

**DIALOGUE, ERASURE AND SPONTANEOUS COMMENTS DURING TEXTUAL COMPOSITION:  
WHAT STUDENTS METALINGUISTIC TALK REVEALS ABOUT NEWLY-LITERATE WRITERS' UNDERSTANDING  
OF REVISION**

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Accepted preprint of article published in Linguistics and Education 2020. Vol 60

<https://doi.org/10.1016/j.linged.2020.100875>

**ABSTRACT**

Many young writers find revision a challenging process. The study reported here uses a multimodal system (the Ramos System) for data capture, in contrast to the more typical use of think-aloud or post-hoc recall, and sought to understand what newly-literate writers' textual modifications (erasures) and oral comments reveal about their metalinguistic understanding of writing. Six classroom sequences of narrative writing composition were recorded, using both video and audio, capturing both the unfolding texts and the dyadic dialogue about these texts in this collaborative writing context. The analysis shows that, although these young writers' metalinguistic thinking is dominated by graphic-spatial concerns, there is also evidence of emerging broader metalinguistic thinking across a range of categories. Nonetheless, comments related to composition or narrative meaning were rare. The paper argues for more pedagogic interventions which foreground the compositional aspect of writing narratives, alongside transcriptional fluency, and identifies lines for future research.

**Keywords:** writing; dyadic dialogue; revision; textual genetics; metalinguistic thinking

**Funding:**

This work was supported by a British Academy Newton Mobility Grant [grant number: NMG2R2\100098] and by National Council for Scientific and Technological Development (CNPq) [grant number: 305312/2011-1]

## 1.0 INTRODUCTION

Studies on textual review have been the subject of research within cognitive psychology since the early works of Hayes and Flower (1980), Flower and Hayes (1981) and Flower, Hayes, Carey, Shriver and Stratman (1986) on the first cognitive model of the writing process. Textual composition is considered a complex cognitive activity, comprised of three cognitive processes - planning, translation, and reviewing - which occur recursively throughout the composing process in mature writers (Alamargot and Chanquoy, 2001, p. 21). The process of reviewing and revising text, therefore, can occur not only after the completion of a first draft, but also during planning, and during the generation of text on page or screen. Allal and Chanquoy (2003) conceptualise this in terms of three forms of revision. Firstly, there is *pretextual* revision, that is textual revision interacting with the planning process in the form of sketches, scripts, plans, or even in mental formulations, before the text is effectively linearized and inscribed on the sheet of paper or on the computer screen. Secondly, there is *online* revision, occurring during the text generation process, when the writer changes something that is being written or that has just been linearized. And finally, there is *deferred* revision, carried out after a draft or an initial version of the text has been written.

However, research has also indicated that young or novice writers find the revision process harder than more expert writers. Skilled writers both revise more sustainedly and make more effective revisions, including at text level (Sommers, 1980; Sharples, 1999; McCutchen, 2006). This greater attention to revision is attributed to a stronger representation of the writing task and of the reader (Kellogg, 2008), but also to greater capacity in working-memory. Researchers have repeatedly drawn attention to the constraints on working-memory for young children as writers (Bereiter and Scardamalia, 1987; Berninger, Cartwright, Yates, Swanson and Abbott, 1994; Hayes, 2012): the demands of transcription and orthography in young writers makes high demand on their working-memory reducing the availability of cognitive resources for revision. As a consequence, where revision occurs, it tends to be more focused on local rather than global aspects of text composition.

At the same time, it is important to note that cognitive psychology focuses principally on the writer as a lone individual and the mental processes they employ. This, of course, ignores the fact writing is a social practice, inscribed within communities of practice (Haas Dyson, 2003; Nystrand, 2006), where young writers are learning not simply about producing a text, but also about the expectations of writing in their own writing communities, both in the classroom and beyond. In other words, in the writing classroom, children are learning not just about writing as a regulated system, but also being inducted to the social practices of writing, and what is valued in writing in that community.

It is also the case that previous research on revision has tended to focus more on post hoc, or deferred revision, than revision during the process of generating text (Sommers, 1980). Where research has addressed revision whilst writing, it has either used think-aloud protocols (Flower et al 1986) which may disrupt the cognitive process of writing, or post hoc stimulated recall (Myhill and Jones, 2007; Myhill, 2009), which relies on accurate recollection of decision-making. More recently, the affordance of technology has facilitated more studies which make use of keystroke logging software to capture revisions during writing, but this takes no account of word-processing on the composing process because it can only capture actual changes made in the text, and not changes considered and rejected. Significantly for the focus of this article, none of these methodological choices are appropriate for investigating the revising-while-writing of young writers, because young writers are more likely to struggle with the cognitive demands of either think-aloud or stimulated recall tools, and are still at the stage where their experience of writing is largely handwritten. This study addresses this lacuna in the research by using a multimodal system (Ramos System - Calil, 2020) for capturing the process of writing of newly-literate writers, children who are writing a complete story for the first time, to better understand the nature of revision in these young writers. The study set out to answer the research

question: what do newly-literate writers' textual modifications and oral comments reveal about their metalinguistic understanding of writing revision? The data, collected in a naturalistic classroom environment, incorporates collaborative composition and revision of narrative texts, and, crucially, has permitted an analysis not only of changes made or not made as the text unfolds, but also the children's discussion of these changes. It will show three important aspects of the textual review process in these young writers:

1. The range of metalinguistic thinking of these newly-literate writers, verbalized through the collaborative dyads;
2. The prevalence of attention to graphic-spatial aspects of writing, even when the modifications are triggered by the recognition of lexical or syntactic problems;
3. The nature of dyadic dialogue in newly-literate writers when composing collaboratively.

In addition, the paper demonstrates the contribution that qualitative, microgenetic and multimodal analyses can offer to the understanding of textual revision on ongoing text, drawing on Textual Genetic theory.

## 2.0 THEORETICAL FRAMEWORK

### 2.1 Textual Genetics

The theoretical framework for this article is the relatively new field of textual genetics (see for example, Gresillon, 1994; Hay, 1993; Lebrave, 2002; Ferrer, 2011). This body of research has its origins in French structuralism and literary criticism. However, unlike literary criticism, its principal focus is on the process by which a text is created – its genesis – rather than on interpretations of the final text. Deppman, Ferrer and Groder explain that genetic criticism '*strives to reconstruct, from all available evidence, the chain of events in a writing process*' (Deppmen et al 2004:2). Thus textual geneticists are interested in all the texts which lead to the final text, including notes, sketches and drafts, as a way of understanding how the text came to be. Ferrer et al. argue that '*genetic criticism actually destabilizes the notion of "text" and shakes the exclusive hold of the textual model. One could even say that genetic criticism is not concerned with texts at all but only with the writing processes that engender them*' (Ferrer, 2004, p.11). It is this interest in the writing process, foregrounding the text-in-creation, and the capacity of textual genetics to generate '*fine-grained analyses of writing strategies and processes*' (Alamargot and Lebrave, 2010, p.13), which has salience to our focus on newly-literate writers and their revision processes (Fabre, 1986, 1987; Boré, 2000; Alcorta, 2001; Doquet, 2011).

Most publications on textual genetics are written in French, and in addition, the field has developed its own metalanguage which does not always translate easily into English. Thus, we provide a table of terms below which we will use consistently throughout this article, but which we will italicise to indicate their meaning may not be the everyday English understanding of that word.

TERM	DEFINITION
textual object	The textual object refers to the locus of interest and can refer to: <ul style="list-style-type: none"> <li>• Graphical-spatial elements: for example, drawings and graphic marks related to the use of space on the ruled paper sheet, for example, use of margins, lines, etc.</li> <li>• Linguistic elements: for example, orthographic, syntactic, semantic, lexical, phonological, morphological, etc</li> <li>• Textual elements: for example, title, plot, theme, characters, direct speech, indirect speech, idea, information, pragmatic effects, etc (Calil, 2012a, 2012b, 2016; Calil and Pereira, 2018)</li> </ul>
erasure	The recursive and metalinguistic operation of inserting or deleting a written segment (letter; word; sentence etc); or replacing it with another segment through substitution,

	addition, change of position or 'suppression/deletion' (Rey-Debove, 1981; Gresillon, 1996; De Biasi, 1996)
school manuscript	The school manuscript (Calil, 2012b) preserves the unfinished (unpublished) condition of the written piece (handwritten by the students, in most cases) in a school context, under didactic and teaching-learning conditions. It is necessary to use this term to establish the link with Textual Genetics, but mainly to preserve the specific characteristics of this object (sketches, scripts, plans, etc.) with their blurs, scratches, overwritten, arrows, blot, obliteration, deletion, incomplete sentences, miscellaneous errors (spelling, grammar), drawings, etc. (Gresillon 1994; Gresillon, 1988; De Biasi and Wassenaar, 1996)
enunciation	The individual act of producing an utterance, characterized in the 'here' and 'now' of the saying. The main characteristic is that it is an unplanned verbalization, carried out in the face-to-face interactional dynamics, of which a set of paralinguistic elements forms part. (Benveniste, 1970).
linearization	Linearization is characterized when each stroke, letter, word, punctuation mark, sentences... on the line of the sheet of paper is effectively inscribed: " <i>different parts of the texts follow on from each other in linear fashion.</i> " (Alamargot and Fayol, 2009, p.26). However, each new inscription establishes simultaneously and immediately a link between what has already been inscribed and what will be inscribed next. For this reason, we understand linearization as a linear movement in double directions.

Table 1: explanation of the terminology of textual genetics

## 2.2 Textual revision and metalinguistic thinking

The focus of this article is on the *erasure*, as a way of understanding young children's revision processes, and on *enunciation (utterance)*, as a way of understanding their metalinguistic thinking about the creation of text. The *erasure*, as a phenomenon related to the activity of textual revision, implies three competences of the writer:

1. The identification of the *textual object* that has been inscribed and *linearized* on the surface of the support (paper sheet or computer screen, for example)
2. The recognition that this *textual object* (spelling, letter, word, sentence, paragraph...) could or should be different from what was actually written.
3. The modification of the *textual object*, written, identified and recognized; this modification can be done by erasing graphic and / or linguistic elements (textual object), by replacing it, by deleting it, by adding another textual object, or by displacing its position.

These three aspects of textual review align with the heuristic of Compare-Diagnose-Operate (Bereiter and Scardamalia, 1987, p.266), or what Chanquoy describes as '*an examination of the text already produced, which involves rereading, eventually followed by corrections or modifications, which engages editing*' (Chanquoy, 2009, p.80). This involves two interconnected actions: the action of re-reading and evaluating what was written, and the action of making a change (reviewing and revising, as per Hayes and Flower's model of writing, 1980). Of course, reviewing can occur without a revision or some kind of erasure on the surface of the support; and both reviewing and revision, can occur *online*, during the text generation stages, or *deferred*, once a draft is complete (Allal and Chanquoy, 2003)

Because textual review involves both reviewing and revising, it is generally regarded as a metalinguistic activity (Gutierrez, 2008; Myhill, Jones and Watson, 2013; Fontich, 2016), and thus an *erasure* is visible evidence of metalinguistic action. Equally children's *enunciations*, what they say during the process of writing, can be a window on their metalinguistic thinking. And yet, the nature of textual review by students

who have just learned to write their first texts has not widely researched, with more studies investigating older school writers (Myhill and Jones, 2007, Camps, Guasch, Milian and Ribas, 1997), college students (Sommers, 1980), and second language writers (Storch, 2005; Swain, 1997; Lapkin, Swain and Smith, 2002). At the same time, as noted earlier, most research on revision has analysed the changes evidenced in final texts (Rouiller, 2003) and not the temporal analysis of changes made during text production. In this respect, Camps et al (2000) study, is distinctive and relevant to this study in that it exploits the situation of collaborative writing to consider writing decisions made during the process of writing. The audio capture of talk alongside writing allowed for the identification of oral reformulations and the metalinguistic activities established during the dialogue between the students who wrote together. However, analysis of these oral reformulations did not consider the *erasures* associated with metalinguistic activities: for example, if there was a relation between the occurrences of *erasures* and the metalinguistic activities verbalized.

Camps et al's (2000) attention to collaborative writing builds on the work of others who have investigated collaborative writing as a context for learning about writing. This body of work has considered collaborative writing from different theoretical perspectives - as a way to understand the cognitive process of writing (for example, Daiute 1986, 1988, 1993), writing as a social process (for example, Haas Dyson (2002, 2009), or as a dialogic process (for example, Rojas-Drummond, 2020; Boyd, Mykula and Choy 2019). Collaborative writing research has addressed second language learning (Storch, 2013); academic writing (Ritchie and Rigano, 2007); adult learners (Grief, 2007) and writing online (Nykopp, Marttunen and Erkens, 2019). However, there is scant research on collaborative writing in younger writers, particularly newly-literate students. At the same time, none of this research has investigated metalinguistic thinking about revision, evidenced through verbalisations during collaborative writing in this age group. The study which is the focus of this article addresses this gap by examining the textual review process of two newly-literate children, children who are writing a complete story for the first time. Through analysing the *erasures* and *enunciations* made as they write, captured in real time, we offer an understanding of these revising processes and metalinguistic thinking about writing made during dyadic dialogue whilst writing collaboratively.

### 3.0 METHODOLOGY

As noted earlier, there are methodological challenges in researching revision. The two actions of reviewing and revising, as described in the Hayes and Flower model of writing (1980) are differently accessible. The first action (reviewing) has a more internal dimension, difficult to access to the investigator, while the second action (revising) may be more externally visible through identification of the graphic changes made to the text already written. The identifications of the visible changes are only possible because they leave *erasures* on the written surface, implying that all *erasures* involve a textual review action. Previous research addressing revision has tended to focus more on those revising changes made after a first draft has been completed, and where attempts have been made to investigate revision during the process of generating text, there has been a reliance on either think-aloud protocols or post hoc stimulus recall. In all cases, the relation between what the writer thought at the very moment when he or she erased a certain word or phrase is difficult for researchers to access. This is particularly so for young writers, still grappling with the challenges of getting words and sentences onto the page, for whom think-alouds and post hoc methods make high demands on working memory and reflective maturity. The study received ethical approval from the University of Alagoas, Brazil (CAAE: 59824616.1.0000.5013).

In this study, our focus is to understand better the nature of revision during writing in newly-literate writers and the metalinguistic understanding this may reveal. By 'newly-literate' we mean young children who have mastered basic transcription and orthography sufficient to be able to write their first complete narrative texts. To do this, we have made two important methodological decisions. The first is that we have used the

opportunity of a collaborative writing context to capture (with a smartpen associated with the HandSpy tool (Monteiro and Leal, 2012) not just *what* children are writing but also their *dialogue* (captured with digital recorders and lapel microphones) about writing during the process. Secondly, we have used the affordances of technology (handycams) to secure a more multimodal and temporal data capture of writing and revision. Both will be described in more detail below. These methodological decisions facilitate a textual genetic approach, allowing us to foreground the text-in-creation, and the dyadic dialogue unfolding around the genesis of the text.

The first author of this paper is a Brazilian educational researcher, close to and familiar with the context of the study; whilst the second author is an educational researcher from the UK, who was a funded international partner. The first author conducted the research design and data collection, and the data analysis and interpretation was undertaken collaboratively by both authors. A shared philosophical position informs this paper. Both authors ground this paper within a sociocultural framework, informed by an ontological stance that sees reality as intersubjectively constructed through social interaction, including through language, shaped by individual human experiences. This stance leads to an epistemological view that there is no single truth, rather there are multiple truths, reflecting individual perceptions, motivations and sociocultural contexts. Accordingly this paper interprets through a process of making sense of the data, rather than through a hypothesis-testing process, seeking through micro-analysis to represent the genesis of text in the two young participants.

### **3.1 The sample**

The sample comprises 6 sequences of narrative textual production from the same dyad of students aged 6-7 years old (Ana and Luma), Year 1/1st grade in a primary school in Maceió, Brazil (in the northeastern region of Brazil, in the state of Alagoas). Ana and Luma are two white, monolingual Brazilian girls, daughters of Brazilian parents. They live with their parents, and both families belong to the Brazilian middle class, with access to consumer and cultural goods (books, cell phones, shoppings restaurants, cinemas, theatres etc.). Their homes are close to the school, located in a middle class neighborhood, in the central region of the city of Maceió. They study in a private school, which receives students from pre-school and up to the fifth year of primary education (from 3 to 10 years old). The school adopts the handwritten block letter at the beginning of the student's literacy year, and then generally, in the sixth month of school, the teaching of handwritten cursive begins. Based on a social constructivist curriculum, the instructional contract established between teacher and students values textual production (textual genre approach) more than teaching the spelling and grammar rules. The narrative textual productions forming the sample were Ana and Luma's first six invented stories written in cursive handwriting. These narrative writing tasks were set every two weeks for the entire class, and the teacher formed the pairs for each task based on her knowledge of student friendships. In the elicitation of these pieces of writing, the teacher asked each pair of students to invent and write a story collaboratively, producing a single text. At first, the dyads orally combined the invented story. Then they were given a sheet of paper and pen to write the story. When they were finished, the teacher asked them to read her the invented story they had written. The students alternated between being the scribe or the dictator of the text across the six narrative tasks. The choice of the pair to be filmed for the research was also made by the teacher, in agreement with the students' parents. It is important to say that students quickly get used to the presence of the camcorder in the classroom "forgetting" that they are being filmed (as evidenced in the film extracts below). To maximize the preservation of the natural (ecological) classroom environment and the spontaneous interaction between students and teacher the researchers left the classroom during data collection.

### **3.2 Data collection processes**

The Ramos System (Calil, 2020) was used to create synchronized film recordings of the process of composition and the accompanying spontaneous dialogue made by the children. This brings together two data sources: a video recording of the children writing together, capturing their dialogue, non-verbal actions and environmental information about the classroom; and a Handspy video recording of the writing text as it emerges. Thus this video synchronisation allowed mapping in real time the occurrences of all *erasures* that occurred on the sheet of paper and simultaneously capturing what was said by the students while making erasures and revising the ongoing *manuscript*. In sum, this methodological approach permitted the tracking of the textual genesis, that is, the recording of the whole process of the manuscript under construction, from the launching of the task of producing text by the teacher until the moment the school manuscript was finished and delivered to the teacher. Thus we were able to capture the *erasures* made and the children's comments on those *erasures* as they happened in real time, rather than needing to rely on think aloud or post hoc methods.

### 3.3 Data Analysis

Drawing on the theoretical-methodological perspective of Textual Genetics (Gresillon, 1994), we undertook a temporal analysis of the genesis of a text. From this perspective, we treat the *erasure* not only as what was visible on the paper sheet, but as any recursive and metalinguistic operation (oral and/or written), which indicates the identification, recognition and modification of any *textual object* to be written or already linearized in the school *manuscript* under focus. Thus, for any given *manuscript* we may have *oral erasures* (Calil, 2016), that is, the co-speaker's 'negative' enunciative response on a *Textual Object*, that potentially has the function of justifying, correcting, explaining the maintenance or amendment of the *Textual Object* already written or to be written in the current manuscript. Oral erasures are observed only in the synchronized film because the school manuscript shows no erasure marks at the points where these enunciative responses occurred. We may also have *written erasures*, that is, graphic marks (scratches, scribbles, superscripts, insertions) which indicate the return of the writer to a *textual object* already linearized in the *school manuscript*. Both types of erasure may or may not be accompanied by comments made by writers.

By comment, we mean any *enunciation (utterance)* referring to the *Textual Object* identified as a problem. In general, the comment has the effect of maintaining, modifying or deleting this *Textual Object* and represents metalinguistic thinking. However, the child's spontaneous comments do not always address a *Textual Object*, but other aspects of interpersonal dyadic dialogue. For this analysis, comments such as “*Did you see Barbie that has the horse?*” or “*Buy her for me?*”, which do not relate to Textual Objects, have not been considered included in the analysis.

Each *erasure* with comments was then classified, according to the kind of *Textual Object* it represented, drawing on a categorisation developed by Calil (2017):

<b>GRAPHICAL SPATIAL ELEMENTS</b>	
Graphic-spatial	The tracing of a letter or word and its relationship to the position and space occupied on the sheet of paper.
Punctuation marks	Graphic marks related to the punctuation mark system.
<b>LINGUISTIC ELEMENTS</b>	
Phonological	Metaphonological analysis of the relations between phonemes and graphemes.
Orthographic-lexical	Phoneme-grapheme relationship and spelling combinations of letters to form a word.

Orthographic-grammatical	Analysis of word writing considering its role in the sentence (verb conjugation, gender and number, grammatical category (proper nouns), some uses of capital letters associated with punctuation)
Semantic/lexical	Meaning of a word or expression.
Syntactic	How words are combined in relation to the sentence's syntactic structure.
<b>TEXTUAL ELEMENTS</b>	
Textual	Aspects (titles, plot, theme, characters' speech, meaning effects etc.) related to the unit of meaning (textual coherence)
Pragmatic	Aspects related to the communicative situation.

Table 2: the categories used to analyse children's erasures and comments.

In order to analyze the relationship between *written erasures* and *enunciative* comments, we chose as the unit of analysis the dialogue between pairs of students (Text Dialogues) and the text it referred to. We identified the episodes (131) characterized by the student's recognition of some *textual object* related to the current *manuscript*, and a subsequent *written erasure*. Any graphic or linguistic element recognized by the writer was considered as a textual object. Drawing on the multimodal data capture, we transcribed not only the verbal comments, but also the non-verbal communication and contextual information. In this way, each identified episode was characterised by a temporal representation of the text at different timepoints in the writing, with a hyperlinked video clip to watch if needed, and a transcription of both dialogue and non-verbal communication. This paper present a micro-analysis of six of these episodes.

## 4.0 FINDINGS

### 4.1 The statistical analysis

The first analysis indicates the word count of each piece of writing and the number of *written erasures* per writing sequence (see Table 3). This indicates that Luma wrote slightly longer texts than Ana (a mean of 156 words compared with Ana's mean of 122 words), which may suggest marginally greater proficiency as a writer. We identified 131 *Textual Objects*, where an *erasure* occurred, with a mean of one *erasure* every 6.5 words.

Task	Scribe	Story Title	Word Count	Erasures
1	Ana	O rei malvado <i>The evil king</i>	63	14
2	Ana	Fadas Mágicas <i>The magic Fairies</i>	129	36
3	Luma	Chapeuzinho Vermelho e o Homem Aranha contra o Lobo Mau <i>Little Red Riding Hood and the Spider-Man against the Bad Wolf</i>	149	28
4	Luma	Branca de Neve no tempo dos dinossauros <i>Snow White at the time of the dinosaurs</i>	157	15
5	Ana	O cachorrinho perdido <i>The lost puppy</i>	174	24
6	Luma	Os três coelhinhos <i>The Three Bunnies</i>	161	14
<b>Totals</b>			<b>833</b>	<b>131</b>

Table 3: Summary of the Six Writing Tasks, word counts and number of erasures

As this article is principally concerned with what children’s *enunciations* (spontaneous comments) reveal about their metalinguistic understanding and their management of the writing process, a second layer of analysis separated the *written erasures* into two categories, those made with no comment and those with comments accompanying them (see Table 4: note – an *erasure* may be accompanied by more than one comment.). This shows that of the 131 *erasures*, 59% did not receive any form of commentary, while 41% received some type of comment.

Task	Scribe	Story Title	Erasures: no comment	Erasures: with comment
1	Ana	O rei malvado <i>The evil king</i>	7	7
2	Ana	Fadas Mágicas <i>The magic Fairies</i>	25	11
3	Luma	Chapeuzinho Vermelho e o Homem Aranha contra o Lobo Mau <i>Little Red Riding Hood and the Spider-Man against the Bad Wolf</i>	17	11
4	Luma	Branca de Neve no tempo dos dinossauros <i>Snow White at the time of the dinosaurs</i>	8	7
5	Ana	O cachorrinho perdido <i>The lost puppy</i>	13	11
6	Luma	Os três coelhinhos <i>The Three Bunnies</i>	7	8
<b>Totals</b>			<b>77</b>	<b>55</b>

Table 4: The Number of Erasures with no comment and with a comment

The fact that 41% of the *erasures* have an accompanying comment suggests that the collaborative writing in dyads may activate or encourage verbalization of metalinguistic thinking associated with the *written erasure* under scrutiny.

Using the categorisation of Textual Objects in Table 2, the analysis identified six categories present in the *erasures* and comments of these young writers: Graphic-spatial, Lexical Spelling, Grammar Spelling, Semantic/Lexical, Syntactic, and Textual. Figure 1 below presents the outcomes of this analysis.

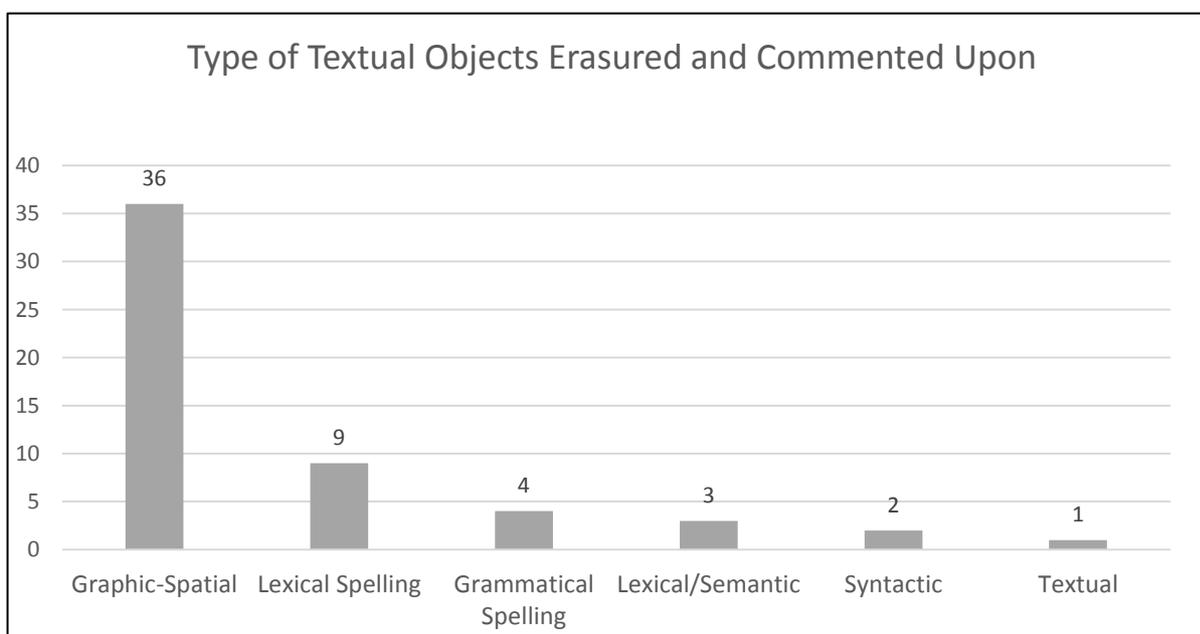


Figure 1: The Categorisation of Written Erasures according to the Textual Objects they represent

As noted earlier, these were the first six *school manuscripts* produced by Ana and Luma using cursive handwriting. This analysis makes very transparent that their principal metalinguistic focus at this stage in their development is on graphic-spatial issues, with spelling the next highest focus, though significantly less than graphic-spatial. This attention to graphic-spatial problems probably reflects that they are still growing confidence and fluency in the motoric and transcriptional domains of writing. Although the *school manuscripts* present a large number of orthographic errors, there are no internal punctuation marks, there are syntactic ruptures and problems of cohesion, lexical repetition or semantic imprecision, but the students have not yet identified most of these problems.

The categorisation of *written erasures* according to the *Textual Objects* they represent was also undertaken for each of the six writing tasks in order to determine if there were any further patterns evident (see Figure 2). What this reveals is that the distribution of comments is not the same for the two. When Ana is writing (Tasks 1, 2 and 5) there are 20 graphical-spatial *Textual Objects* recognised and subject to an *erasure*, over a total of 336 words written. In contrast, when Luma is writing (Tasks 3, 4 and 6) the occurrences are smaller (16 graphical-spatial *Textual Objects* subject to *erasures*, over a total of 467 written words). This may suggest that Luma has a greater command over cursive handwriting, thus her writing triggers fewer graphic-spatial comments from Ana. As shown in Figure 1, the second largest amount of *Textual Objects* recognized and subject to an *erasure* relates to the Lexical-Spelling category. However, this does not occur in all tasks, although all of the *manuscripts* present many misspellings. It is noteworthy that the nine recognitions of lexical spelling problems occurred more frequently in the sequences in which Luma wrote and Ana dictated (seven identifications, distributed across Tasks 3, 4 and 6). In the sequences when Ana is writing, there are only two lexical-spelling *Textual Objects* triggering attention (one each in Task 1 and Task 5).

The *written erasure* comments relating to graphic-spatial *Textual Objects* were more commonly made by the scribe than by the dictator. This may suggest that the graphic-spatial *Textual Object* has a more internal, 'self-evaluative' nature, that is, the student herself tends to evaluate the quality of her own cursive letter formation. In contrast, the *written erasure* comments on lexical-spelling *Textual Objects* were mostly made by the dictator, rather than the scribe. It may be that the lexical-spelling *Textual Objects* have a more external, 'hetero-evaluative' nature: that is, the recognition of the orthographic problem, in this situation of textual production, may be more easily identifiable by the dictating student. However, this point would need to be explored further in future studies, since the spelling knowledge that each student holds and shared attention to the current manuscript may be of decisive importance.

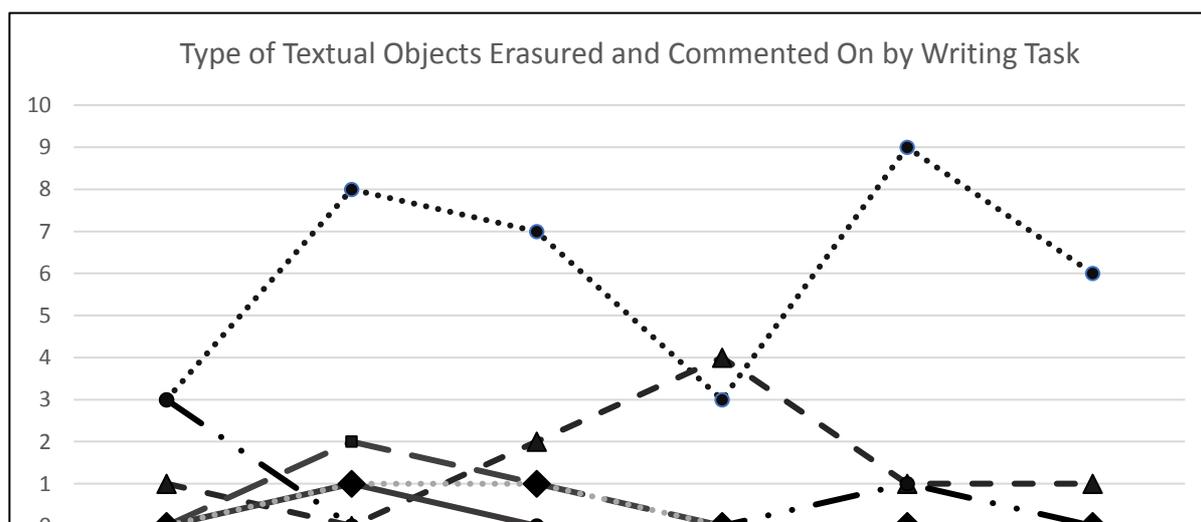


Figure 2: The Categorisation of Textual Objects by Writing Task

Whilst this kind of descriptive statistical analysis is useful in highlighting particular patterns in the data, it tells us nothing about the metalinguistic thinking, or otherwise, that informed Ana and Luma's decision-making. In the next section, we will present an analysis of some of the episodes of peer dialogue, exploring the relationship between the patterns of *written erasures* presented here and the characteristics of the comments associated with them.

#### 4.2 Qualitative Analysis of the Student Dialogues

The quantitative information presented shows that the *written erasures* with comments have a greater incidence in the graphic-spatial and spelling-lexical categories, perhaps a relatively predictable outcome, given the stage of learning of these students. The verbalized commentary – the *enunciations* - unlike the *written erasure* identified on the sheet of paper, can offer greater insight into the student's metalinguistic activity and the way in which this activity explicitly represents linguistic (meta)knowledge.

Below we analyse some of the text-dialogues to exemplify this relationship, considering the types of *Textual Object* recognized. For illustrative purposes, we have selected text-dialogues for each of the Textual Objects identified to show the range of dialogues, although it should be remembered that the significant majority were graphic-spatial. In these presentations, we try to capture in linear written form, both the temporality and the multimodality of the data capture, which poses some challenges. So we have used the following procedures consistently throughout:

- ❑ each talk-dialogue shows the extract of text as it was produced, with time indications given, and the *written erasures* made visible;
- ❑ translations of the Portuguese into English have been provided;
- ❑ alongside the text extract, we present the dialogue that accompanied these moments of text production;
- ❑ an asterisk indicates the scribe for that writing task;
- ❑ the *textual object* being considered is in bold type;
- ❑ only the students' comments on the erased textual object are underlined and italicised;
- ❑ the brackets capture the non-verbal activity;
- ❑ each dialogue turn is numbered: in the data analysis, each speech shift in each task was numbered sequentially from the initial presentation of the task by the teacher, thus the line numbers represent where it occurred in the overall episode.

##### 4.2.1 Textual Object: Graphic-Spatial

In this episode, lasting 87 seconds, Ana is scribing the story of *The Evil King*, and she is beginning to write the word '*cupcake*'. To spell this word, she draws on her phonological knowledge of how the sounds in each

syllable of the Portuguese word 'copikeiquis'. She writes 'copi', pauses and repeats the syllable 'que', which leads her to ask how to shape the letter 'k':

<p>7. </p> <p>8. </p> <p>Ana: 00:30:24</p>
<p>Portuguese:</p> <p>7. Rei Pedio Para o <del>s</del> Súditos <del>pedir</del></p> <p>8. Comprar um Copi [cake]</p>
<p>English Translation:</p> <p>7. King Asked the <del>s</del> Subjects <del>edit</del></p> <p>8. to Buy a Cup [cake]</p>
<p>7. </p> <p>8. </p> <p>Ana: 00:30:57</p>
<p><a href="https://1drv.ms/v/s!AuUyuvPIDIY2iqx0hzPpOIMCStFiQA?e=d5AtvP">https://1drv.ms/v/s!AuUyuvPIDIY2iqx0hzPpOIMCStFiQA?e=d5AtvP</a></p>

Figure 3: Task 1 – Ana

Transcription of dialogue and non-verbal actions during this episode Task 1, [00:30:01 - 00:30:57], when Ana is writing the noun phrase 'um cupcake' / 'a cupcake':

543. Ana\* (Writing the word 'um'/'a'.) ...a [um] ... (Luma humming, not seeing what Ana is writing.) ... *cupcake* ... *Coo [co]*.. (Ana stopping to linearize the word 'cupcake', lifting the pen and looking at Luma.) *Look at how it joins 'cupcake'* .... (Ana referring to the link between the cursive letter 'o' and the cursive letter 'p'. Ana returning to linearize the syllable 'pi'.) ... cooo-pii [pi] ...
544. Luma: (Looking at Ana and speaking with a little impatience.) *When are you going to finish this, huh? Tomorrow?*
545. Ana\*: (Finishes writing [CoPi]) *Copi-que ... que-que-que ...* (Begins to shape the letter 'K'.)
546. Luma: *Uuu, today is the big day.*
547. Ana\*: (Interrupting the stroke [ l ] of the **letter 'k'**, asking and looking towards the alphabet on the blackboard.) ***How is 'K'?***
548. Luma: (With a mocking voice.) *'K' ... o 'K' ... o 'K' ... o 'K' ...*
549. Ana\*: (Looking at the blackboard for the letter 'K'.) *Luma, seriously. I want the 'K'.*
550. Luma: (Rising from her chair to look at the blackboard.) *Ah, let's go.*
551. Ana\*: (Rising too, looking and pointing at the blackboard.) *Let me see.*
552. Luma: (Kneeling in her chair, talking loudly.) *I know ... what it is. It's similar to the 'R.'*
553. Ana\*: (Going back, sitting and going to write 'k'.) *It's similar to 'H'.* (She enters the lower-case letter 'K' on the initial stroke of the letter 'K' previously made [k].)
554. Luma: *With the 'R' ... 're-re'.*

The *Textual Object* recognized by Ana is graphic-spatial. Through her question "How is [the letter] 'k'?" she signals the problem which triggers the *written erasure*. The letter *k* is infrequent in Portuguese and it is probable that Ana only became aware of its existence when she learned the alphabet. As yet the graphic form of this letter was not automatised, so she searches for this information in the alphabet fixed above the blackboard, as shown by the direction of her gaze on turn 549. Ana also cues Luma that her problem is real

(Luma, seriously, I want the 'K'), and together they seek to solve it (550-551). In turns 552-3, Ana and Luma engage in metalinguistic discussion about the shape of the letter K, Luma comparing it with the letter R, and Ana with the letter H, revealing their focus on the graphic-spatial.

The fact that the students use the alphabet display fixed above the blackboard and recognise the similarity between these letters indicates two important points in their metalinguistic activities at this age. Firstly, the students made active use of visual access to the graphic forms of handwritten letters in the alphabet display. Secondly, the display acts as a cognitive resource to facilitate comparative relationships between the graphic forms of different letters. This also exemplifies the point made in the earlier statistical section, that graphic-spatial problems seem to be more 'self-evaluative', identified by the scribe, not the dictator.

#### 4.2.2 Textual Object: Lexical-Spelling

In this episode, lasting 85 seconds, Luma is writing *Snow White and the Dinosaurs*. As the episode begins, Luma is writing in silence 'e ela ficou com medo' (and she was afraid). She then shows her sheet to Ana that says 'e correu (and ran)'.  
 Luma: 00:29:26

<p>6. encontrou o dinossauro rex e ela ficou          7. ou com medo e correu</p> <p>Luma: 00:29:26</p>
<p>Portuguese:          6. encontrou o dinossauro rex e ela ficou          7. ou com medo e correu</p>
<p>English Translation:          6. found the dinosaur rex and she got          7. scared and ran</p>
<p>6. encontrou o dinossauro rex e ela ficou          7. ou com medo e correu</p> <p>Ana: 00:29:38</p>
<p>6. encontrou o dinossauro rex e ela ficou          7. ou com medo e correu correu</p> <p>Luma: 00:29:51</p>
<p><a href="https://1drv.ms/v/s!AuUyuvPIDIY2iqx_zfgE5ir4vNgDMg?e=aUpmZb">https://1drv.ms/v/s!AuUyuvPIDIY2iqx_zfgE5ir4vNgDMg?e=aUpmZb</a></p>

Figure 4: Task 4 – Luma

Transcription of the dialogue and non-verbal actions during this episode [task 4, 00:28:28 - 00:29:53], when Luma is linearizing the sentence 'e ela ficou com medo e correu' / 'and she was scared and ran':

367. Ana: (Dictating) ... *And she was afraid.* (Luma, in silence, is linearizing the sentence [e ela ficou com medo] (and she was scared). Teacher who was nearby, moves away. Luma ends the linearization of 'and she was afraid', turning the sheet of paper to Ana to read. Ana continues dictating.) ... *And ran.* (Ana returns the manuscript to Luma to continue linearizing what she dictated. Luma linearizes 'and ran' [e correu] (and ran). Luma turns the page back to Ana who reads the last word and corrects.) ... it is with two 'Rs'. (Ana pulls the pen out of Luma's hand,

erasing [coreu], returning the sheet and pen to Luma, repeating.) ... *It's with two 'Rs'!* (Luma picking up the pen and the sheet, and she linearizes the word 'ran' again [correu]. When she finishes, Luma returns the sheet for Ana to read.).

The *written erasure* here is a straightforward lexical spelling issue, replacing the incorrect 'coreu' with the correct version, 'correu'. This type of error is typical at this stage of writing development. Ana reveals her metalinguistic understanding by identifying the error, and by suggesting the correction. Indeed, she temporarily shifts role from dictator to scribe when she takes the pen from Luma and crosses out the error. She acts as a reviewer, not only recognizing the *Textual Object*, but also proposing the correct lexical-spelling form. This also illustrates the point made earlier – that lexical spelling *erasures* may be more 'hetero-evaluative', identified by the dictator, not the scribe.

#### 4.2.3 Textual Object: Grammatical Spelling

This 19 second episode presents Ana, who is responsible for *linearizing* the story, *The Evil King*, with Luma as dictator. Ana is beginning to *linearize* 'and the widows did not like him', when Luma makes an *erasure* intervention.

<p>Portuguese:</p> <p>4. debaixo de uma grande terra</p> <p>5. que os viúvos e as viúvas</p>
<p>English Translation:</p> <p>4. under a large land</p> <p>5. that the widowers and the widows</p>
<p><a href="https://1drv.ms/v/s!AuUyuvPIDIY2iq0figaTLxrS3SDI6w?e=7bkwgs">https://1drv.ms/v/s!AuUyuvPIDIY2iq0figaTLxrS3SDI6w?e=7bkwgs</a></p>

Figure 5: Task 1 – Ana

*Transcription of dialogue and non-verbal actions during this episode [task 1, 00:19:30 – 00:19:59], when Ana is linearizing the sentence 'e as viúvas não gostavam dele' / 'and the widows didn't like him':*

- 410. Luma: (Reading 'que os viúvos' / 'that the widowers' and dictating the continuation of the story).  
... *the widowers ... (dictating) ... and the widows ...*
- 411. Ana\*: (Linearizing 'as viúvas' / 'the widows.' Luma looking at what is being linearized.) ... *and [e]*  
...*the [as] ... widows [vi] ... vi ... uuu [u] ... vas [va]* (letter 'a' was incomplete) ... *They did not like him.* (Luma looking at the end of the written word [viuva] / 'widow'. (Ana begins to linearize the letter 'n.') ... *noooooooooo [n] ...*

412. Luma: (Looking at [as viuva] / 'the widow.') *Where is the...* (Ana interrupts the stroke of 'n.' Luma observes the lack of letter 's' in 'widow.') *Did you do the letter 's' here?* (Pointing with her index finger at the end of the word spelled [viuva] and emphasizing the plural 's' sound.) *Viú-vas ...*
413. Ana\*: *As ... viuvvas* (the widows) (Ana adding the letter 's' to the end of the word 'widow.' The letter 's' is linearized over the stroke of the letter 'n'. Ana resumes the linearization of the word 'no') ... no [não] ... liked...
414. Luma: ...*him*.

Here the *written erasure* problem is grammatical spelling. Problems of nominal agreement between determiner and noun, when the first is put in the plural and the second in the singular, are common in Brazilian Portuguese speakers. It is also common for speakers with little experience in producing texts to transfer this agreement to the written text. Luma's question (turn 412) shows she has metalinguistic knowledge of the need for an 's' to mark the plural, which she uses to support Ana's writing, although she does not elaborate on the rule of nominal agreement.

#### 4.2.4 Textual Object: Semantic/lexical

This two minutes and thirty seven episode presents Ana, who is responsible for *linearizing* the story, *The Magic Fairies*, with Luma as dictator.

<p>10. <i>Seginta elas ficaram em Casa e gando foi Hora</i></p> <p>11. <i>do almoço</i></p> <p>Ana: 00:42:16</p>
<p>Portuguese:</p> <p>10. <i>seginta elas ficaran em Casa e gando foi Hora- Hora</i></p> <p>11. <i>-do almoço- do jantar</i></p>
<p>English translation:</p> <p>10. <i>next they stayed at Home and when it was time</i></p> <p>11. <i>for lunch for dinner</i></p>
<p>10. <i>Seginta elas ficaram em Casa e gando foi Hora</i></p> <p>11. <i><del>do almoço</del></i></p> <p>Ana: 00:44:20</p>
<p>10. <i>Seginta elas ficaram em Casa e gando foi Hora</i></p> <p>11. <i><del>do almoço</del> do jantar</i></p> <p>Ana: 00:44:37</p>
<p><a href="https://1drv.ms/v/s!AuUyuvPIDIY2iq0hEVzaUXKXVnSAdA?e=h5hojc">https://1drv.ms/v/s!AuUyuvPIDIY2iq0hEVzaUXKXVnSAdA?e=h5hojc</a></p>

Figure 6: Task 2 – Ana

*Transcription of the dialogue and non-verbal actions during this episode [task 2, 00:42:02 – 00:44:39], when Ana is linearizing the nominal phrases: 'do almoço' / 'for lunch' e 'do jantar' / 'for dinner.'*

549. Ana\*: (After writing 'when the time came', Ana begins to write 'from lunch.') ... for ... lunch ... do [do] .. almoço (lunch) ... al [al]... moo [mo]... ço [so]... (Abruptly, she interrupts the linearization

of the story, turning to Luma and asking.) Did you see Barbie that has the horse? (Luma nods.) Isn't it cool?

550. Luma: Yeah ...

551. Ana \*: Buy her for me?

(From this moment, 00:42:21, until the 00:44:04, between turns 552 and 584, the two girls talk about their Barbie and Polly dolls and the gift they'll give to a birthday friend. At 00:46:02 Ana interrupts the conversation about the dolls, turns to the sheet of paper, re-reading the last sentence.)

585. Ana\*: ... *and when it was time for lunch* ... (Turning and touching Luma's head with the pen.)

584. Luma: Yess... (Blowing the microphone and looking at Ana.) Ah, yes!

585. Ana\*: No! (Speaking with corrective tone) *When it was time for dinner!!* (Erasure [do almoço] / for lunch).

586. Luma: *Why cannot it be 'for lunch', eh? Why cannot it be 'for lunch'?*

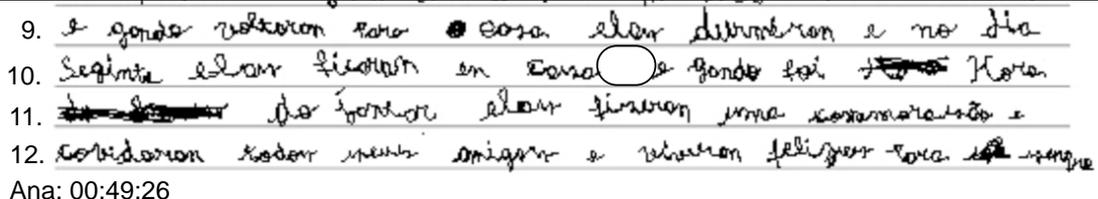
587. Ana: (Linearizing 'do jantar' / 'for dinner') ... do [do] ... *You'll see what I'm going to do ...* [jan] ... *jaann ...* [tar] ... *tar ... They ...* (Continuing to write the sentence 'they did a celebration.')

Here the *Textual Object* is a semantic-lexical problem: whether the word 'almoço' (lunch) or 'jantar' (dinner) should be used. Ana, having scribed Luma's dictation of 'and when it was time for lunch', then rejects it in Turn 585 ("No! When it was time for dinner!!") and then creates a *written erasure*, crossing out 'do almoço'. Ana offers no comment on this erasure, but it prompts Luma to repeat "Why cannot it be 'for lunch', eh? Why cannot it be 'for lunch'?" (turn 586). Ana gives no explanation of her reasoning, but says "... You'll see what I'm going to do ", and then writes 'do jantar' and continues to complete the sentence.

In this dialogue, there is no metalinguistic explanation of the semantic-lexical problem which triggered the *written erasure*. It may be that Ana feels that as the characters went to a party, a celebration, this should be at night and so 'dinner' is the appropriate choice. We can only speculate whether Ana's lack of explanation was simply interpersonal reluctance, or whether she struggled to verbalise how the choice of 'dinner' created textual unity between the idea of a party or celebration' and the period of the day in which this social activity usually happens.

#### 4.2.5 Textual Object: Textual

In this episode, lasting 86 seconds, Ana and Luma have finished writing their story, *The Magic Fairies*, and invite the teacher over. The teacher's response prompts a textual problem, which Ana begins to implement but never completes.

- 
9. e gando voltaran para a casa elas durmiran e no dia  
10. seginta elas ficaran em casa e gando foi Hora  
11. ~~do almoço~~ do jantar elas fizeram uma comemoração e  
12. convidaron todos seus amigos e viveron felizes para ~~sem~~ sempre  
Ana: 00:49:26

Portuguese:

9. e gando voltaran Para ✕ Casa elas durmiran e no dia  
10. seginta elas ficaran em Casa e gando foi Hora— Hora  
11. ~~do almoço~~ do jantar elas fizeram uma comemoração e  
12. convidaron todos seus amigos e viveron felizes para ~~sem~~ sempre

English translation:

9. and when they returned To ✕ Home they slept and in the day

10. next they stayed at Home and when it was time

11. ~~for lunch~~ for dinner they had a commemoration and

12. they invited all their friends and lived happily eve- ever after.

9. e gando voltaron para a casa e elas dormiram e no dia  
10. seguinte elas ficaram em casa e depois foi ~~o~~ Hora  
11. ~~de~~ de jantar elas fizeram uma comemoração e  
12. convidaram todos seus amigos e viveram felizes para sempre  
Ana: 00:50:19

9. e gando voltaron para a casa e elas dormiram e no dia  
10. seguinte elas ficaram em casa e depois foi ~~o~~ Hora  
11. ~~de~~ de jantar elas fizeram uma comemoração e  
12. convidaram todos seus amigos e viveram felizes para sempre  
Ana: 00:50:25

<https://1drv.ms/v/s!AuUyuvPIDIY2iq0sxaAf9xGfJTSUnQ?e=JQvGag>

Figure 7: Task 2 – Ana

Transcription of the dialogue and non-verbal actions during this episode [task 2, 00:49:00 – 00:50:26], when Ana is adding the word 'resting' at the end of the sentence 'e no dia seguinte elas ficaram em casa' / 'and the next day they stayed home'.

624. Teacher: (After Ana has finished reading the whole story, Luma calls the teacher. When the teacher arrives, she asks Ana to read the whole story. When Ana finishes reading, the teacher points and re-reads the phrase 'they stayed at home'). **'They stayed home.'** **Doing what, at home? ... huh?** (Teacher walks away, directing another student who is walking around the room. Luma is humming, not looking at the sheet of paper.)
625. Ana\*: (Speaking as if she were thinking of the answer) *Wait ...* (Setting the pen in her hand and pointing to where she is reading [e gando] 'and when') *... and ... wh... ...'cu-an'... ...cu...* (She crosses out the letter 'g', and overwrites with letter 'C' [g-Cando], *... when ...* (She continues to look at this line of writing.)
626. Luma: (While Ana is reading and pointing her finger on the line.) *I'll get my case to draw?* (Ana continues reading the line, where it says 'they stayed home and when.' She nods to Luma.) *Okay.* (Luma gets up to get the case.)
627. Ana\*: (Not paying attention to Luma, Ana is looking at where it says 'they stayed at home'.) *Missing something.* (Reading again) *They stayed home...* (Speaking with emphasis.) *... 'resting'.*
628. Teacher: (Approaching again, not seeing what Ana is doing.) *Yes. Come on.*
629. Ana\*: *... resting ... I'll try to put 'resting' here ...* (Pointing with the pen to the space between 'stayed at home' and 'and when'.)
630. Teacher: (Interrupting Ana's gesture) *Wait...* (Reading) *... stayed at home ... and ..., what?*
631. Ana\*: (Reading) *and ... when it was time ...* (Pointing to the word 'when'.) *When.*
632. Teacher: *And when it was time ...*

633. Ana\*: (Returning to the problem of adding the word, Ana begins to write 'resting' with a small font type and the word 'resting' tilted to fit in the space between the two words already written.) ... des-can ... I'll try to put here ... [d] ... descans ... [isc] ... (Gives up writing and crosses out [disc]). Because it will not fit... Doesn't fit.
634. Teacher: (Telling Ana that she can leave without writing 'resting'.) No problem. (Teacher the teacher continuing to read 'and when it was time.').

In this case, the initial identification of the *Textual Object* was not made by the student, but by the teacher, re-reading the students' story. Her intervention, asking 'They stayed home.' *Doing what, at home? ... huh?* (turn 624) seems to be asking for further elaboration about what the characters were doing at home. The teacher's question is a textual one, aiming at character description. Ana does not respond immediately, and instead becomes involved in a graphic-spatial erasure, changing the letter 'g' in 'gando' [when] to a 'c' (turn 625). But she does return to it, when she says to herself 'Missing something' (turn 627), and proposes an action for the characters: 'They stayed at home ... resting'. On turn 629, she tries to solve the problem by writing 'descansando' [resting] in the space between the end of the sentence ('they stayed home') and the beginning of the next sentence ('And when it was time for dinner'). The teacher, without observing that the student is still answering the previous question, interrupts her with another question ('and', *what?* ', turn 630) referring to the continuity of the phrase 'And when it was time ... ').

Ana then turns her attention back to the textual problem of character elaboration, and begins to *linearize* the word 'resting', in the small space between one sentence and another. When she realizes that it will not fit, she interrupts her *linearization*, and crosses out what she has just inscribed ([disc]), commenting: 'Because it will not fit... Doesn't fit.' (turn 633). Now the textual problem has become a graphic-spatial one. This indicates firstly, that Ana still lacks the graphic-spatial resources for the insertion of information; but it may also indicate that Ana does not fully understand the textual problem. She responds dutifully to the teacher's prompt but it is not clear from her comments that she has any metalinguistic understanding of why the teacher requests this change.

#### 4.2.6 Textual Object: syntactic

In this episode, lasting 38 seconds, Ana is writing the story, *The Magic Fairies*. The teacher is present throughout the episode, but makes no contribution and Luma is not following what Ana is doing.

11. ~~do almoço~~ do jantar elas fizeram uma comemoração e  
 12. convidaram todos seus amigos e ~~viveram felizes para sempre~~  
 13. bolo de chocolate para comer  
 Ana: 00:56:03

Portuguese:

11. do almoço do jantar elas fizeram uma comemoração e  
 12. convidaram todos seus amigos e ~~viveram felizes para sempre~~  
 13. bolo de chocolate para comer

English Translation:

11. ~~for lunch~~ for dinner they had a commemoration and  
 12. invited all their friends and ~~lived happily ever~~ ever after.  
 13. chocolate cake to eat

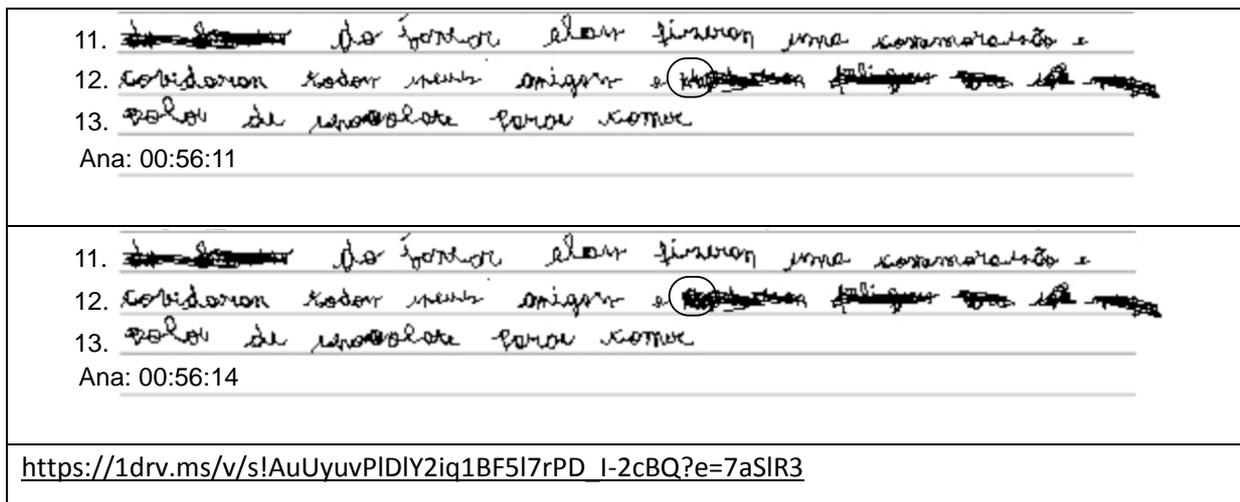


Figure 8: Task 2 – Ana

Task 2 [00:55:40 – 00:56:15]

751. Teacher: (Walking towards the pair.) *Come on, girls ...*
752. Ana: (Seeing the teacher approaching, Ana begins to read aloud the phrase 'e [tinha] bolo de chocolate' / 'and (had) chocolate cake', but the word 'had' is missing. The teacher is leaning over Ana's head while Ana continues to read.) ...*and had cake ...* (Returning to the beginning of the sentence.) *And... chocolate cake to eat.*
753. Teacher: (Looking at the sheet of paper and reading; Ana seems to be thinking about what she has written; Luma is yawning and looking forward.) ...they were... they had a commemoration ... and invited all their friends.
754. Ana: ... *And chocola ...* (Ana adds the word [tinha] (had)) *And had ... Wait...* (she writes the letters of the word 'tinha' (had) between 'their friends and' and a previously crossed out excerpt ['viveram felizes para sempre' / 'lived happily ever after']). Luma is humming. The inscription of 'tinha' [had] ends on the crossed-out the word 'lived'.) *It doesn't fit.* (She crosses out [tinha] / had. Luma continues humming and the teacher continues reading the last line written on the sheet of paper.)

In this episode, Ana encounters a syntactical problem, which may have been promoted by the presence of the teacher. However, it is Ana herself who recognizes the absence of the verb 'tinha' (had) by re-reading what was written ('and chocolate cake to eat'). Ana then tries to resolve the syntactical problem and complete the clause by inserting the verb 'had' in the space between 'and' and the erasure on 'viveram felizes para sempre' (lived happily ever after). Again, the problem becomes a graphic-spatial problem, because she cannot fit 'tinha' (had) in the space, and she abandons her intended syntactic correction. This is accompanied by the same kind of comment as in the previous episode: 'não dá' ('it doesn't fit.'). Once again, the graphical-spatial dimension over-rides the identified linguistic problem, indicating, both, the lack of knowledge of the student's graphic resources to solve the problem (for example, make an arrow indicating the entry of a new word in the middle of other words already written) and the low relevance of the syntactic problem for the construction of the ongoing manuscript.

## 5.0 DISCUSSION

To summarise, throughout the six textual production tasks, the students made 54 comments on the *written erasures* made. In this article, we have only been able to present a qualitative, microgenetic account of six of these erasures, representing the range of *erasures* made. Nevertheless, taken together, the quantitative and microgenetic analyses do reveal insights into the metalinguistic thinking and activity of newly literate writers that cannot be observed in the finished *school manuscript* given to the teacher.

### 5.1 The prevalence of graphic-spatial attention in these writers

As Figure 1 shows, comments which refer to the graphic-spatial aspects of writing composition are strongly dominant in the dataset. On one hand, this may not be surprising as these occurrences relate to the teaching content in which the students are learning. As newly-literate writers, they are still learning about the graphic forms of cursive letters, and how they are shaped: their transcriptional skills in relation to the alphabet are not yet automatised, and more cognitive focus is attributed to this than is likely to be the case later in their writing development when these processes are more automatized. Ana and Luma are still thinking about the relationships between letters, sounds and words (Cremin and Myhill, 2012, p. 15), and as part of this, they are attentive to the visual appearance of their writing on the page (Kress, 1994; Blanche-Benveniste, 1997.) It is also the case that, even when the *textual object* which triggers a comment is about semantic focus (for example, adding the word “resting”) or a syntactic focus (for example, adding the verb 'had'), the students revert to making graphic-spatial comments concerning whether they can ‘fit’ in the amended text. This indicates that even if there are metalinguistic activities evident at a semantic or syntactic level, the graphic-spatial problem of fitting in the corrected text eventually takes primacy. In other words, appropriate solutions are abandoned due to the difficulty in manipulating procedures for *erasure*. From the point of view of the teacher's role in textual production tasks, it might be pertinent to give students information on how to add words to sentences already written in the current manuscript through using mid-line space or margins and arrows. It is noticeable how Ana and Luma preserve absolutely line-based left to right directionality, even when they make *written* erasures, and they do not yet understand how this can be disrupted in order to make revisions.

### 5.2 The limited attention to composition and meaning-making

The dominance of this focus on graphic-spatial aspects of writing, and indeed the fact that the other *written* erasures also tended towards attention to the transcriptional elements of writing (lexical and grammatical spelling; and syntactic corrections), means that there were very few *written erasures* or metalinguistic comments about the meaning being communicated in the narratives. No *erasures* and comments were categorized as pragmatic, concerned with making meaning. Indeed, the only textual problem identified was triggered by the teacher's direct intervention (see 4.2.5), where she seems to be inviting the girls to provide elaboration about the characters' behaviour. And even though Ana begins to respond to the teacher's prompt, in the end her concern becomes graphic-spatial, about how to squeeze in the changed word. As noted above, this preoccupation with the transcriptional and secretarial aspects of writing is wholly expected at this stage of writing development, and it is important not to ignore the significance of fluency in handwriting in supporting compositional skills in writing (Christensen, 2009; Graham, 2010). At the same time, it is important not to conceptualise this as a chronological process of mastering transcription before being able to attend to composition and meaning-making. Young writers are readers and tellers of stories, and development of meaning-making compositional skills can co-occur with development in handwriting fluency (Dyson, 2003). From a cognitive perspective, Berninger et al. remind us that '*in skilled writers, planning, translating and revising are mature processes that interact with one another. In beginning and developing writers, each of these processes is still developing*' (Bernminer et al, 1996, p.198). In other words, writers like Ana and Luma may not be able to switch attention whilst composing between orthographic or transcriptional concerns and concerns related to meaning-making in narrative. Ana's correction of *almoco* to *jantar* (*lunch* to *dinner*) may be a meaning-related intervention, but she does not articulate her thinking. Their focus is local, rather than global (Bereiter and Scardamalia, 1987). One implication of this analysis is that teachers might consider how to actively prompt and facilitate metalinguistic thinking about meaning and communication, perhaps through modelling their own thinking during composing; through joint composition; or through group or paired tasks which orientate attention to more global compositional aspects of story-making.

### 5.3 The metalinguistic capabilities of these newly-literate writers

Despite the graphic-spatial tendencies of these writers, the close analysis of the students' talk while composing does reveal the emergence of metalinguistic thinking across a range of metalinguistic categories:

- Ana and Luma compare the graphic form of the letter 'K' with the letters 'R' and 'H' (metagraphic knowledge).
- Ana has meta-graphical knowledge of the word 'correu' (ran), correcting (revising) what Luma wrote.
- Luma is aware of the problem of nominal agreement between 'as' (the) and 'viúvas' (widows) (grammatical meta-orthographic knowledge), reviewing what Ana wrote.
- Ana seeks to establish greater unity of meaning (coherence) by replacing 'almoço' (lunch) with the word 'jantar' (dinner), perhaps considering that the characters would go to a party (meta-semantic knowledge).
- Ana understood the teacher's question about the sentence 'eles ficaram em casa' (they stayed at home) and tried to add more information about what the characters were doing at home (metatextual knowledge).
- Even without the direct intervention of the teacher, Ana noted the absence of an essential word in the construction of the sentence "and had chocolate cake" (meta-syntactic knowledge).

To understand this better, we may need to look at the differences between the linguistic structures of comments and the metalinguistic activities that these structures indicate. For example, the difference between saying "Did you do the letter 's' here?" and "It's [the letter 'K'] similar to the 'R'.". In the first, the metalinguistic comparison between "as viuva" and "as viúvas" is made without verbalizing an argument that justifies the need for the letter 's'. The comment indicates an implicit knowledge of this nominal agreement relationship. In the second, the problem of the graphic form of the letter 'K' is solved by comparing it with other letters that have similar graphic forms. Here, the comment indicates that students have drawn similarities between the graphic forms of these letters to find the right solution. In this case, the verbalized metalinguistic activity is explicit. That is, the linguistic-enunciative structure of this form of verbalization seems to indicate more clearly the effected metalinguistic activity. Ana and Luma's focus on graphic-spatial issues is not simply a question of visual layout, what the text looks like: instead they are revealing a broad range of emerging metalinguistic thinking about both the challenges of transcription and orthography, and semantic and textual issues. This is an important aspect to be explored in future work.

### 5.4 The nature of dyadic dialogue in newly-literate writers

#### 5.4.1 *Hetero-evaluative and self-evaluative metalinguistic understanding*

The analysis of the dyadic dialogue also permits a consideration of what Ana and Luma commented on or *erased* in their own writing and their partner's writing. One tentative finding is the idea of hetero-evaluative and self-evaluative metalinguistic understanding, where hetero-evaluative refers to metalinguistic comments made by the dyad partner not the writer, and self-evaluative to comments made by the writer. Both the statistical and the qualitative analyses suggest that graphic-spatial problems may be more self-evaluative, whereas spelling may be more hetero-evaluative. Because the data presented here are drawn from two students only, this can only be a speculative comment, but nonetheless is one which merits further exploration and elaboration in larger samples.

#### 5.4.2 *Collaboration or co-location?*

As noted earlier, the collaborative writing context for the study was chosen because it facilitated metalinguistic talk between the two writers about their writing. Our focus is on the metalinguistic thinking and what it revealed about their understanding of revision, rather than an analysis of collaborative writing. The classroom activity of collaborative writing, where one child acted as scribe and the other as dictator enabled the capture of both Ana and Luma's *written erasures* and their comments on them. However, it is evident that the process of writing was rarely genuinely collaborative, with little sense of shared responsibility for creating a narrative, and little evidence of joint construction. Indeed, the video shows that although Ana and Luma were 'co-located' together, physically sitting next to each other, there were frequent occasions when the child not writing was not looking at the emerging text or was distracted by things happening elsewhere in the classroom. There were also occasions when the writer was making comments which were clearly to herself, rather than her partner, particularly in the verbalisation of the text *linearisation*. Rather than playing roles of scribe and dictator, it seems that Ana and Luma were more inclined to playing roles of composer and editor. Whilst this may be a natural consequence of their relative immaturity as writers, it may be possible for teaching interventions to establish a more collaborative, joint construction of texts.

## 6.0 CONCLUSION

The analyses presented here have offered a fine-grained, multimodal analysis of the genesis of six narratives by Ana and Luma, as they engage in their first attempts at writing a complete story, and making textual revisions. They have shown that graphic-spatial issues are prominent in the *written erasures* they make and the metalinguistic thinking that accompanies them; but at the same time, the analysis of Ana and Luma's dyadic dialogue indicates that their metalinguistic thinking crosses a broader range of categories, including meta-syntactic and meta-textual. Yet their actual erasures remain principally graphic-spatial. Very few of their erasures or metalinguistic comments related to the composition of the narrative being constructed, or to the meaning it communicated, as they tend to focus on aspects of their writing at a local, rather than a global level. This tendency in young writers to focus on the local rather than global is noted in cognitive research (Bereiter and Scardamalia, 1982; Berninger, Fuller and Whittaker, 1996) but it may be unwise to treat this as a deterministic trajectory of development. Sociocultural research draws attention to the concurrent development of transcription and composition: Haas Dyson (2009:242) outlines young writers' '*authorial thoughtfulness about their composing decisions*' and how through their narratives they both makes sense of, and recontextualise their childhood worlds. The pedagogical implications of these findings are twofold. Firstly, collaborative contexts for writing provide teachers with a window on children's metalinguistic thinking which cannot always be discerned from looking at the text alone, and thus listening to dyadic dialogue can inform pedagogic decision-making and feedback to the writers. Secondly, teachers might think more about how their tasks and interactions with newly-literate writers support children in thinking metalinguistically and verbalizing this authorial thoughtfulness about their stories, thus foregrounding the compositional aspect of writing narratives alongside the necessary development of transcriptional fluency.

The strength of this study is the qualitative, microgenetic and multimodal analysis of composition and textual revision as it occurs in real time for Ana and Luma. It allows the identification and analysis of *erasures* and comments which would not be visible to the teacher when he or she receives the finished manuscript, and illustrates that despite the focus on graphic-spatial issues in the actual *erasures*, metalinguistic understanding is developing in directions that move beyond the graphic-spatial. A limitation of this study is the two student sample which means it is hard to generalize from this data to a broader population, and it is not possible to discern how many of the patterns found reflect the particular competences, understandings and interests of these two girls. But there is a rich vein of research to be pursued from this study. Broadening the sample

size and tracking how child variables such as writing proficiency, reading history and language background influence either the *erasures* or the metalinguistic comments would extend the findings here. Likewise, studies which examine the dyadic dialogue in terms of self-evaluative and hetero-evaluative comments would reveal whether some aspects of revision seem to be harder to enact in one's own writing, than when looking at a peer's. Finally, there is a need for more research exploring pedagogic interventions which promote metalinguistic thinking about revision, and which encourage authorial attention to attend to the compositional and meaning-making aspects of text production alongside the natural emphasis on transcriptional fluency. From such lines of enquiry, we can develop stronger theoretical understanding of writing development in newly-literate writers, and as consequence we will be able to develop research-informed pedagogical guidelines to support the teaching of writing in the early school years.

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