Visual associative relations in the creation of the title and characters of an invented story[1,2]

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Abstract

This study aims to discuss associative relations - phonological and visual - and their connection with working memory in creating the title and characters of a story invented by a dyad of newly literate students (6 years old). Using a linguistic-enunciative approach, the unit of analysis was the dialog established during a collaborative writing process. The methodological procedure used, capable of recording textual elaboration in real time and space - respecting the particularities of the classroom environment as much as possible - provided important data for understanding how various factors (cognitive, interactive, pragmatic) can cooperate in generating ideas from novice writers. The analysis shows that the dyad recovers mnemonic content, to be incorporated into the manuscrito escolar in the form of ideas, through different types of associative relations, including visual ones, going beyond the categories described in the linguistic contributions that are limited to the phonological aspects of the associations. The visual associative relations identified during the analysis indicate that, in addition to dialogue, objects from the school environment - posters, books, toys, and so on - can also influence the student's creative process, giving rise to ideas to be linearized in the text to be handed into the teacher.

Keywords

Memory – Creation – Collaborative writing – Textual production.

1 - **Data availability:** the transcribed data used in the analysis of this article is available at https://figshare.com/, under the title "transcription of the data analyzed in the article "Visual associative relations in the creation of the title and characters of an invented story". DOI: 10.6084/m9.figshare.26003752.

2 - This study was supported by the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) - process 304050/2015-6.

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https://doi.org/10.1590/S1678-4634202450264650en

Introduction

The first research aimed at understanding writing processes was stimulated by psychological research on problem-solving. This research provided a conceptual language for classifying the mental processes involved, as well as a set of methods - mainly *verbal protocol analysis*[4] - for analyzing these processes and a collection of empirical findings that could be easily applied to studying the complexity of writing. In this scenario of discoveries and in-depth studies of human cognitive processes, Hayes and Flower (1980) published *Identifying the Organization of Writing Processes*, whose main contribution was the presentation of a model of the writing process.

Even though it was a study carried out in the 1980s, Hayes and Flower's study has influenced current research to understand writing in its complexity (Harley, 2001) - beyond graphic and grammatical aspects - encompassing the cognitive processes that operate during textual composition. In addition to the basic processes, Hayes and Flower's (1980) model highlights long-term memory (LTM) as an essential component of writing.

Although researchers corroborated Hayes & Flower's (1980) idea about the importance of LTM in the writing process, the lack of reference to working memory (WM) generated some criticism (Berninger; Swanson, 1994), since the high mnemonic performance required during the activity of writing a text goes beyond the conceptual limits of long-term memory. This led Hayes (1996) to propose a change to the preambular model, emphasizing the importance of WM during writing - an issue that had already been confirmed and discussed by other researchers (Berninger; Swanson, 1994; Kellogg, 1987).

According to Olive (2012), working memory, defined by specialized literature as "a temporary storage system under attentional control that underpins our capacity for complex thought" (Baddeley, 2007, p. 19), has been fully inserted into studies on writing since the 1990s, being used to address issues related to acquisition (McCutchen, 1996), skill development (Kellogg, 2001) and idea generation (Van den Bergh; Rijlaarsdan, 2007).

In the present study, which aims to discuss associative relations (phonological and visual) and their connection with working memory in the process of creating the title and characters of a story invented by newly literate students, we used the Baddeley's (2000) *multicomponent model* as a basis for discussing the cognitive nature of associative relations, which made it possible to deal with visual associative relations, a concept that is not present in linguistic contributions.

To begin, there is a brief discussion of working memory in writing studies. We then present the interconnection between the *multicomponent model* (Baddeley, 2000) and the works of Saussure (2012), Suenaga (2005), and Thibault (2014), which, in dealing with associative relations from a linguistic point of view, provide important support for discussing, based on interrelation with WM, the visual associative relations revealed in the *corpus of* this study. We also sought support from the work carried out by Calil (2012a, 2012b, 2013, 2014, 2020), as they were the first to discuss associative relations and their

4 - The verbal protocol analysis technique elicits verbal descriptions from the subjects involved in a study. It is a procedure used in psychological, linguistic, and philosophical research etc., the aim is to get people to express their thoughts using strategies present in the elicitation technique (Cooke, 1994).

relationship with memory in the process of generating ideas in newly literate students. For the analysis, we identified and highlighted the episodes of dialogic texts (DT) related to the creation of the title and names of the characters in a story invented by two newly literate students.

Working memory in writing studies

Based on the importance of heuristic models of the writing process (Hayes; Flower, 1980; Bereiter; Scardamalia, 1987), research has begun to highlight long-term memory (LTM) in the process of textual production, especially when it comes to planning and generating ideas, in which the writer needs to recall information pertinent to carrying out the task (Beare; Bourdages, 2007; Van den Bergh; Rijlaarsdan, 2007; Grabowski, 2007; Hayes; Flower, 1980; Piolat, 2007). However, the role of memory in the writing process cannot be limited to retrieving information to be integrated into the text. As Alamargot, Chanquoy, and Lambert (2005) point out, the act of writing requires the mobilization of multiple and interrelated knowledge and processes.

The memory remains active throughout the composition process, from the retrieval of information - which gives body and meaning to the text - to the motor plan - which allows the materialization of what was planned, reflected on, and mentally articulated by the writer. In this sense, integrating only LTM into writing studies, as proposed in Hayes & Flower's (1980) model, does not seem to be enough to understand the writing process.

According to studies by Olive (2012) and McCutchen (1996), the WM is now considered an essential component for the functioning of the writing process. Olive (2012) points out that there are many reasons why working memory has been considered important for the act of writing. One of them is related to the fact that WM enables the temporary storage of transitory information that arises during textual composition, which allows the writer to carry out some simultaneous activities, such as writing a sentence and, at the same time, keeping an idea for the next paragraph, for example; since "semantic, syntactic, lexical, morphologic and orthographic information need to be temporarily stored at some moment during the composition process" (Olive, 2012, p. 125). In addition, another interesting reason is related to the involvement of WM in the construction of the writer's "multidimensional representation" (Olive, 2012), i.e. it enables the writer to compare their product, what has already been written, with the established mental representation of the ideal text, taking into account linguistic and semantic issues. Furthermore, many cognitive specialists consider WM to be the part responsible for activating the contents of long-term memory (Baddeley, 2007).

Different models of WM can be found in the specialized literature. For this reason, the choice of model to discuss writing is linked to the researcher's objectives. Thus, it can be observed that research dedicated to acquisition generally uses capacity models (McCutchen, 1996), while research aimed at understanding and developing skills, for example, usually uses componential models (Hayes, 1996; Kellogg, 1987).

For this work, Baddeley's *multicomponent model* (2000) – from the category of componentials - served as a basis for trying to understand the cognitive mechanisms of associative relations, initially discussed from a linguistic point of view by Saussure (2012).

Baddeley's model (2000, 2007) has three subsystems, namely the phonological loop, the visuospatial sketchpad, and the *episodic buffer* - the latter is responsible for retaining and interrelating the information from the first two. In addition, according to the model, the *buffer* is the component responsible for accessing information from long-term memory.

Through the contributions presented by Baddeley (2000, 2007), especially about the *buffer*, it is possible to undertake an interesting reflection on how associative relations are formed in a person's mind and, more importantly, how these associative relations can be triggered by diverse stimuli, such as visual stimuli, in addition to the phonological stimuli highlighted by linguistic scholars (Saussure, 2012; Thibault, 2014).

Associative relations and the *episodic buffer*

Saussure (2012, p. 172), when dealing with associative relations in the Course in General Linguistics (CGL), points out that "words that offer something in common are associated in the memory and thus groups are formed within which very different relations prevail". According to the author, associative relations "are not based on extension; its headquarters is in the brain; they are part of that inner treasure that constitutes the language of each individual" (2012, p. 172). It is known that at the time little was known about memory, but the conceptualization proposed by Saussure already indicated that there was a "mental component" responsible for organizing these words into certain groups. As Thibault (2014) states, Saussure didn't understand memory as a collection of ready-made syntagms, which is why he characterized associative relations as "virtual".

According to Thibault (2014, p. 233), the syntagm selected by a person is not necessarily represented in memory, it can arise as a consequence of the existing links between the terms of considerable associative relations, "the justification for a particular choice is not made based on plans or ready-made intentions that can be consciously retrieved, but based on operations carried out in conjunction with the system of 'latent' terms" (Thibault, 2014, p. 233). Thus, following the author's reflection, when a choice is established, it means that it has been chosen based on the interconnected models between the terms contained in the associative series and the syntagmatic types that have been consolidated based on the conditions brought about by the context. Thus, the principle of associative relations lies in their generation, which is based on the characteristics shared by the elements contained in the series itself.

> It is clear that the patterns of associations relate to the linguistic experience of the individual when they encounter language in diverse contexts, while many associative series will correspond to typical patterns of relations of meaning in culture (Thibault, 2014, p. 236-237).

About patterns of associations, it is known that they are not limited to approximation because they have elements in common. Saussure states that "the mind also grasps the nature of the relations that unite them in each case and thereby creates as many associative series as there are different ones" (2012, p. 174). Still in the author's words, "any word can always evoke everything susceptible of being associated with it in one way or another" (2012, p. 175). In this way, associative relations can be triggered in various ways, including through the connections that are established in the experience with the other, in the specific case of this work, with the partner in the task, with the teacher, among other possibilities within the classroom universe.

Turning to the idea that there are classes of associative groups, we can return to the multi-component model, especially the function of the *episodic buffer*. Baddeley (2007) states that the buffer's active interaction and link with long-term memory reveals a crucial aspect of the component, namely that it operates through conscious perception to link (or integrate) information from different sources into coherent chunks. In other words, the author assumes that the buffer consciously organizes and groups multi-dimensional information (visual, spatial, and phonological) into groups of units with familiar characteristics in common, similar to what happens with associative relations according to what was exposed in the *CGL*, except the fact that Saussure does not deal with visual associative relations. Another factor is that the organization of information into blocks takes into account the individual's semantic knowledge (coming especially from the culture in which they are inserted) since this knowledge is important for the buffer *to be* able to carry out its task.

The fact that the buffer can capture and relate phonological and visuospatial information contributes to understanding associative relations. The action of associating a visual stimulus with a phonic one, or vice versa, although not approached from a linguistic point of view, is not excluded either. Thibault (2014, p. 236) states that "associative relations are produced and elaborated by brain activity as part of a continuous process of adjusting to information coming from the external environment, including experiences had when interacting linguistically with other people". In this sense, when we consider that associative series are conceived through brain activity, based on stimuli coming from the outside world, it is possible that associations do not always have the word itself as their starting point. In other words, the center of the constellation, or triggering factor, can be a visual stimulus; even if it is the word (or any phonic stimulus), the coordinated terms can come from what the speaker sees. Thus, when it comes to the writing process in the classroom, especially in the early years of schooling, it would not be incorrect to admit that the environment in which the students find themselves, with its various visual stimuli - posters on the walls, letters of the alphabet, blackboards, books, etc. -can contribute to the emergence of diverse associative relations, which are not limited to phonic aspects and can contribute to the student's creative process.

Memory, associative relations, and writing in the classroom

The process of generating ideas has been of interest to researchers for a long time. Whether from a cognitive (Galbraith, 1996; Van den Bergh; Rijlaarsdan, 2007) or a linguistic-enunciative point of view (Calil, 2012a, 2012b, 2013, 2014; Calil, Myhill, 2020c; Calil; Pereira, 2018), investigations seek to understand, among other aspects, how writers obtain ideas for their texts, what devices they use to retrieve information from long-term memory (semantic memory) and transform it into ideas to be incorporated into their textual productions.

In their study, Van den Bergh & Rijlaarsdan (2007) present an interesting discussion on the process of generating ideas based on an experiment carried out with 36 9th graders using the *think-aloud* method. During the discussion, the authors state that although there are different ways of obtaining ideas, the mechanism can be considered the same, *spreading activation*[5]. From this perspective, they conceive of the existence of "cognitive nodes" which, when activated by the task, for example, can help ideas to emerge in the writer's mind. In addition, this mechanism allows for the establishment of associations between concepts, so that one concept can cooperate in the retrieval of another associated with it. A mechanism is similar to that which occurs with the associative relations described in the linguistic contributions.

The researchers present five cognitive activities that can activate a given knowledge structure, or cognitive node: *reading the task's consigna*; *re-reading the text produced so far*; *the translation process* (as the writer writes, new ideas can emerge); *ideas generated from other ideas* (associative effect); and *ideas generated from structuring the text*.

Van den Bergh & Rijlaarsdan (2007) consider actions related to reading - of the topic or what has already been written - and associations between ideas, but do not include factors external to the writing activity as potential generators of ideas, in other words, the stimuli present in the writers' environment, especially since the research was carried out with students. The failure to consider the characteristics of the environment as stimuli for the students' creative process may be related to the choice of method, *think-aloud,* which does not take into account the real aspects of textual production at school.

In this sense, Calil (2012a, 2012b, 2014, 2016, 2020b), starting from a linguistic-enunciative perspective on associative relations (Saussure, 2012; Suenaga, 2005), inaugurated studies dedicated to the generation of ideas by newly literate students writing a single text in collaboration, in a real production situation. Calil's work has provoked important reflections on how associative relations can retrieve semantic knowledge, capable of generating ideas to be incorporated into plots (Calil, 2012a, 2014; Calil; Amorim, 2017) and the creation of titles (Calil, 2013, 2020b; Calil *et al*., 2015).

In his work, Calil (2014, 2020b) uses the typification of associative relations proposed by Suenaga (2005). However, the researcher makes it clear that the associations found when analyzing the students' entire process up to composition and inscription in the school manuscript, indicate the existence of multiple aspects that can give rise to the

5- *Spreading activation* is one of the concepts derived from activation theory (Anderson, 1983).

most varied types of associations "depending on how different linguistic elements and ideas can be retrieved from the speakers' memory" (Calil, 2020b, p. 191), an issue that corroborates the problem proposed in this work.

About the multiplicity and unpredictability with which ideas can be generated during the writing process, Calil (2012b, 2013) maps out the entire writing process of a pair of newly literate students, demonstrating the effects caused by a Turma da Mônica comic book - handled even before the writing activity began - on the creation of the story's title. Through his analysis, the author argues that "the (individual) semantic memory allocated to the subject's cognitive system is marked by the intersubjective functioning of the (collective) memory of the object [...] and by the associative relations that this subject can unpredictably enunciate" (Calil, 2013, p. 42). In this sense, Calil reinforces the importance of ethnographic studies, especially those involving a "genetic and enunciative approach" (Calil, 2013, p. 41). Through these studies, as well as obtaining a greater amount of information, it is possible to preserve the characteristics of the school environment.

The dialogues established with fellow students, or with the teacher, objects belonging to the classroom, or brought in by the students themselves, can significantly contribute to understanding how the creative process of the writers is configured, aspects taken into account in this study.

Methodology

This study - which encompasses qualitative, multimodal, interactive, and enunciative aspects - is based on ethnography (Calil, 2013, 2020a), whose main characteristic is to consider interaction as a tool for grasping reality, moving away from traditional ways of dealing with issues on the social order (Dupas *et al.*, 1996). Cançado (2012), when dealing with ethnography in educational studies, points to the fact that within the classroom everything must be examined, "all aspects have relevance for the analysis of interaction, social aspects, personal aspects, physical aspects etc." (Cançado, 2012, p. 56).

Data collection

To collect the data, we used the Ramos System (Calil, 2020a), a method made up of three basic media: visual, audio, and written. Following the appropriate procedures, the *corpus* analyzed in this study is made up of the student's and teacher's audios - captured by microphones and recorders connected to the participants -, film recordings from cameras - positioned at strategic angles, which allow for the capture of the discussions and writing of the text to be delivered to the teacher and the written record captured through the *smartpen*, an instrument that has a micro camera attached recording all the traces, erasures, additions made by the students during the textual composition. At the end of the collection, the collected writing processes are transcribed.

Figure 1 - Media used by the Ramos System to capture data

Source: School Manuscript Laboratory.

An important aspect to mention is that the team leaves the environment after all the equipment has been installed. As Calil (2020a) points out, this is a simple procedure, but one that "prevents students from making eye contact with the researchers, but instead interacts with them, asking questions about what they are writing or asking for help to solve problems or doubts" (Calil, 2020a, p. 9). This procedure is carried out to preserve the ecological environment of the classroom as much as possible.

The entire data collection process follows these steps: moment 1, *organization of the classroom, the* student's desks are set up, and the equipment is installed; moment 2, *presentation of the proposal*, at this point only the teacher, who presents the task to be carried out, and the students remain in the classroom; moment 3, *combination*, after the educator's guidance on the activity, the pairs have time to discuss what they are going to write; moment 4, *linearization and inscription*, after agreeing, the students have access to the sheet of paper and the *smartpen* and start writing the text; moment 5, *reading and revision*, after composing, the students are instructed to read the text and make the necessary corrections, when they feel it is necessary; moment 6, *drawing*, after handing the manuscript to the teacher, the students can draw freely.

The pair A and L (6 years old), 1st-grade students at a private school in the city of Maceió, Alagoas, produced a total of 10 writing processes. The data was collected during the implementation of the didactic project "Histórias Encantadas" (Enchanted Stories), in 2013, with the authorization of the school and those responsible for the students involved. Throughout its development, the project presented proposals for reading, interpretation, and textual production, the first two of which were aimed at immersion in the proposed textual genre and creating interaction, and familiarization with the proposals, among

other important factors for the students' textual creation process. The teacher read many fairy tales.

For this study, we selected the students' 10th writing process - the product of which, the school manuscript, is the story *The Three Little Bunnies* (Os três coelhinhos) - collected on November 22, 2013, the end of the second semester of the school year[6]. The duration of the collection was 1:51:02. For analysis purposes, we considered the first few seconds, when the camera was turned on - in other words, before the activity even began - until the manuscript was finished, at the exact time of 1:16:25. This writing process was chosen because this textual production was written by the dyad, without the teacher's suggestion of a title, theme or character. In addition, the writing process is established with the support of important visual associative relations.

Concerning the analysis methodology, which aims to achieve the central objective of this study, all the associations responsible for recovering mnemonic content from the dyad and generating ideas for the titles and characters textualized in the current manuscript were identified, described, and coded. To do this, the following criteria were used: moments 1, 2, 3, 4, and 5 of the protocols followed during collection (their recordings and transcriptions) were considered. Moments 1 and 2 were included because, as Calil (2020b) points out, students can generate ideas even before the start of the activity presented by the teacher. By highlighting this aspect, the aim is to maintain the genetic nature of the textual creation process, i.e. to take into account everything that happened during the lesson, which may have interfered with the process of constructing the text. For this study, the textual elements considered are the generation of the title and the names of the characters, from the initial verbalizations of elements that may have interfered with their creation to the moment of their definitive inscription and linearization on the sheet of paper. The analysis will describe the statements that are directly or indirectly related to the development of the titles and names of the characters written by the students, emphasizing the cases in which it is possible to identify visual associative relations and how they connect with the semantic memory of the dyad.

In search of the genesis: what does the data indicate?

To understand how associative relations connect with semantic memory and generate ideas for the creation of titles and character names, there is a need to identify the enunciative structures in which this intertwining occurs - associative relations retrieving mnemonic content. Furthermore, taking into account the context in which the students find themselves, in the classroom, all the elements that contribute to the emergence of ideas will be identified and highlighted, which includes not only the utterances but also the visual stimuli, where appropriate.

In general, the narrative was written in a total of 162 words and has 1 title and 5 characters, **Enrique**, **tampinha**, **banguelo**, **mãe**, and **pai**. As far as the plot is concerned, it

6- Pessôa's work (2021) presents an analysis of associative relations during the textual genesis of other manuscripts by the same duo and manuscripts by Portuguese students of the same age group

can be said that it is relatively well constructed, there is a unity established between the title and the narrative content.

Figure 2 - Diplomatic transcription of the final manuscript

The Three Little Bunnies

1. Once upon a time, there were three little bunnies.
2. One was named Enrique,
3. another was named Tampinha,
4. and the other was named
5. Banguelo. One day, Enrique
6. went for a walk around the
7. buildings where he lived and he
8. met a little bunny
9. who lived next to him, his name
10. was Tampinha, and invited him to
11. walk around the building. They
12. found another little bunny
13. named Enrique,
14. and the two invited him
15. to walk together, but there was
16.. a thunderstorm coming, so they ran
17. to their burrow, but they didn't arrive
18. in time, and the thunder hit
19. the ground with a drop of rain.
20. The two arrived at the same
21. time as the drop hit the ground, and the bunnies
22. got to the burrow. The first burrow was
23. Tampinha's, so they entered.
24. They went into Tampinha's burrow, and Tampinha
25. said, "It's good that
26. we are safe here."
27. Then the mother and father arrived,
28. and they said, "It's good that the
29. thunder stopped." Then everyone lived
30. happily, ever after.

Source: School Manuscript Laboratory.

The creation of the title

Figure 3 - Story title

Source: School Manuscript Laboratory
Translator note: "The Three Little Bunnies"

From the outset, there is a strong similarity between the title created by the students - *The Three Little Bunnies* - and that of the children's story *The Three Little Pigs*, which can be justified by the fact that it is a narrative that is very accessible in the early years of schooling and, for this reason, the students end up updating it in their manuscript - reinforcing the fact that beginner writers tend to write about what is part of their socio-cultural universe (Calil, 2012b, 2013). However, the intertwining that took place during the captured process reveals much more than the simple act of remembering and transposing an already-known narrative, especially concerning the creation of the characters' names.

To understand how the title *The Three Little Bunnies* came about and why it is so close to the story *The Three Little Pigs*, it is important to go back to the beginning of the process. The title emerged during planning, based on visual information.

P010_TD1_00:13:44-00:14:09: During the time dedicated to planning the story, the girls are sitting in their seats and discussing the title. L stares at the poster with the titles of children's stories to her left.

197. L: So, go (looking in the direction of the poster with the titles of children's stories fixed to the wall, on her left side)
198. A: YES.
199. TEACHER: (Speaking to the class.) Right?
200. A: The title of the story.
201. L: Huh... "The three hungry bunnies."[7]
202. A: No.
203. L: (Smiling and thoughtful.) Huh? That's creativity.
204. : Let's go instead...
205. L: Meatball? Meatball story.
206. A: No, "Three little bunnies".
207. L: "Three little bunnies?" (L with a tone of disappointment.)
208. A: You'll choose...
209. L: Oh, how about that...
210. A: You said, "Three hungry bunnies."
211. L: Ah, how about "Three little bunnies who like broccoli"?
212. A: No. Just "Three little bunnies".
214. A: I thought so. "Three little bunnies."
215. L: With the cute little face.
216. A: No.
217. L: It's serious: OK, go on, think, think (L talking to the teacher) "The three little bunnies".

The dialogical text highlighted refers to the first few minutes of the time dedicated to the combination. The girls, sitting at their respective work tables, begin the discussion by thinking about the title of the story. After looking at the poster on the wall next to them, L suggests *The three hungry bunnies*, turn 201. The student's suggestion is linked to two aspects: reading the title *The Three Little Pigs*, written on a poster fixed to the classroom wall, and the subject of food, which she started even before the activity began, a fact that can be seen in turn 205, when L mentions the possibility of writing a story about meatballs - one of the foods she mentioned during the classroom organization.

The idea of the title *The Three Hungry Bunnies* don't please A completely, which makes her suggest that it should just be *The Three Bunnies*, in turn 206. At first, L doesn't agree and suggests other additions - *Three little bunnies who like broccoli*, turn 211, *With the cute little face*, turn 215 - which A doesn't agree with. So, after discussing it, the pair reached an agreement, still during the planning stage, and the title of the story became *The Three Little Bunnies*.

7 - The red font refers to L's statements about the title under discussion, while the blue font refers to A's statements with the same purpose.

Figure 4 - *L* looking at the poster fixed to the wall - moment 3 - planning the story *The Three Little Bunnies*

Source: School Manuscript Laboratory.

As well as L looking at the poster, at 00:13:52 there is also an image of the poster fixed to the wall to A's left, with the title *The Three Little Pigs* highlighted, as can be seen in Figure 5:

Figure 5 - Panel with the title "Stories told" Poster fixed to the wall - highlighting the title The Three Little Pigs

Source: School Manuscript Laboratory

The multimodal information obtained through the film recording of the process points to the fact that one of the associations responsible for generating the title *The Three*

Little Bunnies seems to have been triggered by visual information. The visualization - and reading - of the title displayed on the "Histórias Contadas" [Stories told] mural fixed to the wall with the list of fictional narratives read seems to have affected the emergence of the first suggestion for the title. Although L's suggestion is not completely accepted, part of it is preserved in the linearized title of the paper.

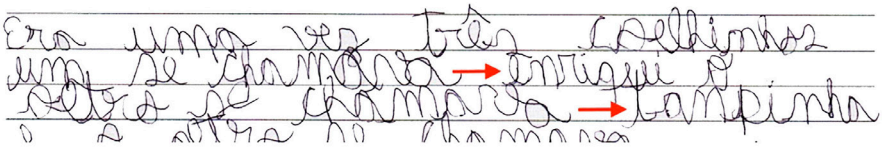
What was captured by the camcorder indicates that an associative relation was established based on the visual stimulus - the title of the story written on a poster fixed to the classroom wall. The information obtained by reading L, in turn, triggers other content associated with it. This is important because, within the space in which the students find themselves, it is inevitable that the generation of ideas for their texts will be triggered not only by the conversations that take place but also by the visual information to which they are subjected - posters, objects, toys, etc (Calil, 2013). It's worth remembering, for example, the emergence of the idea of a "regime with the letter A, B, C, D... in alphabetical order" and the alphabet fixed above the blackboard, as shown by Calil (2009). When it comes to textual production processes in the classroom, all aspects must be taken into account, as the most varied stimuli can retrieve important mnemonic knowledge during writing, thus resulting in the composition of the title, the characters, and even the plot.

The creation of the characters

The names of the characters appeared a few minutes later, when the girls already had a sheet of paper and a pen, during the linearization of the manuscript.

The students talk about the bunny characters until A names the first character, *Enrique*. Unlike *Tampinha* and *Banguelo*, the reason for *Enrique's* name cannot be identified during the recovery of the writing process.

Figure 6 - First linearized characters in the manuscript



Source: School Manuscript Laboratory.

Respecting the chronological order in which the characters were named, *Tampinha* was the second name to be verbalized and inscribed in the manuscript. To understand how it came about, it is necessary to return to moment 3, dedicated to combining the story. After the teacher presented the assignment, the girls began to think about the names of the characters, since the title had already been determined.

> P010_TD 2_00:21:29-00:22:08: The girls start thinking about the names of the characters, but interrupt the discussion.
> 197. L: Yes and then I thought about it, the three bunnies and the three bunnies... (thinking of ideas for the story).

198. A: But they still have to be named.
199. L: Or, but I thought of that story. And the three bunnies, the one you said.
200. A: But we didn't even find the third one (referring to the third bunny).
201. L: I'll wait (SI) ...I need to get my tissue from my bag.
202. A: And I want a drink of water. (L giggles.) I've got the flu.
203. L: Seriously, keep an eye out, please.
204. A: Can I have my bottle?
205. L: Huh?
206. A: Can I have my bottle?
207. L: I'll take it.
208. A: It's in my bag, see?
209. L: Yeah.

Just after mentioning that they need to think of names for the characters, the students interrupt the discussion. L appears to have a cold, so she mentions that she needs to get the tissue from her bag. Then A says she wants a drink of water, turns 202, and asks L to take the bottle in her backpack. Like the TD, the students' dialog changes topic, there is no longer any relation to the creation of the story. So why mention it? The key to understanding the emergence of the second character's name lies in the actions that follow.

At A's request, L gets up and fetches her colleague's bottle, then returns and hands it to her. When she picks it up, A shakes it and notices that it is empty, but she opens it and tries to drink some of the water that might still be at the bottom. There is a cap attached to the bottle by a string, A holds the bottle, looks at the string and then holds and looks at the cap. The student continues to hold the object and fiddle with the cap for a few minutes until she asks L to ask the teacher if she can fill it up, but the teacher doesn't allow it. She then hands over the sheet of paper and asks the pair to start writing.

Figure 7 - Drinking water, with the cap attached to the bottle

Source: School Manuscript Laboratory.

From that moment on, the linearization begins. L, who is responsible for the writing, sits down and starts filling in the sheet. Meanwhile, A places the bottle inside the desk so that it can't be seen. After L has written their names in the header and the title, A starts dictating the story.

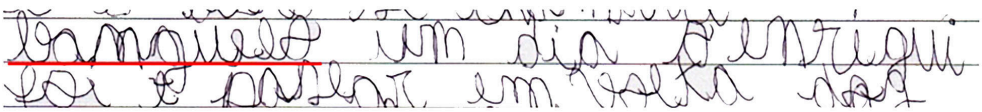
As already mentioned, A determines that the name of the first bunny will be *Enrique*. He continues to think of a name for the second character. The pair spends exactly 00:02:56 determining the name of the second bunny, the idea for which comes from A, proposing *tampinha*. As in the title, the word *tampinha* is not related to a phonological stimulus, but to a visual one. The name of the character *tampinha*, quite different from *Enrique's* name, seems to be associated with the fact that she is manipulating the little cap (tampinha, in Portuguese) of her water bottle.

> P010_TD_3_00:30:32-00:30:53: During the linearization of the story, the girls are still thinking about the names of the characters. A is responsible for dictating the story, while L writes.
>
> 220. A: His name was ::: (L coughs, yawns, and sings while A thinks.) Another one was called Tampinha (little cap).
> 221. L*: Huh?[8]
> 222. A: Tampinha.
> 223. L*: Tampinha. Really, Tampinha? Okay, Tampinha (writing [Tanpinha]) Tampinha. (Laughs.).

Throughout the process, and as can be seen in Figure 7, A not only holds the bottle but looks at it in different ways, with a special interest in the cap. It is interesting to note that the student does not comment on the characteristics of the bottle, even though she is handling it for a few minutes. The visual information obtained by handling the object is associated with A's mind and triggers the term *Tampinha*, associated with the bottle. In other words, the stimulus that triggers the associative relation responsible for retrieving the character's name is once again - as in the title - a visual stimulus.

To understand the appearance of the third bunny, we need to go back to the first few minutes of the recording, when the researchers were still organizing the classroom.

Figure 8 - linearization of the third bunny's name



Source: School Manuscript Laboratory.

The recorders and camera are already in operation, the students are sitting at their respective desks and talking about various subjects. A classmate approaches the pair and

8- The symbol (*) indicates the student responsible for the writing on the day.

asks if L has pulled out a tooth, L replies that she hasn't, which starts a conversation, as can be seen in the TD below:

> P010_TD 4_00:07:57-00:08:32: The researchers are inside the classroom organizing the tables, and positioning and connecting the equipment. A classmate approaches the pair and starts a conversation.
>
> 218. CLASSROOMMATE: She pulled her tooth out?[9]
> 219. TEACHER: David and Joseph are missing.
> 220. L: No, I didn't.
> 221. A: No, it didn't.
> 222. CLASSROOMMATE: What's that? (moving closer to L to see the space between his teeth).
> 223. A: No.
> 224. L: (L stutters.) It's... it's where, it's where. Here...
> 225. A: It's a hole.
> 226. L: ...it's where the other tooth is, that I'm going to pull out, right, A.?
> 227. A: YES.
> 228. CLASSROOMMATE: Oh, right.
> 229. L: And then when I rip that one out.
> 230. A: That you're going to tear off today.
> 231. L: No, I won't.
> 232. A: L, your tooth, your tooth is going to grow, see? (A. stutters.)
> 233. L: When I pull out.
> 234. A: Remember the story, the tooth fairy makes us grow up. You won't grow up like this. You'd better pull the tooth out. (L slams the case on the table.) Do like this.

After the dialog highlighted in TD4, the girls change the subject. The subject of L's tooth is not mentioned again until the moment of linearization when A is thinking about the name of the third character.

> P010_TD_5_00:33:20-00:34:02: The girls are matching the name of the third bunny.
>
> 235. L*: It's a crazy house, I heard. ::: Just ask them... hey, believe me, it is. Did your aunt leave you (SI)?
> 236. A: (Saying the Bunny's other name.) Banguelo (toothless).
> 237. L*: Banguelo? Oh no, don't even mention my tooth.
> 238. A: Banguela. Banguelo. Here, you'll have... put it here.
> 239. L*: Banguelo. [ban] (writing the name "banguelo" on the paper) gue... gue... gue what's gue? (Syllabicating.) Gue... gue... Bangue... gue.
> 240. A: Huh? (Spelling to L) G-U- L E. (L speaks along with A.)
> 241. L*: Cal... G-U-E? [gue]
> 242 A: Banguelo. (L writing [lo].)
> 243. L*: Banguelo.

9- The green color indicates the statements highlighted in the student's colleague's speech.

As can be seen from TD4 and TD5, the name of the third bunny emerges from the dialogue between the pair and their colleague about L's tooth. Although the topic was not taken up again after the moment of organizing the room, it is from this that A recovers the information that will result in the idea for the character's name. Note that in the first dialog, the girls don't mention the word "*banguelo*"; the discussion revolves around L getting her baby tooth out. The term "Banguelo" (*toothless*) is triggered by A's association, *pulling out the tooth → to become toothless (Banguelo)*. In this way, there is an associative relation by semantic conformity (Suenaga, 2005), since the recovered term belongs to the same universe as the topic discussed previously, and was triggered by a verbal association - the result of the dialog established between the students before the writing activity began.

One interesting point concerns time. The conversation about L's tooth lasts exactly 50 seconds. After the girls change the subject and the activities begin, the topic only returns at the moment of linearization, exactly 25 minutes and 13 seconds later, in the form of the word "*banguelo*" which, when uttered, reminds L of the previous dialogue - "*Banguelo"? Oh no, don't even mention my tooth*, turn 237. It could be argued that the visual factor may have been a determining factor, but the process shows that while A thinks of the name for the character, she doesn't make eye contact with L, only when she says *banguelo*, turn 236. This fact highlights the work of working memory, which retains the phonological information, captured through the dialogue established during the organization of the room, and returns it in the form of an idea for the name of the character, *banguelo*, semantically associated with the topic of the conversation, even though more than 25 minutes have passed.

The *mother* and *father* characters, whose only action in the story is to get home as soon as the thunder stops, as can be seen in the diplomatic transcription of the final manuscript (figure 2), were inserted into the narrative without discussion, as an ending - showing that in the end everything was fine and everyone lived happily ever after.

Considerations

Initially, it should be noted that the students update elements, characteristics, and knowledge from their practices (Calil, 2010, 2014, 2020) in their texts, whether acquired at school or outside of school. This can be seen in the elaboration of the title and the elements present in the story's plot - three bunnies, each with a name, living in their respective burrows and, to protect themselves from the imminent danger of a thunderstorm, they seek shelter in the first burrow, belonging to the character *Tampinha* -, which are similar to the children's narrative *The Three Little Pigs*, even though the students left marks of authorship and creativity, by replacing the *wolf* (from the original story) with *thunder*, for example.

In addition, the student's writing process provides relevant elements for understanding how ideas are generated for creating titles and character names. It can be seen that the dyad recovers semantic memory content through more than one form of association, showing that the associative relations that contribute to triggering these mnemonic contents are not only established by linguistic information but also by the visual information to which the students are exposed.

Linguistic contributions do not find associative series based on visual information, for example. However, when studying them, it is understood that associative series are produced and established through brain mechanisms that regulate, at all times, information from the environment (Thibault, 2014), which can include linguistic interactions between speakers and also interactions with the space in which they find themselves.

Considering that the human brain is capable of capturing phonological and visuospatial information (Baddeley, 2000), as well as many others, what prevents associations from being generated from images and handling objects? This happens with L who, when reading the poster nailed to the wall, suggests writing a narrative about *three bunnies*; and with A during the creation of the names of the characters in the story. The students use the information captured from the interaction - through the poster, the handling of a water bottle, and the dialog established with their classmates - to generate ideas, which are incorporated into their final manuscript.

In this sense, the path taken by the A and L dyad during the writing process reveals that the elements present in the classroom can contribute to the student's creative process. Through the composition of the story *The Three Little Bunnies*, it is possible to learn that objects - posters, drawings, books, toys, etc. - as well as the dialog itself, are also likely to trigger associative relations that recover mnemonic content capable of generating new ideas to be incorporated into the text. Thus, reflecting on how the composition of the environment influences students' creativity during writing could be an interesting point to explore in future research.

Finally, it is hoped that this study will contribute to work on the writing process of newly literate students, especially those focused on the creative process of young writers. It also aims to reinforce the importance of qualitative studies as important drivers of discussions about writing and the processes that encompass it.

References

ALAMARGOT, Denis; CHANQUOY, Lucile. **Through the models of writing**. Dordrecht; Boston; London: Kluwer, 2001.

ALAMARGOT, Denis; CHANQUOY, Lucile; LAMBERT, Eric. La production écrite el ses relations avec la mémoire. **Approche Neuropsychologique des Apprentissages chez l'Enfant**, Paris, n. 17, p. 41-46, 2005.

ANDERSON, John. A spreading activation theory of memory. **Journal of Verbal Learning and Verbal Behavior**, Netherlands, p. 261-295, 1983.

BADDELEY, Alan. The episodic buffer: a new component of working memory? **Trends in Cognitive Sciences**, Cambridge, v. 4, n. 11, p. 417-23, 2000. Disponível em: https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613(00)01538-2. Acesso em: 12 abr. 2024.

BADDELEY, Alan. **Working memory, thought, and action**. Oxford: Oxford University Press, 2007.

BERNINGER, Virginia; SWANSON, Harris Lee. Modifying Hayes and Flower's model of skilled writing to explain beginning and developing writing. *In*: BUTTERFIELD, Earl; CARLSON, Jean (ed.). **Children's writing**: Toward a process theory of the development of skilled writing. London: JAI, 1994. p. 57-81.

CALIL, Eduardo. A rainha comilona: dialogismo e memória na escritura escolar. **Bakhitiniana**, São Paulo, p. 24-45, 2013. Disponível em: https://revistas.pucsp.br/index.php/bakhtiniana/article/view/8749/7543. Acesso em: 5 abr. 2024.

CALIL, Eduardo. **Autoria**: a criança e a escrita de histórias inventadas. Londrina: UEL, 2009.

CALIL, Eduardo. Do amarelo ao quem tem fé: séries associativas na escritura de um poema em sala de aula. *In*: DEL RÉ, Alessandra; ROMERO, Márcia (org.). **Na língua do outro**: estudos interdisciplinares em aquisição de linguagens. 1. ed. São Paulo: Cultura Acadêmica, 2012a. p. 257-276.

CALIL, Eduardo. Escritura, memória e associação: processos de criação de poemas por alunos recém alfabetizados. **Revista da Anpoll**, p. 371-402, 2014. Disponível em: https://revistadaanpoll.emnuvens.com.br/revista/article/view/681/747. Acesso em: 5 abr. 2024.

CALIL, Eduardo. Gênese textual de um título: estudo sobre redes associativas e ativação de memórias em alunos recém alfabetizados. **Bakhitiniana**, São Paulo, v. 16, n. 1, p. 184-210, 2020b. Disponível em: https://revistas.pucsp.br/index.php/bakhtiniana/article/view/46306/33531. Acesso em: 5 abr. 2024.

CALIL, Eduardo. Os sentidos das palavras e como eles se relacionam com o texto em curso: estudo sobre comentários semânticos feitos por uma díade de alunas de 7 anos de idade. **Alfa**, São Paulo, v. 60, n. 3, p. 531-555, 2016. http://dx.doi.org/10.1590/1981-5794-1612-4

CALIL, Eduardo. Rasuras orais em madrasta e as duas irmãs: processo de escritura de uma díade recém-alfabetizada. **Educação e Pesquisa**, v. 38, n. 3 p. 589-602, 2012b. http://dx.doi.org/10.1590/S1517-97022012005000010

CALIL, Eduardo. Sistema Ramos: método para a captura multimodal de processos de escritura a dois no tempo e espaço real da sala de aula. **Alfa**, São Paulo, v. 64, 2020a. Disponível em: https://periodicos.fclar.unesp.br/alfa/article/view/11705/9866. Acesso em: 5 abr. 2024.

CALIL, Eduardo; AMORIM, Kall Anne. 'Nós vamos ter que dar dez beijos em cada um': a gênese de discurso direto em um processo de escritura a dois. **Revista Domínios da Linguagem**, Cidade, v. 11, n. 4, p. 1175-1193, 2017. Disponível em: https://seer.ufu.br/index.php/dominiosdelinguagem/article/view/38209. Acesso em: 5 abr. 2024.

CALIL, Eduardo; AMORIM, Kall Anne; LIRA, Lidiane. A criação de títulos para contos de origem inventados por escreventes novatos. *In*: CALIL, Eduardo; BORÉ, Catherine (org.). **Criação textual na sala de aula.** Maceió: UFAL, 2015. p. 15-42.

CALIL, Eduardo; MYHILL, Debra. Dialogue, erasure and spontaneous comments during textual composition: what students' metalinguistic talk reveals about newly-literate writers' understanding of revision. **Linguistics and Education**, London, v. 60, p. 1-15. 2020c. https://doi.org/10.1016/j.linged.2020.100875

CALIL, Eduardo; PEREIRA, Luísa Álvares. Reconhecimento antecipado de problemas ortográficos em escreventes novatos: quando e como acontecem. **Alfa**, São Paulo, v. 62, n. 1, p. 91-123. 2018 https://dx.doi.org/10.1590/1981-5794-1804-5

FLYNN, Naomi; STAINTHORP, Rhona. **The learning and teaching of reading and writing**. West Sussex: Whurr Publishers, 2006.

HARLEY, Trevor. **The psychology of language**. East Sussex: Psychology Press, 2001.

HAYES, John. A new framerwork for understanding cognition and effect in writing. *In*: LEVY, Michael; RANSDELI, Sarah. **The science of writing**: theories, methods, individual differences, and applications. Mahwah: Lawrence Erlbaum, 1996. p. 1-27.

HAYES, John; FLOWER, Linda. Identifying the organization of the writing processes. *In*: GREGG, Lee W.; STEINBERG, Erwin R. (org.). **Cognitive processes in writing**. Hillsdale: Lawrence Erlbaum, 1980. p. 3-30.

KELLOGG, Ronald. Effects of topic knowledge on the allocation of processing time and cognitive effort to writing processes. **Memory & Cognition**, New York, n. 15, p. 256-266, 1987. Disponível em: https://link.springer.com/article/10.3758/BF03197724. Acesso em: 12 abr. 2024.

KELLOGG, Ronald. Long-term working memory in text production. **Memory & Cognition**, New York, n. 29, 2001. Disponível em: https://link.springer.com/article/10.3758/bf03195739. Acesso em: 12 abr. 2024.

McCUTCHEN, Deborah. A capacity theory of writing: working memory in composition. **Educational Psychology Review**, New York, v. 8, n. 3, p. 299-325, 1996.

OLIVE, Tierry. Writing and working memory: a summary of theories and of findings. *In*: GRIGORENKO, Elena; MAMBRINO, Elisa; PREISS, David. **Writing**: a mosaic of new perspectives. London: Psychology Press, 2012. p. 125-140.

PESSÔA, Míriam. **Criação de títulos e personagens em histórias inventadas**: estudo sobre as relações associativas e suas conexões com a memória semântica e a geração de ideias. 2021. 166 f. Tese (Doutorado em Linguística e Literatura) – Universidade Federal de Alagoas, Faculdade de Letras, Maceió, 2021. Disponível em: http://www.repositorio.ufal.br/jspui/handle/123456789/8426. Acesso em: 12 abr. 2024.

SAUSSURE, Ferdinand. **Curso de linguística geral**. São Paulo: Cultrix, 2012.

SUENAGA, Akatane. **Saussure, un système de paradoxes**: langue, parole, arbitraire et inconscient. Limoges: Lambert-Lucas, 2005.

THIBAULT, Paul J. Memória, coordenações associativas e sintagmas e microgênese linguística: implicações e prospectos para a teoria da linguagem de Saussure. **Matraga**, Rio de Janeiro, v. 21. n. 34, p. 228-279, 2013. Tradução de Tania M G Shepherd. Disponível em: https://www.e-publicacoes.uerj.br/matraga/article/view/17516. Acesso em: 12 abr. 2024

VAN DEN BERGH, Huub; RIJLAARSDAN, Gert. The dynamics of idea generation during writing: an online study. *In*: TORRANCE, Mark; VAN WOES, Luuk; GALBRAITH, David. **Writing and cognition**: research and applications. Netherlands: Elsevier, 2007. p. 125-150.

Received on June 03, 2022
Approved on September 12, 2023

Responsible editor: Prof. Dr. Mônica Caldas Ehrenberg

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