



Analysis of written narratives produced by Elementary School students

Análise da produção de narrativa escrita de escolares do ensino fundamental

Evaluación de la producción de la narrativa escrita de alumnos de la primaria

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Abstract

Objective: To analyze and characterize the written narrative production of Elementary School students using a specific protocol developed for this study. **Methods:** Participants were 82 fourth grade-students with ages between 9.0 and 10.2 years, from public and private elementary schools (ES) in the western region of São Paulo, Brazil. The essay was written based on a visual stimulus and analyzed according to the Written Essay Analysis Protocol, which includes three categories of analysis: Contextual Conventions, Contextual Language, and Story Development. In all categories, the analyzed criteria received a score ranging from 0 to 3. A descriptive statistical analysis was performed, and the Cluster Analysis technique was used to form homogeneous groups of individuals. The significance level for all inferential analysis was set at $p=0.05$. **Results:** The mean score for Contextual Conventions was 5.0; for Contextual Language was 21.2, and for Story Development, 11.2. **Conclusion:** The results obtained in the three categories of analysis indicate that, even though these children have not completely mastered the narrative writing scheme, most 4th grade students presented linguistic knowledge that allowed them to communicate original ideas in the form of stories. The protocol proved to be a practical tool for thorough assessment of the aspects involved in the writing process. The analysis by groups has shown, quantitatively and qualitatively, the text generation capacity of 4th graders, supporting the understanding of individual variations in the development of written texts.

Keywords: Language Arts; Language Tests; Handwriting; Writing, Education and Learning.

Resumo

Objetivo: Analisar e caracterizar a narrativa escrita por meio de protocolo elaborado para este estudo. *Método:* Participaram 82 alunos de 4º ano do Ensino Fundamental (EF) de escolas públicas e privadas da região Oeste da Grande São Paulo, faixa etária de 9,0 a 10,2 anos de idade. A redação foi escrita a partir de estímulo visual e analisada pelo Protocolo de Análise de Redação, que consiste de três categorias de análise: Convenções Contextuais, Linguagem Contextual e Elaboração da História. Em todas as categorias, os critérios analisados recebiam uma pontuação que variou de 0 a 3. Foi

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Authors' contributions: MTMS responsible for data collection and tabulation, analysis of the results, discussion of the implications, and writing of the manuscript, based on her PhD dissertation. DMBL responsible for critical review and writing of the manuscript, as well as supervising the PhD dissertation that originated this study.

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Received: 15/02/2016 Accepted: 24/05/2016



realizada análise estatística descritiva da pontuação obtida nos critérios de análise. Para formar grupos homogêneos de indivíduos, utilizamos a técnica de Análise de Agrupamentos. O nível de significância para todas as análises inferenciais foi de $p=0,05$. Resultados: A pontuação média encontrada em Convenções Contextuais foi 5,0; em Linguagem Contextual foi 21,2 e em Elaboração da História foi 11,2. Conclusão: Os resultados obtidos nas três categorias de análise indicam que, apesar de não dominarem todo o esquema de narrativa escrita, a maioria dos alunos de 4º ano do EF apresentou um conhecimento linguístico que lhes permitiu transmitir ideias originais em forma de histórias. O protocolo se mostrou uma ferramenta prática para avaliação minuciosa dos aspectos envolvidos na elaboração da redação. A análise por agrupamentos permitiu verificar quantitativa e qualitativamente a capacidade de geração de texto de crianças de 4º ano do EF auxiliando a compreensão das variações individuais no desenvolvimento de escrita de textos.

Palavras-chave: Estudos de Linguagem; Testes de Linguagem; Escrita Manual; Redação; Educação e Aprendizagem.

Resumen

Objetivo: Analizar y caracterizar la narrativa escrita por un protocolo elaborado para esta investigación. *Métodos:* Los participantes fueron 82 estudiantes de 4º grado de la Primaria de las escuelas públicas y privadas de la región occidental de Sao Paulo, con edades entre 9,0 a 10,2 años. El texto fue escrito a partir de estímulo visual y analizado por el Protocolo de Análisis de Redacción, que consta de tres categorías de análisis: Convenciones Contextuales, Lenguaje Contextual y Elaboración de la Historia. En todas las categorías, los criterios analizados recibieron una puntuación que varió de 0 a 3. Se realizó un análisis estadístico descriptivo de las puntuaciones obtenidas en los criterios de análisis. Para formar grupos homogêneos de indivíduos, se utilizó la técnica de Análisis de Agrupamientos. El nivel de significancia para todos los análisis inferenciales se fijó en $p = 0,05$. Resultados: El promedio de puntuación que se encontró en Convención Contextuales fue de 5,0; en Lenguaje Contextual fue de 21,2 y en Elaboración de la Historia fue de 11,2. Conclusión: Los resultados obtenidos en las tres categorías de análisis indican que, aunque no dominan todo el esquema de la escritura narrativa, la mayoría de los estudiantes de cuarto año presento un conocimiento lingüístico que les permitía transmitir ideas originales en forma de historias. El protocolo ha demostrado ser una herramienta práctica para la evaluación minuciosa de los aspectos implicados en la elaboración de la historia. El análisis por agrupamiento ha demostrado cuantitativa y cualitativamente la capacidad de generar textos de los niños de cuarto año, ayudando a la comprensión de las variaciones individuales en el desarrollo de la narrativa escrita.

Palabras clave: Estudios del Lenguaje; Pruebas del Lenguaje; Escritura Manual; Escritura; Educación e Aprendizaje.

Introduction

Writing serves several cognitive and communicative purposes. Thus, it may occur in different linguistic forms according to these purposes, requiring from the writer the coordination of complex higher mental processes, such as high levels of abstraction, conscious elaboration and reflection, as well as self-regulation.

In order to represent and convey his thoughts and ideas through written language, four writing processes are used: planning, organization, generation, and review. These processes are guided by executive and self-regulating functions, and also sustained and delimited by the variables of writing foundations, which are, in turn, conceptualized

within four functional domains: cognitive-linguistic, socio-rhetorical, text production and beliefs and attitudes¹. Text generation may or may not be grammatically correct, well organized, coherent and cohesive, since it reflects the automatic formulation of the writer's ideas into written language. Starting in the 3rd year of Elementary School, when cursive writing is already automated for most children, the texts become longer. With age, the length and the quality of the texts become highly related²⁻⁴. There is evidence of inter and intra-individual variation in the capacity to produce texts, in normal children. A previous study has that children present different capacity levels in using written language through words, sentences or texts, hence, their performance

at the word level does not predict their performance at the sentence or paragraph levels, and also their performance at the sentence level does not predict their performance at the paragraph level⁵.

The deliberate and intentional behaviors must be planned, organized and monitored. For this purpose, the individual uses processes of attention, inhibition, maintenance of the cognitive apparatus, and working memory. Language has a central role in the direction of planning, organization and self-monitoring processes⁶. Thus, executive functions are closely intertwined with language processes. The written production is influenced by beliefs and attitudes that are related with self-efficacy, affective-emotional aspects, and the writer's objectives. Since writing is a communicative act, texts are written with one purpose: to cause an effect on the reader, to persuade, inform, explain, or even to write in a more literary manner, using interesting vocabulary and varying the structure of sentences. Less proficient writers do not establish general objectives for their texts, writing as information are retrieved from memory, almost without influence of metacognitive processes¹.

In writing, working memory is linked to the maintenance of information retrieved from long-term memory until they are transcribed to the paper, but it is also involved in all the writing processes, since it coordinates cursive writing, metalinguistic and metacognitive processes. Moreover, its capacity and time of storage are limited, and therefore all these processes simultaneously concur for its resources. Younger children are more affected by these working memory limitations, and therefore are more likely to lose cohesion in relation to the topic⁷.

In the earlier school grades, students' writing reflects their speech. Syntax is characterized by simple sentences, organized in a linear manner, and the vocabulary usually present in oral language is also used in written language. This is also reflected in punctuation, which is mastered later in the learning process of writing⁸. However, even while learning to use punctuation, when they still have not mastered all its rules, children use them with precise textual function⁹. Around 5th grade, when the syntax used in writing start to differentiate from the syntax used in speech and acquires a more formal or literary style, the use of sentences hierarchically organized may be observed^{1,4}.

In order to write with meaning, it is necessary to master the graphic code, which implies the acquisition and development of conventional, linguistic and cognitive components of written language¹⁰.

The conventional component corresponds to the capacity to write according to the established rules or acceptable idioms for punctuation, use of capital letters, and spelling. The linguistic component is related to the adequate use of morphosyntactic and semantic structures, as well as the correct selection of words and verb tenses, and the use of noun-verb agreement, gender and number, which are essential for a good writing. Vocabulary and grammatical forms may vary from person to person or according to social status, geographic region, or profession. However, if the writer has the intention to be accepted by most readers, he must follow some basic linguistic patterns¹⁰.

The cognitive component refers to the capacity to write any text with a logical sequence and coherence. Regardless of the content, the passage must be formulated so that the reader can easily understand. The maturity of a written production is evidenced as the writer employs well-defined introductions and conclusions, well-structured paragraphs, characters adequately defined, dialogues, humor and themes with philosophical and moral contents. An immature writing is usually sloppy in the presentation of ideas, the chain of thoughts is disconnected, without a specific theme or simply difficult to understand¹⁰.

Writing is a necessarily textual activity. It must have a sequence in which one may recognize any type of continuity, of articulation, giving the text a unity of meaning or thematic unity. Writing is thematically oriented, that is, the text has a central idea, a theme that must be developed, a point of arrival to which each segment must be oriented towards, and losing it means to break the thematic unity and hinder comprehension. This is the function of cohesion, i.e., that of creating, establishing, and signaling the bonds that link, articulate and string together the several segments of the text¹¹.

Some studies regarding the written production of Brazilian children have emphasized that the mastery of the narrative scheme increases with age and level of education, and depends on the contact children have with texts in their familiar environment¹²⁻¹⁵. These studies have reported that, in the earliest school grades, children tend to produce texts without the conventional characteristics of

stories, which changes after a few years of literacy and the explicit stimulation of the narrative scheme¹⁶.

A more recent study with students enrolled in the 3rd grade of Elementary School has shown simple productions, with predominant use of the narrative gender¹⁷. Investigating the effects of the conditions for production and the role performed by schooling after literacy on the writing of stories^{13,14}, authors have defined the criteria used in the analysis according to six categories. They concluded that the years of education contribute to the development of story writing, which seems to improve noticeably in the 4th and 5th grades of Elementary School. At this level, texts of all knowledge areas are more present in children's school life, possibly contributing to the development of narrative scheme. All 4th and 5th graders evaluated in the study produced stories classified in the categories V or VI in the condition elicited by a picture. In category V, there is an ending, but the solution to the problem situation is not explicit; in category VI, the stories are complete, with an elaborate narrative structure where the ending is explicit.

Narrative writing was also influenced by the situation of production, since the stories with more sophisticated structure and linguistic organization were elicited with visual or verbal prompts. The level of influence of the production situation on the quality of the story varies according to the mastery of the narrative scheme^{14,18}, which emerges from oral practices that are present in culture and in the child's experience. That happens every time she is asked to make up oral stories, rather than only by listening to or reading stories, or in pretend play¹⁹.

Based on the literature findings, the purpose of this study was to analyze and characterize the narrative writing of 4th grade Elementary School students from public and private schools, as well as to evaluate whether the criteria established in the Written Essay Analysis Protocol (elaborated for this study) would allow both quantitative and qualitative analyses of the essay to be used as an easy-to-apply instrument in clinical and educational settings.

Methods

Participants

This study was approved by the Research Ethics Committee of the original institution, under protocol number 410/04.

Participants were 82 children enrolled in the 4th grade of public (41) and private (41) Elementary Schools, with ages between 9 years and 10 years and 2 months. The following criteria were considered for selection of subjects: 1) absence of complaints regarding speech, language and learning, according to the teachers' indication; 2) no history of language or phonological disorders and/or previous speech-language rehabilitation, according to a questionnaire answered by parents or legal guardians; 3) normal performance in the Naming task of the Phonology Evaluation – ABFW test, standardized for Brazilian Portuguese²⁰. The legal guardians of all subjects signed the Free and Informed Consent, authorizing their participation in the study.

The 4th grade was chosen for this study based on the assumption that the students would have finished the literacy process, and would be struggling to grasp orthographic writing, but with more fluency in cursive writing, which might be a constrictor for written production^{1,2}.

Material

The essay was elicited by a visual stimulus of an only real colorful marine landscape, which included a problem situation, goals to be achieved, and obstacles to be overcome¹⁴.

The option for using only one picture as stimulus was because the use of a sequence of pictures could induce the elaboration of a story with a pre-established order, limiting the written expression of ideas²¹. The picture used in this study was the most voted by 16 judges – graduate speech-language pathologists with experience in evaluation, intervention, and prevention of communication disorders – among three pictures created by the researcher using the story-making software Imagination Express – Ocean, from Edmark®.



Figure 1. Picture used to elicit the essay

Procedures

The students wrote the essays in 20-minute group sessions, in their regular period at their own schools. Before the participants started writing their stories, there was a brief talk about the purpose of the research and the characteristics of a good story: organized paragraphs with beginning, development, and ending; use of punctuation and capital letters; and characters that participate in some actions. They were encouraged to write the best they could.

The essays were analyzed according to the translation of the Test of Written Language 3rd Edition (TOWL-3)¹⁰. The test has three categories of analysis: Contextual Conventions, Contextual Language, and Story Development. For this study, we changed the picture used to elicit the essays, as mentioned before. We also changed the analyses in the category Contextual Conventions, as it follows, and produced the protocol presented in this paper. In all categories, the analyzed criteria received a score that varied from 0 to 3. The number in parentheses by the abbreviation of each analysis criterion refers to the minimum and maximum reference scores for that specific criterion.

In the category Contextual Conventions, we analyzed the use of capital letters in the beginning of sentences (CL 0-1), the use of commas (Com 0-1), the use of periods (Prd 0-1), counted the number of paragraphs (Pgph 0-3), and the number of spelling errors (SE 0-2). Thus, the maximum score in this category was 8, and the minimum score was 0 points.

In the category Contextual Language, we analyzed the text according to the characteristics of the clauses used: incomplete sentences (IS 0-1), long sentences without punctuation (LS 0-1), sentences with coordinate clauses (Coo 0-2), sentences with subordinate clauses (Sub 0-3), number of introductory clauses (InC 0-3); use of connectors (Conn 0-2), subject-verb agreement (S/V 0-2), and gender and number (G/N 0-2); length, measured by the number of sentences in a paragraph (S/Pa 0-3); spelling, measured by the number of correct words with seven letters or more (W/7L 0-3) and three syllables or more (W/3S 0-2); cohesion, measured by the characteristics of the sentences used in the essay (CEs 0-2) and whether the sentences were well-related to each other (S/Es 0-1); vocabulary selection (Voc 0-2), and whether the names of the objects in the picture were used in the text

(NOP 0-2). The score in the category Contextual Language varied from 0 to 32 points.

The category Story Development analyzed how the student initiated the story (Beg 0-2) and if the plot developed the theme suggested in the picture (Plo 0-2); if the sequence of the story expressed the student's ideas in an organized and understandable manner (Seq 0-2); whether the story was related to the visual stimulus (PR 0-1), as well as if it went beyond the picture itself, mentioning events that may have occurred before or after what is represented (B/A 0-1). We also analyzed the level of action and energy in the essay (Act 0-3), if the prose was creative (Pro 0-2), if the characters expressed feelings or emotions (F/E 0-2), if there was an explicit moral (Mor 0-2), how was the ending of the story (End 0-2), and, finally, the story in general (Sto 0-2). Thus, the score in the category Story Development varied from 0 to 21 points. In all three categories, the higher the score obtained by the student, the better his performance.

Statistical Analyses

A descriptive statistical analysis was conducted with the aim to summarize what was observed in the sample. For this, the means, standard deviations, medians, and minimum and maximum values were placed in tables, arranged according to the variables considered in each test. In order to form homogeneous groups of individuals regarding the results obtained in the essay, we used the Cluster Analysis technique²². The average distance method was used, and the Euclidean distance was adopted as measure of dissimilarity between individuals. The significance level used for all inferential analyses was $p=0.05$.

Results

The essay task applied to 82 4th grade students of public and private Elementary Schools in the city of São Paulo, Brazil, with ages between nine years and ten years and two months was analyzed, and the results obtained are presented below.

The option to conduct a cluster analysis of the students from public and private schools was based on the observation that some students from the private schools presented essays as weak as those from public schools, and vice-versa, that is, some students from public schools wrote very good stories, just like private school children. Thus, the traditional analysis, based on the mean scores

obtained in each school group (private or public), would favor the private school students, hindering the public school students with good performance.

Table 1 presents the descriptive statistics for the scores obtained in each of the three categories of analysis: Contextual Conventions, Contextual Language, and Story Development.

Table 1. Descriptive statistics for the essay scores in the categories Contextual Conventions (ContConv), Contextual Language (ContLang) and Story Development (StoDev)

Category	N	Mean	Standard Deviation	Minimum	Median	Maximum
ContConv	82	5.0	1.8	1	5	8
ContLang	82	21.2	4.9	10	21	31
StoDev	82	11.2	5.1	1	11	21
Total	82	37.3	10.4	15	38	55

The descriptive statistics for the scores obtained in the essay according to the criteria of analysis in the category Contextual Conventions are presented in Table 2..

Table 2. Descriptive statistics for the essay scores according to the criteria of the category Contextual Convention

Criterion	N	Mean	Standard Deviation	Minimum	Median	Maximum
CL	82	0.8	0.4	0	1	1
Pgph	82	1.9	1.1	0	2	3
Com	82	0.7	0.5	0	1	1
Prd	82	0.9	0.2	0	1	1
SE	82	0.6	0.7	0	0	2
Total	82	5.0	1.8	1	5	8

Note: CL – Capital letter Pgph – Number of paragraphs Com – Comma
Prd – Stop SE - Spelling errors

The descriptive statistics for the scores obtained in the essay according to the criteria of analysis in the category Contextual Language are presented in Table 3.

Table 3. Descriptive statistics for the essay scores according to the criteria of the category Contextual Language

Criterion	N	Mean	Standard Deviation	Minimum	Median	Maximum
IS	82	0.55	0.50	0	1	1
LS	82	0.38	0.49	0	0	1
Coo	82	2.46	0.71	0	3	3
Sub	82	1.32	1.01	0	1	3
InC	82	1.32	0.56	0	1	3
Conn	82	1.26	0.60	0	1	2
S/V	82	1.34	0.82	0	2	2
S/Pa	82	2.28	0.79	0	2	3
CEs	82	1.32	0.65	0	1	2
S/Es	82	0.85	0.36	0	1	1
NOP	82	1.52	0.50	1	2	2
W/7L	82	1.76	0.79	0	2	3
W/3S	82	1.93	0.31	0	2	2
G/N	82	1.62	0.62	0	2	2
Voc	82	1.23	0.48	0	1	2
Total	82	21.13	4.89	10	21	31

Note: IS – Incomplete sentences LS – Long sentences without punctuation Coo – Sentences with coordinate clauses Sub - Sentences with subordinate clauses InC – Introductory clauses Conn – Use of connectives other than and S/V – Subject-verb agreement S/Pa – Sentences per paragraph CEs - Characteristics of the sentences in the essay S/Es – Sentences in the essay and development of the theme NOP - Objects in the picture named in the essay W/7L – Correctly spelled words with 7 letters or more W/3S – Correctly spelled words with 3 syllables or more G/N – Gender and number agreement Voc – Vocabulary

The descriptive statistics for the scores obtained in the essay according to the criteria of analysis in the category Story Development are presented in Table 4.

Table 4. Descriptive statistics for the essay scores according to the criteria of the category Story Development

Criterion	N	Mean	Standard Deviation	Minimum	Median	Maximum
Beg	82	1.32	0.66	0	1	2
PR	82	1.00	0.00	1	1	1
B/A	82	0.52	0.50	0	1	1
Seq	82	1.32	0.70	0	1	2
Plo	82	1.17	0.68	0	1	2
F/E	82	0.70	0.75	0	1	2
Mor	82	0.26	0.47	0	0	2
Act	82	1.56	1.23	0	2	3
End	82	1.30	0.78	0	1.5	2
Pro	82	1.15	0.67	0	1	2
Sto	82	0.88	0.64	0	1	2
Total	82	11.17	5.09	1	11	21

Note: Beg - Beginning PR - Relation with the picture
 B/A - Before and after Seq - Sequence Plo - Plot F/E - Feelings and emotions Mor - Moral Act - Action End - Ending Pro - Prose Sto - Story

In the Cluster Analysis, we gathered homogeneous groups of individuals according to the results obtained in the essay for each category: Contextual Conventions, Contextual Language, and Story Development (Cont Conv, Cont Lang, and Sto Dev). Table 5 presents the mean values of the variables considered in the clustering.

Table 5. Mean scores of the groups obtained in the Cluster Analysis for the categories Contextual Convention, Contextual Language, and Story Development

Variable	Group	N	Mean
ContConv	1	52	5.6
	2	22	4.1
	3	2	1.5
	4	6	4.2
ContLang	1	52	23.9
	2	22	17.9
	3	2	14.0
	4	6	12.2
StoDev	1	52	14.2
	2	22	6.7
	3	2	9.0
	4	6	2.3

The mean score obtained by the children in our study in the categories of essay analysis indicates that most of them presented enough linguistic knowledge to transmit original ideas in the form of narratives. Hence, the discussion is around the description and characterization of the expected parameters for the age group of the subjects in this study. Although the several criteria used to analyze the written production of our subjects are divided into the three categories pre-

viously described, many of them actually analyze the same aspects in different manners. For this reason, it was convenient to approach these aspects together in the discussion, regardless of the categories they were placed into, with the aim to make the argumentation more dynamic and less repetitive. Therefore, the analysis criteria are summarized in four groups for the discussion: length of the essays, spelling, syntactic and grammatical knowledge, and narrative elements.

Discussion

1. Length of the essays

The length of the essays was a positive surprise. In average, the subjects obtained a 1.9 score in the criterion number of paragraphs (Pgph – Table 2). Regarding the distribution of sentences in the paragraphs (S/Pa – Table 3), the students presented a mean score of 2.28, and, in the criterion that analyzed the characteristics of the sentences in the essays (CEs – Table 3), a mean score of 1.3. The initial talk with the students, when they were instructed on how to write the essay, might have influenced this result, since the conversation approached the characteristics of a well-written story and how their stories should be as long as possible. The students were informed of the objective of that essay – that it would be part of a research that had the aim to understand the writing process of normal children to be able to help children with difficulties to learn how to read and write. In short, the children were made aware of what was expected from them, and that they should give it their best efforts. Writing is a communicative act, and writers produce texts with a purpose in mind, establishing objectives for it. Among others, the purpose may be to cause an effect on the reader¹. Therefore, it may be that our subjects were striving because they understood the importance of their production for this study. The length of the essays agrees with authors who have emphasized that, when cursive writing is already automatic for most children in intermediate grades, their texts become longer, and that, with age, length and quality of the text become highly related²⁻⁴.

2. Spelling

The types of spelling errors were not analyzed; we considered only the number of errors, as well as the correctly spelled words with seven letters or more and with three syllables or more. It was found that, in average, the subjects scored 0.6 in spelling errors (SE – Table 1). This result may indicate that, as in previous studies^{23,24}, 4th graders still presented many spelling errors that, in most cases, seemed typical of the development of spelling abilities^{4,25}.

The mean score in the analysis of the correct writing of words with seven or more letters (W/7L – Table 3) was 1.76; and in the correct spelling of words with three syllables or more (W/3S – Table 3), 1.93. Initially, we thought that this type of analysis would not be relevant for Portuguese, as, unlike in English, there is a high frequency of words with seven letters or more and three syllables

or more in our usual vocabulary, such as: cabelo (hair), sapato (shoe), banheiro (bathroom), cozinha (kitchen), estavam (were), comida (food), among many others. However, this may be an additional way to analyze the spelling performance of students also in Portuguese, and even of individuals with learning difficulties in reading and writing.

These criteria might indicate possible difficulties in working memory, lexical retrieval, or even in graphomotor abilities²⁶, which are all important abilities to be investigated in the diagnostic process of reading and writing disabilities or learning disabilities in general. Since spelling errors are a natural part of the learning process, it is sometimes difficult to evaluate if the errors observed are normal and expected for the child's age range or if they already suggest reading and writing disabilities. Therefore, comparing the correct writing of longer words, as proposed in this protocol, may be an additional manner to evaluate the spelling processing, and possibly helping a differential diagnosis, since individuals with reading and writing disorders, due to the phonological processing deficits, would theoretically have difficulties to correctly spell longer words. Further research comparing individuals with and without writing complaints, however, must be conducted in order to verify the validity of this supposition.

3. Syntactic and grammatical knowledge

In this section, we discuss the results of the criteria that analyzed text construction regarding the characteristics of the sentences used, the use of punctuation, connectives, subject-verb agreement, gender and number agreement, and vocabulary selection.

It was found a mean score of 0.55 in the criterion that analyzed the presence of incomplete sentences (IS – Table 3) in the essays. This result might be explained by an overload of working memory, since children are more affected by its limitation and, therefore, are more likely to lose cohesion in writing^{1,7}.

The subjects in this study presented a mean score of 0.38 in the criterion that analyzed the use of long sentences without punctuation and with excessive use of the word “and” (LS – Table 3). When children are still unable to write an adequate and autonomous text according to the social conventions and that compensates the absence of the reader, they tend to write as they speak¹. The syntax is characterized by simple clauses that are

linearly organized, and the vocabulary used is also the commonly used in oral language. Although, in average, the subjects obtained a score of 0.7 in the use of commas (Com – Table 2) and 0.9 in the use of periods (Prd – Table 2) at least once in their essays, this does not mean they know how to use them in order to organize their texts, since punctuation is mastered later in the learning process of writing⁸. It is worth mentioning that we found in our study children that, at this age, used punctuation not only to separate or end sentences, but also to emphasize their stories with precise textual function⁹.

Regarding the sentences used, the 4th grade students presented a mean score of 2.46 in the use of sentences with coordinate clauses (Coo – Table 3) and 1.32 in the use of sentences with subordinate clauses (Sub – Table 3). With respect to the characteristics of the sentences used in the essays, subjects obtained a mean score of 2.28 in the criterion that analyzed the number of sentences per paragraph (S/Pa – Table 3). In the criterion correspondent to the use of connectives other than “and” (Conn – Table 3), the mean score was 1.26.

The results of these analysis criteria suggest that the syntactic characteristic more evidently used by children in the 4th grade of Elementary School was the linearity that sentences with coordinate clauses allow, which is commonly found among novice writers^{4,27}. These writers use a knowledge-telling model of text production, which elapses in a linear mode, usually merely associating juxtaposed ideas. However, as could be certified in this study, our subjects also already showed an initial ability to create a hierarchy between different sentences of the text, as observed in the use of connectives such as conjunctions, which are ultimately cohesive elements and allow several relations between the periods¹¹.

In average, the subjects obtained a 1.34 score in the subject-verb agreement (S/V – Table 3) and 1.62 in the gender and number agreement (G/N – Table 3). The generation of a text may or may not be grammatically correct, well organized, coherent or cohesive, since it reflects the automatic formulation of the writer’s ideas in written language¹. Many of the errors and cohesion problems in the text are adjusted in the reviewing process. Nevertheless, we observed that most of the children in our study did not review their essays at all. This corroborate other findings that show that students from 2nd to 4th grade demonstrate little metacognitive and

metalinguistic control over their writing, because they are still establishing the processes involved in text generation to then be able to go back to it and judge the integrity of its form and content¹.

The analysis of vocabulary selection (Voc – Table 3) showed that the mean score of the subjects was 1.23, which is adequate for the age range. However, it is worth emphasizing that, even at this age, some children use a rich and mature vocabulary, expressed in words and structures such as: biólogos marinhos (marine biologists), aventureiros (adventurers), navio elegante (elegant ship), entediados (bored), inesperados (unexpected), obviamente (obviously), solitário (solitary), vilão (villain), transatlântico (transatlantic), observação (observation), iceberg, dia perfeito para navegar (perfect day for sailing), profundezas (depths), finalmente (finally), terrível tubarão (terrible shark).

A previous study has found that the quality of vocabulary was directly correlated to all the analysis categories of essay²⁸.

4. Narrative elements

This section describes and analyzes how the subjects developed the theme suggested by the picture used as visual stimulus, how they initiated the essays and whether they expressed their ideas in an organized and understandable manner, if the stories were related to the stimulus and also if they went beyond the picture. We also analyzed the energy level of the essays, if the narratives were creative, if the characters expressed feelings or emotions, if the stories expressed any moral, and how they ended, according to the criteria described as it follows.

The mean scores regarding the number of introductory clauses (InC – Table 3) and the criteria that analyzed the quality of the introduction (Beg – Table 4) were both 1.32. According to these results, it was observed that, in general, children in this age range demonstrate the notion that, to write a story, it is necessary to describe the initial situation in which the characters and the space are presented, and that this characterizes the first part of a plot.

It was also observed that all children in the study wrote stories that were related to the marine theme suggested by the picture used as stimulus (PR – Table 4), since the mean score obtained was the maximum score for the criterion (1 point). Moreover, they obtained the mean score of 1.62 in the criterion that quantified the number of objects from the picture used in the essay (NOP – Table 3).

Still regarding the picture, the subjects obtained a mean score of 0.52 in the criterion that analyzed if they referred to an event that occurred previously or after the scene (B/A – Table 4). The support of a visual stimulus displaying a problem situation allows the children to write more elaborate stories¹⁴. It seems that the picture used in the study, which contained several elements and possible problem situations to be solved, was a good stimulus for the subjects to develop the theme, for the vocabulary selection, and for generating ideas that went beyond the scene presented.

In the criterion regarding the cohesion between the sentences and the development of the theme (S/Es – Table 3), the subjects presented a mean score of 0.85, showing that they wrote essays in which the sentences were well related and that contributed to the development of the theme. Regarding the sequence of the story (Seq – Table 4), the mean score was 1.32, evidencing that the characteristic stories from 4th grade students are gently conducted from beginning to end and have an explicit denouement of the plot¹⁴. Nevertheless, there were stories that followed a sequence, but with some digression, and others that contained the markers that initiate a story, suggesting the rough sketch of a problem situation, although without the other narrative elements, such as the climax and the ending, which is more characteristic of 2nd and 3rd grade Elementary School students¹⁴.

With regards to the analysis of the quality of the plot, the mean score was 1.17, which corresponded to a weak, scarce or sparse plot, initiating the story with a marker, but failing to explicit the problem situation. These productions quickly suggested, but did not develop the plot, and also presented an abrupt ending. However, it is worth emphasizing that we also observed students that wrote complete and logical plots.

In the criterion that analyzed the characters' emotions and feelings (F/E – Table 4), the students obtained a mean score of 0.70. This showed that, at this age range, many children are still unable to define feelings and emotions for their characters or, when the emotions are defined, they have little relevance to the development of the story.

According to the results of the criterion that analyzed the essays' moral (Mor – Table 4) – which had a mean score of 0.26 –, the subjects did not express any moral theme or the moral could only be inferred, as it was not clearly defined.

Regarding the stories' level of action (Act – Table 4), the mean score was 1.56. The qualitative analysis of this criterion showed a lot of variability, ranging from interesting and exciting stories to stories with no action at all; stories with a good level of energy, but very predictable, and repetitive or even tedious stories.

In the criterion that analyzed the ending of the stories (End – Table 4), the students obtained a mean score of 1.30, indicating that, at this age range, the endings vary from weak to logical and well-defined.

The mean score in the criteria that analyzed the quality of the prose in the essay (Pro – Table 4) was 1.15, which seems to indicate that most 4th graders have a weak, enjoyable or regular prose. However, some essays presented creative and stylish prose, or immature prose.

Regarding the quality of the story (Sto – Table 4), the subjects had a mean score of 0.88, which indicate a simple, direct or objective story production. Nevertheless, we also observed that some children produced insipid or tedious stories, or yet only described the picture. Other students, on the other hand, produced interesting and coherent stories.

The results suggest that most students in the 4th grade of Elementary School were able to elaborate a narrative. However, it is not possible to state that they have mastered the whole written narrative scheme, which agrees with studies on the written production of Brazilian children. These studies have emphasized that the knowledge of the narrative scheme increases with age and level of education, and that it depends on the contact the child has with different texts within the family environment¹²⁻¹⁶. In our study, many students were able to adequately introduce the narrative, as well as to present a problem situation, but the development of the plot was often absent, going straight to a quick solution and a stereotyped ending, such as “happily ever after”.

Writing is a social and communicative act, so it would be beneficial if, in the early grades, the writing process was shared with the colleagues: all would benefit from discussions regarding planning, organization, generation, and text review, gradually developing the ability to generate complete and autonomous texts. Hence, the students would also develop the self-regulating processes for writing, creating conditions to individually guide, monitor and direct their own performances of this task.

In this process, we must emphasize the role of language, not only as mediator of planning, organization, generation, and self-monitoring processes⁶, but also as an essential ability for the child to listen to and to tell stories, since the mastering of narrative schemes arise from oral practices that are present in the child's culture and experience. This occurs both when the child hears or reads a story or plays make-believe, and each time she is asked to elaborate oral stories. These abilities should be specifically stimulated at schools, since it is an important step in the direction of mastering written language¹⁹.

The results and analyses of the protocol proposed in this study, evidenced that it is a practical tool that allowed a detailed evaluation of the several aspects involved in a written narrative, and the characterization of our subjects in four groups, according to their performance on the writing production task (Table 5).

The 52 individuals categorized in Group 1, in average, had better results in all three analysis categories of the essays. The results seem to indicate that the most typical characteristic of students in the 4th grade of Elementary School is the presence of spelling errors in their spontaneous writing. Moreover, they showed mastering of the tested writing conventions and good text generation, but with transcription of some oral language characteristics, even though they used elements from the narrative writing scheme.

The 22 individuals in Group 2 had a high score in the category Contextual Language, and low scores in the other essay categories. This group seemed to have linguistic resources to write, but they did not use them, which may be due to lack of stimulation to write, unfamiliarity with the narrative scheme, or even to self-efficacy, as they did not recognize their capability to write a story¹. A way to stimulate these children would be to provide planning tools to improve text generation, such as proposing a scheme for the story based on self-questioning. This strategy also helps to improve the working memory limitations during the writing process.

On the other hand, the two individuals in Group 3 were the ones with lower scores on the criteria of the category Contextual Convention, mainly because of the number of spelling errors; however, they also had higher mean scores in Story Development and Contextual Language

than Groups 2 and 4. Thus, this group comprised individuals that, besides the facts that they had many spelling errors and did not use conventional patterns in their writings, seemed to be engaged in the story writing process and had a positive self-efficacy¹. Therefore, they would benefit from a stimulation focusing on lexical and intralexical analyses (in order to improve spelling) and on the process of essay review. A more specific instruction in spelling would further improve their fluency in text generation²⁹.

The six individuals in Group 4 stand out for presenting the lower mean score in the category Story Development. The results from this group suggest that these subjects had fewer linguistic resources for text generation, and would benefit from stimulation emphasizing spelling and graphic organizers or mental maps.

The results from the cluster analysis indicate that the children present different capacity levels to use written language through words, sentences, or texts. Hence, the performance at the word level does not predict the performance at the sentence and paragraph levels, and also that the performance at the sentence level does not predict the performance at the paragraph level¹⁵.

This type of analysis allowed us to verify, quantitatively and qualitatively, the ability of text generation of 4th grade Elementary School students. Moreover, it helped to further understand individual variations in the development of text writing abilities, allowing the implementation of pedagogical and rehabilitation practices that are more adequate to these individual needs.

Conclusion

The purpose of this study was to analyze and characterize the narrative writing of 4th grade Elementary School students by using the Written Essay Analysis Protocol.

The results obtained in the categories Contextual Conventions, Contextual Language, and Story Development indicate that most 4th grade students presented enough linguistic knowledge to allow them to convey original ideas in the form of stories. However, it cannot be stated that they have mastered the whole written narrative scheme.

The proposed protocol proved to be a practical instrument that allowed a thorough evaluation of the several aspects involved in essay writing. Moreover, the cluster analysis allowed us to verify,

quantitatively and qualitatively, the ability of text generation in 4th graders, and helped us to further understand individual variations in the development of text writing abilities, thus allowing the implementation of pedagogical and rehabilitation practices that are more adequate to individual needs.

Further studies using the protocol with other age ranges are needed in order to understand the learning process of written narrative production along the schooling process, and its possible applicability in language-based reading disabilities.

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