Wertzner (2002)

In relation to T2, the students read, selected the word and copied the selected option in the gap, thus, for this text only the orthographic production was analyzed, since the options of answers written in the gaps did not allow the use of synonyms or words out of

context. In this text, nine students (43%) had spelling errors in the word *Indian*, two students (9%) had errors in two words, *milk* and *girl*; one student (5%) had errors in three words, namely, *star*, *night* and *border*, and two students (9%) had errors in four words, *tribe*, *reflected*, *night* and *border* (Table 3).

Table 3. Distribution of spelling errors in T2 according to the proposed classification

Errors	Kind	Production
Spelling	Accentuation	India – *India*
	Simple (contextual) errors	Beira – *Berra* Reflected – *held back*
	Grapheme/phoneme conversion	Moça – *Mosa* Leite – *leiti* Trib – *Tribo*
	Omission or addition of letters	The (*i)* Beira – *Be(i)ra* March – *No.1* Star – *est(r)ela* Reflected – *reflected(s)*

Source: Prepared by the authors. Based on the analysis criteria proposed by Moojen (2014)

DISCUSSION

The analysis of the data allowed the identification of the reading time and the correct answers in filling in the gaps according to each text. Regarding reading time, the students obtained a lower average in text 1 (T1) compared to text 2 (T2), indicating less time spent decoding T1. This data tends to be justified by the fact that the number of words that make up T1 is smaller than in T2, even though texts were equivalent in degree of difficulty and complexity (Bettio & Bazon, 2019; Silva & Fonseca, 2021).

The data referring to the number of correct answers for the correct filling of the gaps show a higher average in T2 compared to the productions in T1, but with great proximity between the values. In this analysis, T1 presented an average of 6.95 correct answers in a total of seven gaps (99%) and T2 an average of 8.28 correct answers in a total of nine gaps (92%). However, the higher average of correct answers in T2 is justified by the fact that it is a text composed of a greater number of gaps, compared to T1, thus increasing the possibility of correct answer rates.

Texts composed of simpler linguistic structure require less reading time. They tend to present facilitating aspects for decoding, such as simple syllabic structure and high-frequency words, which help in decoding by the lexical route, due to the previously formed memory of the word. Another important point refers to the structure composed of dialogues, breaking the text into short sentences that help in the cadence of reading and extraction of meaning, in addition to the lower memory overload for the storage of information that is more diluted throughout the text (Colombo & Cárnio, 2018; Rebello et al., 2019).

Authors discuss (Cunha et al., 2018; Souza et al., 2019; Giazitzidou et al., 2023) that reading fluency and the facilitating aspects for reading performance, such as decoding and access to meaning, directly influence reading comprehension. Thus, the student who reads the text with appropriate speed, has a breadth of vocabulary, identifies and connects the relevant information of the text, will be classified as good comprehension. Therefore, reading time and access to the meaning of the word added to decoding become important initial markers of decoding ability to achieve skills that require greater cognitive demand, especially in more complex texts (Colombo & Cárnio, 2018).

According to the distribution of the performances obtained by the median, first and third quartiles, the reading time recorded in Graph 1 suggests that some students have presented difficulty in reading when compared to the sample group, since they obtained a discrepant performance in relation to the median obtained by the group. The high time for these students to complete the reading of T1 and T2 impairs textual comprehension, in the construction of the synthesis of the information in the text, as well as in the formation of working and long-term memory (Toffalini et al., 2019). The greater time exceeded in reading tends to lead to deviation or breaks in the reader's attention, in addition to being characterized by a more laborious reading, with reduced speed, syllabic, imprecise and with possible impairments in prosody (Peng et al., 2019; Silva & Fonseca, 2021).

The data of correct answers to fill in the gaps in the two texts reflect their complexity, which, despite having different degrees of difficulty for reading, have facilitating aspects for textual comprehension that leveled them at the time of selection. Thus, in T1, an average of 16 words was maintained for each of the seven words removed to form the gaps, and in T2, an average of 18 words was maintained for each of the nine words removed to be replaced by gaps (Santos & Monteiro, 2016).

The answers produced in written form at T2 favored lexical access because it is a more precise type of stimulus, allowing an explicit interpretation of its meaning, resulting in the equivalent average of correct answers at T1 and T2, even with higher levels of complexity of T2 compared to T1. From this perspective, the written word would be a facilitating aspect for understanding, due to the visual memory of the word and the direct access to the meaning, in relation to the image, which demands an autonomous search for the answer at the time of its selection and the subsequent writing of the word that represents it without a visual orthographic clue, composing a difficult aspect especially for students who have not yet systematized this skill (Dolean et al., 2021; Abas, 2023).

Cognitive flexibility is one of the skills that helps in reading, understanding what is read, searching for and accessing meaning, and changing or adapting the way in which the

word and its meaning are accessed, based on a certain stimulus (Bovo et al., 2016; Abreu et al., 2017; Colombo & Cárnio, 2018). The change from a visual stimulus in a figurative form to a written form indicates that one of the positive factors that reflected in the number of correct answers in T1 is similar to the correct answers performed in T2 (Dolean et al., 2021).

Another characteristic of the adapted texts is that T2 presented a more detailed writing about the story compared to T1, as the text "The Legend of the Royal Victory" narrates in greater depth, information about the characters, the environment and the motivation of the situation, while the text "My Sister Zizi" narrates, in large part, through dialogues, the occurrence of a situation in the family's daily life. Reading comprehension depends on skills related to executive function, such as working memory, planning, and organizing information, which are considered a high-level process for comprehension. Thus, the provision of information for the assembly of a more concise narrative directly influences the use and access of information in the text (Oakhill & Cain, 2011; Petscher et al., 2019; Toffalini et al., 2019).

According to Graph 2, based on the analysis of the median and quartiles, only one schoolchild had a performance below the median obtained by the group in T1, and three schoolchildren showed the same performance behavior in T2. However, when compared to the data on the comprehension of the correct answers of qualitative writing of T1, in which two students presented performance below the expected, the results are justified. Standard deviation data may represent an inability to read comprehension due to a previously unidentified deficit in this skill (Bovo et al., 2016).

The analysis of comprehension and writing errors allowed a more specific design of the productions, since it characterizes the composition of the sample. In this context, reading comprehension is identified as a process that is taught and learned throughout schooling, and not acquired as a consequence of the acquisition of reading (Varizo et al., 2022). Therefore, aspects identified in the types of classified errors should be better explored, monitored, and taught in the classroom, especially when it comes to a sample composed of students who are in the acquisition phase of low-level processes associated with comprehension (Dolean et al., 2021).

In the classification of comprehension errors, the students used words that are not the same as the text in full, which demonstrates that although the textual comprehension took place, by approximation of meanings or even by the type of mental representation of the child, the information was not literal, with breaks in the memory for storage (Kendeou et al., 2014). The errors made at the time of the representative writing of the images of the

text T1 show that most students had between five (12 students - 57% of the sample) and six correct answers (5 students - 23% of the sample) out of a total of seven words, and the errors made are concentrated in the classification of Close Cohyponyms, such as, in the words *little girl* and *dog*. It is noteworthy that the two students (9%) who had a total of seven correct answers, the highest possible result for this text, did not have spelling errors, which may represent a complete association between spelling, memory, and textual comprehension (Peng et al., 2019; Giazitzidou et al., 2023)element.

The substitutions for words Close Co-hyponym and Immediate Hypernym demonstrate an effective understanding of textual macrostructure, suggesting that the student can efficiently understand the main idea conveyed by the text, but does not retain specific information, but that does not directly interfere in the understanding of the sentence to complement the gap, since it does not maintain its meaning (Rebello et al., 2019). Thus, the process of substitution by synonyms or contextual words characterizes lexical access to the meaning of the removed word and the support of the image enables the rescue of the word, via *visual input* and access to lexical information, considered appropriate to the context of reading (Abreu et al., 2017; Abas, 2023).

In situations in which there were exchanges for Distant Co-hyponym words, it can be inferred that comprehension was not efficient or even achieved, because in the substitution of *little girl* for *mother,* it is perceived that the resolution of the text situation was altered, even though the representative image refers the student to this answer. As well as in the exchange of the word *closet* for *table*, in which one of the agents participating in the conflict of the text is changed.

The out-of-context productions carried out by the students refer to indications of the loss of information in specific passages of the text, making use of contextual cognitive resources, since words belonging to the same semantic class were accessed, but without reaching the required comprehension. Understanding also implies making connections between the ideas expressed in a text associated with previously acquired knowledge, which is expressed by the choice of words of the same class, that is, access to vocabulary according to the meaning to be used in the sentence, sometimes in a generalized way, especially for beginning readers (Oakhill & Cain, 2011; Bovo et al., 2016; Peng et al., 2019).

Regarding writing errors , incorrect productions were identified in all aspects analyzed, such as accentuation errors, simple (contextual) errors, grapheme/phoneme conversion errors and errors by omission or addition of letters. The analysis of errors had a greater focus on production related to natural orthography, as it is understood that the age group studied has not yet been exposed to all orthographic rules and/or to the learning of

arbitrary orthography for the written production of the language, with storage and direct access to the lexical representation of the word (Moojen, 2014; Dolean et al., 2021).

An important point to think about refers to T2. The purpose of applying this text was for the students to fill in the gaps using their previous grammatical knowledge, but many had the perception that it would be possible to copy the word. Copywriting limited the analysis of errors based on previously acquired concepts, on the other hand, incorrect copying was an aggravating factor for errors, as it is a reproduction of words without reflection on writing or even eye tracking of information (Petscher et al., 2019; Beier & Oderkerk, 2022).

According to authors (Moojen, 2014; Dolean et al., 2021; Varizo et al., 2022) spelling plays a decisive role in the automatic recognition of words, in terms of formation and access to the mental lexicon, supporting reading fluency and providing clues to other systems, such as phonology, morphology, syntax, and semantics. Such aspects directly influence reading comprehension. With regard to textual microstructure, there is the influence of vocabulary and lexical access (Colombo RC, Cárnio, 2018; Souza et al., 2019), while in the textual macrostructure there is the influence of aspects such as reading fluency, narrative structure and pre-established concepts interfering in the cadence of the text (Rasinski, 2017; Silva & Fonseca, 2021).

The findings obtained in this study refer to a limited group and reflect the results of a focal sample, obtained by convenience, in a public educational system. Thus, it is essential to expand the sample in different educational scenarios, identifying the performance of students in the initial stage of acquisition and making it possible to monitor performance. Another point to be structured in the future concerns the expansion of the text bank and its applicability in students with basic alterations in reading, comprehension and writing of words, in order to identify the sensitivity to the use of this tool and possible adaptations in the use of educational texts.

CONCLUSION

The results of this study allow us to conclude that it was possible to verify the performance of students in the 2nd year of Elementary School in the use of lacunated texts, both with images and words. The analysis of the answers by successes and errors helped in the reflection on the processes acquired in this educational phase and on measures that can help the learner, since the rate of correct answers was high.

The classification of comprehension errors and spelling errors provided complementary information on the impact of the texts on the learning of the students.

Comprehension errors in T1-weighted sequences, classified as close co-hyponym and immediate hypernym, reflect the approximation in access to the lexicon, with low distortion of meaning, but with difficulty in accessing the exact term for memory formation to fill in the gaps.

These results are effective in an educational context for the analysis of the performance of the acquisition of low-level processes associated with reading and comprehension, and are suggestive of use as a tool that can assist in the planning of stimulation strategies directed to this purpose. In addition to allowing the indication of this type of tool for monitoring school performance with the adaptation and adaptation of new texts.

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