

## **Dialogic literacy: talking, reading and writing among primary school children**

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## **Abstract**

This study investigates the interplay between talk, reading and writing as Mexican primary school children worked together, in small groups, on a psycholinguistic task that required them to read three related texts and write an integrative summary. The study was conducted in the context of an educational program called 'Learning Together' (LT), which uses collaborative learning to enhance the development of children's oracy and literacy. Analyses of children's dialogues using the Ethnography of Communication in combination with a novel 'Scheme for Educational Dialogue Analysis (SEDA)' (Hennessy et al., 2016), revealed important improvements in effective oral communication - and specifically a shift towards the use of dialogic styles of interaction - between the children who participated in the LT program (as compared to those who did not). These improvements were accompanied by significantly higher quality integrative summaries, not only when children worked in small groups but also individually. The latter results indicate appropriation of sophisticated literacy abilities by the children. Further analyses of the relations among talk, reading and writing suggest that these processes are interwoven through subtle intertextual relations and support each other in a dynamic and iterative manner. We discuss the theoretical, methodological and practical relevance of the study.

***Key words:* Dialogic interactions, reading comprehension, writing, literacy teaching and learning.**

## **1. Introduction**

The central purpose of this research was to analyse the interplay between talk, reading and writing as Mexican primary school children worked together, in small groups (triads), on a psycholinguistic task called the ‘Test of Textual Integration’ (TTI). This task required the children to write an integrative summary text that provided a synopsis of their joint understanding of three texts on a common theme. The texts that they had read represented different genres, so the children needed to extract and jointly co-construct meaning (Palincsar, 2003), understand different linguistic registers, determine the importance of the information that they had encountered and work it into a new text form. This included the transformation of direct speech (as presented in an interview) into reported speech. Additionally, they were tasked with finding an appropriate title for their summary piece, which would demonstrate their ability to generalise and synthesise the information. As a collaborative task this was complex, and the children’s ability to co-construct knowledge and produce a coherent synthesised summary piece of writing was highly dependent on their ability to talk and think together.

As part of their ongoing school activities, children participated in an educational program called ‘Learning Together’ (LT) (see Rojas-Drummond, Mazón, Littleton & Vélez, 2012), which provided the context and setting for the present study. The program centred on promoting collaborative learning and educationally productive dialogue. The latter entailed the use of dialogic styles of interaction, including Exploratory Talk (see Mercer & Littleton, 2007; Rojas-Drummond, Torreblanca, Pedraza, Vélez & Guzmán, 2013), to discuss ideas and issues jointly. At the same time, emphasis was placed on enhancing diverse functional literacy abilities, including those for comprehending and producing texts of different genres. These genres included narratives; journalistic texts (such as news reports, opinion articles and book and film reviews); as well as academic articles. The psycholinguistic task detailed

above (TTI) was undertaken by all participants (n = 120 children) as a pre- and post- test, at the beginning and end of the academic year. Macro analyses entailed comparisons of the performances of the experimental group of children who had engaged in the LT programme, with that of their control-group peers who only engaged in normal class routines in the pre- and post-tests. Rubrics for evaluating in detail the quality of the written summaries produced by each group were designed following the van Dijk & Kintsch (1983)'s influential 'situation model' of text comprehension. The academic outcomes of the project (macro analyses) have been reported elsewhere (Rojas-Drummond et al., 2012). This paper offers the opportunity for more fine-grained, close-up, micro-analyses of children's dialogues as they engaged in the pre- and post-tests, and the relations between these analyses and those of their written summaries.

For micro-analyses, the dialogues and texts produced by a randomly selected set of four 'focal triads' (two experimental and two control), as well as the interactions between these oral and written communicative processes, were studied in detail. The texts were analysed using the rubrics mentioned above. Analyses of the dialogues in turn were carried out using a combination of a well-established approach for investigating dialogue - the Ethnography of Communication (Hymes, 1972; Saville-Troike, 2003; see also Rojas-Drummond, Mazón, Fernández & Wegerif, 2006) - alongside a methodological tool called the 'Cam-UNAM Scheme for Educational Dialogue Analysis (SEDA) (Hennessy et al., 2016). The present report is one of the first to employ SEDA in an empirical study (see also Rojas-Drummond et al., 2016). Results illustrate SEDA's potential to account for dialogic interactions in a systematic, fine-grained and comprehensive fashion.

## 2. Antecedents

### 2.1 *Dialogue in Learning*

The study reported here adopts a sociocultural approach to understanding and investigating processes of learning and development, particularly in relation to oral and written communication. Studies which research language use in the classroom have typically focused on the quality of the interaction between teachers and students and among students working together, and highlight the potential for classroom talk as a powerful tool for learning (Howe, 2010; Mercer & Littleton, 2007; Rojas-Drummond & Mercer, 2003). The most effective and productive dialogue between peers (the focus of this study) is that which enables the speakers to move their thinking forward together, to ‘interthink’ (Littleton & Mercer, 2013) effectively, not bound by closed questioning, but with open and extended possibilities for reasoning and argumentation. Mercer, Wegerif & Dawes (1999) defined this ‘exploratory talk’ as:

...that in which partners engage critically but constructively with each other’s ideas. Statements and suggestions are sought and offered for joint consideration. These may be challenged and counter-challenged, but challenges are justified and alternative hypotheses are offered. In exploratory talk, knowledge is made publicly accountable and reasoning is visible in the talk. (p. 97)

However, in previous studies, Rojas-Drummond et al. (2006) found that within the classroom, opportunities for this very explicitly defined talk were task specific, and not necessarily afforded within more open-ended discursive talk tasks. These more fluid discussion opportunities would be typical of those found within literacy-based activities, which might necessarily involve a more interpretative stance and open-ended discussion. The researchers found that the children were able to adjust and use explicitly taught strategies for Exploratory Talk to the activity been carried out, even if it led to less defined and specific

outcomes, most notably in relation to making reasoning visible through explicit argument. The authors proposed a more encompassing mode of talk which they termed ‘co-constructive’ as a ‘single overarching framework’, that includes: “taking turns, asking for and providing opinions, generating alternatives, reformulating and elaborating on the information being considered, coordinating and negotiating perspectives and seeking agreements” (Rojas-Drummond et al., 2006, p. 92). This broader concept offers a more flexible consideration of the exploratory mode, and is particularly relevant here, where children’s dialogue is analysed as they engage in collaborative reading and writing tasks.

In current literature of communication in educational contexts, dialogic interactions have been found to enhance children’s development and learning (e.g. Littleton & Howe, 2010; Mercer & Littleton, 2007). Dialogic interactions harness the power of language to stimulate and extend students’ understanding, thinking and learning. These interactions are collective, reciprocal, supportive, cumulative and purposeful (Alexander, 2008). According to Hennessy et al. (2016), these forms of productive dialogue are further “open to new ideas and critically constructive, where negotiation of perspectives allows joint problem solving” (p. 3).

Dialogic interactions do not happen in a vacuum however, and from a sociocultural perspective, context is highly significant in understanding the dynamics of classroom talk. Hymes’ work on the Ethnography of Communication (1972) provides a useful frame in which to set any analysis of classroom interaction. He describes a hierarchy in which communicative acts are nested within the context of communicative events, and subsequently, these events are nested within communicative situations. Communicative acts (CA), or as Saville Troike (2003) describes, “single, interactional functions” (p. 24), form the smallest level of communication appropriate for analysis, within the Ethnography of Communication framework and are appropriate for us to consider as we analyse the dialogic

interactions of children while they engage in a literacy task. For Hymes, the level of ‘communicative event’ (CE) includes consideration of participants, their goals, their task, and their topic. Saville Troike (2003) explains that, “an event terminates whenever there is a change in the major participants, their role-relationships, or the focus of attention” (p. 23). She also adds that changes in ‘event’ might be marked by a period of silence, or perhaps body position, or interrupted by another event (such as a teacher moving in to talk with a group who are already engaged in a specific task). Overarching the events and acts is the communicative situation (CS) itself. Consideration of this macro level highlights the importance of context and how this influences, enables or constrains the dialogic interactions happening within it (Alexander, 2008). We use this hierarchy to support our analysis of classroom interactions, focusing particularly on the micro (CA) and meso (CE) levels. Alongside the employment of tools from the Ethnography of Communication, in the present study we used ‘The Cam-UNAM Scheme for Educational Dialogue Analysis’ (SEDA) (Hennessy et al., 2016) in order to carry out more fine-grained analysis, specifically of Communicative Acts (CA). This allowed us to identify particular CA within broader communicative exchanges that have a dialogic quality, according to the 33 codes that comprise SEDA. These codes are further organised into eight ‘clusters’. Appendix A presents a condensed version of SEDA, including its eight clusters, as well as the specific CA which comprise each cluster. (For consulting the full version of SEDA, see <http://tinyurl.com/BAdialogue>).

## *2.2 Dialogic Literacy*

Sociocultural approaches to literacy emphasize its fluid and relational nature. For example, Hamilton and Barton (2001) argue that “literacy competence and need cannot be understood in terms of absolute levels of skill but are relational concepts, defined by the social and communicative practices with which individuals engage in the various domains of

their life world” (p. 217). Heath (1982) argues that speech events may describe, repeat, reinforce, expand, frame, or contradict written materials, “and participants must learn whether the oral or written mode takes precedence in literacy events” (p. 83). Seen from this perspective, literacy practices, including reading and writing, are not solitary activities, even if they are undertaken by one person. Thus, a sociocultural perspective recognizes that literacy practices are embedded in a complex social world, where intertextual echoes of other voices are evident even when the texts are read by an individual or created by a lone writer (Bakhtin, 1981; Cairney 1990; Maybin, 2003). The collaborative writing task included in this study made the intertextual relations between talking, reading and writing explicit as the task necessitated comprehension, discussion and then the production of texts, with children thinking together for a common purpose. Literacy within this context is thus construed as being dialogic, with ‘dialogic literacy’ entailing a consideration and detailed analysis of the nature of the intertextual relations which take place among talking, reading and writing.

### *2.3 The construction of meaning from text*

Researchers of reading comprehension highlight summary and synthesis as key strategies for making sense of texts (Palincsar & Brown, 1984; Pressley, 2006). In order to do so, readers must ‘determine the importance’ of the information that they read, whilst connecting it to their existing knowledge of the world, their experiences and their knowledge of texts (Anderson & Pearson, 1984). van Dijk & Kintsch (1983) bring these strategies together with their influential ‘situation model’ of the reading process. They describe how readers create working models of texts at both superstructure (text organisation) and macrostructure (essence of meaning and global coherence of the whole text) levels. At the same time, the process of synthesis is achieved essentially through the application of four ‘macrostrategies’ to create these structures. Firstly, through ‘suppression’, readers select relevant information, while eliminating redundant or superfluous ideas within the text.



Palincsar and Brown (1984) highlight the challenge of directing attention away from the ‘trivia’ to ‘major content’ and Pressley (2006) also argues that struggling readers are unable to do this effectively. Secondly, through ‘generalization’, readers create condensed categories of a higher order by linking together relevant pieces of information into more general themes; and thirdly, through ‘construction’ and ‘integration’, they create new meanings through inference at a more global level, to make sense of the text as a whole. In the present study we used this ‘situation model’ to develop rubrics for analysing the quality of children’s written summaries. This model also inspired the design of the LT programme in relation to the types of strategies to support and teach the children so they could comprehend texts and write high quality summaries (see Section 3. Method).

Earlier studies had shown that, in Mexican children, the ability to produce macrostructures develops towards the end of primary school (from 10 to 12 years old), but that state-run schools do not explicitly teach the children how to use macrostrategies (Mercado, Rojas-Drummond, Weber, Mercer & Huerta, 1998; Rojas-Drummond, Hernández, Vélez & Villagrán, 1998). In addition, our previously reported work (see Rojas-Drummond et al., 2012) showed the positive impact of the LT program on the ability of children to create summaries of the texts that they had read, synthesising information and generalizing across different text genres. This was true for their work as individuals as well as when they collaborated in groups. The findings suggest that the intervention program enabled the children to transfer the text comprehension strategies they had been taught, and allowed them to successfully complete a highly complex text task, not only collaboratively, but also individually, that is, in a more autonomous fashion. This current investigation now extends the analytic focus of that earlier work, to explore in detail the quality of the dialogues among the children working together to produce their integrative summaries, as well as the nature of the intertextual relations between talk, reading and writing.

## *2.4. The context of the study*

### *2.4.1 Teaching of communication abilities as part of regular Mexican classroom practices*

The national Mexican curriculum divides teaching into ‘formative fields’. One of them is ‘Language and Communication’, which includes the subject called ‘Spanish’. ‘Spanish’ involves teaching of how the Spanish language works (grammar, spelling, orthography, etc), as well as communication abilities related to oracy and literacy. In spite of the fact that the pedagogic proposals contained in the curriculum are purported to be innovative, a comprehensive report prepared by the National Institute of Evaluation (INEE, 2006), showed that, in general, teachers tend to promote literacy, including reading comprehension and writing, mainly through rote learning exercises, and somewhat meaningless tasks. The use of written language is not functional in the sense that the activities are carried out for the sake of completing the requisites established in the official textbooks corresponding to ‘Spanish’, rather than as more authentic communicative social practices. The activities contained in the Spanish textbooks are of a traditional nature, and teacher’s practices tend to follow closely these prescribed activities. Our line of research in Mexican primary classrooms for over two decades confirm the ingrained nature of these traditional practices (see Rojas-Drummond, 2000; Rojas-Drummond et al, 2016; Rojas-Drummond et al, 2012). These practices reflect the general way the control groups worked throughout the school year.

### *2.4.2 The Learning Together Programme*

For the experimental condition, besides attending their regular classes, children participated in the LT programme during school hours. The program was implemented throughout the school year and consisted of a series of lessons. For each lesson, one teacher and her students came to the experimental setting at a time (two groups in total). During each lesson, the group teacher was accompanied by one or two researchers, who acted as assistants. The students, supported by the adults, were organized in triads so they could

participate in diverse collaborative activities designed to enhance their oral and written communication abilities. In the initial sessions children were encouraged to work collaboratively using 'Exploratory Talk'. In consecutive sessions children applied these abilities to carry out activities involving functional uses of oral and written language, including comprehension and production of expository texts. These activities were organized around a collaborative research project where triads of children selected a topic of their choice, and subsequently read relevant information from printed and electronic sources. They also summarised and integrated the information gathered to produce a text in the form of an academic report, which was later published in a popular magazine. Adults explicitly promoted the use of relevant strategies for comprehending and producing texts. From the written academic reports, children created an illustrated conference presentation using Powerpoint. All these products were presented at the end of the academic year in a cultural fair with the school and local community as interlocutors of their presentations. This rendered the use of language and literacy as meaningful and functional social practices, given that the magazines were published and disseminated, and the conferences were delivered to a real audience.

### **3. Method**

#### *3.1. Participants*

The study was undertaken with 6th grade children (11 - 12 y.o.) from two state-run primary schools, equivalent in socioeconomic status and degree of schooling of parents, both located in the south of Mexico City. Children from School 1 participated in the LT program during school hours (experimental group, n = 60), while children from School 2 continued with their regular classes (control group, n = 60). For the macro analyses already reported in Rojas-Drummond et al. (2012), data was collected from the total sample of 120 children. For

carrying out the micro analyses to be reported here, four ‘focal triads’ were randomly selected (half from the experimental and half from the control groups).

### 3.2. *Materials*

At the beginning and end of the academic year, the Test of Textual Integration (TTI) was administered to the entire sample of 120 children, organized into 40 triads<sup>1</sup>. The TTI was administered in the children’s regular classrooms, one triad at a time, to enable their interactions to be video-recorded. The test consisted of three short ‘genuine’ texts (notes), which dealt with the same topic (the healing properties of dolphins). These were obtained respectively from an encyclopaedia entry (note 1), a newspaper report (note 2), and a magazine (note 3). (See complete test in Rojas-Drummond et al., 2012). The triads of children were required to read the three texts and discuss their content. They were also asked to write an integrated summary of the three texts they had read, and to include an original title. The test was designed explicitly to assess those processes that van Dijk’s & Kintsch’s model highlight as essential for reading comprehension. For this reason, it is assumed to be valid for this purpose. At the same time, we have used this and other related tests widely in previous research, and in general we have obtained high indices of inter-observer reliability (between 86 and 94%) (see Rojas-Drummond et al., 2006).

### 3.3. *Procedures*

#### 3.3.1 Intervention and data collection

The four ‘focal triads’ interactions were videotaped as they engaged with the TTI during the pre- and post-tests. Subsequently, the dialogues of each triad were transcribed *verbatim*, using a modified version of established procedures proposed by Mercer (2000).

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<sup>1</sup> The same version of the TTI was used as pre- and post-test. This was considered necessary so as to be able to compare the children’s dialogues and summaries. Although it could be argued that there might be a learning effect by using the same test in both occasions, there was a gap of nine months between administration of pre- vs. post-test. Furthermore, as will be shown under ‘Results’, in contrast to the Experimental Group, the Control Group did not show any improvement in achievement between tests.

Transcripts were accompanied by detailed descriptions of the relevant context. This modified version, including the specific notation system used in the present study, is described in Appendix B.

For the experimental condition, children participated in the LT program during school hours (as described in Section 2.4.2). The program took place over seven months and included 18 lessons of 90-minutes each. In contrast, for the control condition, children simply followed their regular classroom activities during the school hours throughout the academic year (as described under Section 2.4.1).

### 3.3.2 Analyses of data

The transcripts of the conversations of the four ‘focal triads’ while they were jointly constructing their summary were first analysed qualitatively drawing on the Ethnography of Communication, according to the goal(s) being pursued, in terms of the nested categories of communicative situations (CS), events (CE) and acts (CA) (Hymes, 1972; Saville-Troike, 2003). In addition, the CA were qualified at a more fine-grained, micro level, using SEDA, so as to determine which of these CA had a dialogic nature. Further quantification included the use of some nonparametric statistics (for a detailed description of procedures of analysis using these two tools in combination, see Hennessy et al., 2016).

Procedures for analysing the written summaries produced by the children were reported and illustrated in detail in Rojas-Drummond et al. (2012). Briefly, the quality of the summaries produced by the students was evaluated using van Dijk & Kintsch's (1983) strategic model. For making these evaluations, four expert readers first carried out the task independently, and their corresponding written summaries were analysed using propositional analysis. This procedure consists of identifying all the ‘propositions’ contained in a text, as well as their semantic relations. A ‘proposition’ is the smallest semantic unit of analysis of a text, and is defined as a ‘predicate plus one or more arguments’. A proposition makes

reference to a state, an event or an action, and represents a value of truth in relation to a real or imaginary world (see van Dijk, 1997). The common semantic characteristics of the four summaries were taken as a model of an ‘ideal’ macrostructure, resulting from summarizing the three original texts.

Secondly, a rubric for analysing the children’s written summaries was produced using the model. This included four main indicators, which were each assigned a maximum weighted, partial score, as follows: a) Quality of Title (2 points); b) Quality of the Main Ideas produced (3 points); c) Quality of the Local and Global Organisation of the Text (2 points); and d) Degree of Sophistication of the Macrostrategies used to produce the summary: Suppression, Generalization, Construction and Integration (called ‘Level of Expression’) (3 points). The sum of these four partial scores resulted in a global, total score (maximum = 10 points). Appendix C presents the ‘Rubric for Analysing Written Summaries’.

Thirdly, two researchers, working independently, evaluated each summary produced by the children and assigned the four partial scores to each summary. They then added them up to produce the global score. As part of these analyses, they compared the three original texts of the initial test with the summary produced by the children. This allowed them to identify the information that was copied *verbatim* versus transformed from the original texts. Inter-observer reliability ranged between 84 and 90 %.

#### **4. Results**

We first present results obtained after analysing qualitatively and quantitatively several indicators of interest, in relation to the dialogues produced by the three participants of each of the four ‘focal triads’ in each test. Secondly, we relate these data to the partial and total scores obtained by each ‘focal triad’ in their respective written summaries. Thirdly, by means of exemplification of the differences in the dialogues and written summaries produced by the experimental and control triads in each test, and due to space limitations, we present a

more detailed, fine-grained analysis of those differences for only two of the four ‘focal triads’ (Experimental Triad 1 and Control Triad 1). Data initially focuses on comparing, for each triad, segments of dialogues of selected CE which are somewhat equivalent in the pre- vs. the post-test, and their respective CA. These data are then related to the partial and total scores obtained by each of these two triads in their written summaries for each test. Lastly, results of the micro-analyses presented here are related to those for the macro-analyses previously reported in Rojas-Drummond et al. (2012), in order to look for consistency between these two sets of data. In order to facilitate understanding of results, an overview of the analyses reported is presented in Table 1.

---- Insert Table 1 about here ---

#### *4.1 Overview of results*

##### *4.1.1 Oral communication*

In order to establish the effects of LT in children’s oral communication abilities, we analysed the dialogues produced by each of the four ‘focal triads’ while completing the TTI. A comparison between the total number of turns produced by the two control and two experimental triads in the pre- vs post- test showed that all triads displayed a somewhat similar amount of turns during the pre-test (Control Triad 1 = 9; Control Triad 2 = 14; Experimental Triad 1 = 5; Experimental Triad 2 = 11). During the post-test, the number of turns for Control Triad 1 increased by a small degree (from 9 to 23 turns), while this pattern was reversed for Control Triad 2 (from 14 to 4). In contrast, both experimental triads increased substantially in the number of turns produced between tests (from 5 to 115 turns in Experimental Triad 1, and from 11 to 71 turns in Experimental Triad 2).

These patterns indicate that, after participating in the LT programme, children in the experimental group spoke more extensively while engaged in the test, in comparison to children in the control group. As will be shown below, results using The Ethnography of

Communication and SEDA revealed that these changes were not only quantitative but also qualitative.

Table 2 presents results of applying the Ethnography of Communication in combination with SEDA to the dialogues of each triad in each test. The data reported corresponds to the frequencies obtained for each category of the Ethnography of Communication (CS, CE and CA), as well as the types of CA and clusters represented, according to SEDA.

----- Insert Table 2 about here -----

The CS for all tests corresponds to the context of the administration of the TTI, so this situation remained constant for all triads and tests. As can be seen, there were no apparent changes in the frequency of CE and CA for the control triads between tests. In contrast, the frequency of CE and CA increased importantly for the experimental triads between the pre- vs. the post-test. Furthermore, for these latter triads, there was a wider variety of CA and clusters represented in the post-test in comparison to the pre-test. For each CS, the CE were further identified and labelled, and SEDA was used to qualify CA within each CE (see Appendix A). Tables 3 and 4 present the distribution of CA within CE for the two control triads in the pre- and post-test. Tables 5 and 6 in turn present the equivalent data for the two experimental triads.

----- Insert Table 3 about here -----

----- Insert Table 4 about here -----

----- Insert Table 5 about here -----

----- Insert Table 6 about here -----

As shown in the previous set of tables, the CE generally correspond to the activities that the triads engaged in while solving the respective test. These CE include reading, highlighting information and writing a summary, in some cases after discussing what to write



(although the presence, frequency and order of these CE vary for each triad and each test). In the pre-test, all four triads displayed from two to four of these CE for solving the TTI, and control triads maintained a fairly similar pattern in the number and distribution of CE between tests (from 2 to 3 in Control Triad 1, and from 3 to 1 in Control Triad 2). In contrast, Tables 5 and 6 evidence meaningful changes in the structure, frequency and nature of the activities carried out by the experimental triads between the pre and post-tests. The number of CE increased in both triads (from 3 to 9 for Experimental Triad 1, and from 4 to 7 in Experimental Triad 2). Furthermore, analysis of the nature of the CE highlighted some interesting differences for the experimental triads between the tests. In the pre-test, they assigned the different texts to individuals, who then selected some parts indiscriminately and copied them verbatim. However, in the post-test, the children worked together to highlight key parts and summarise each text in turn, then amalgamated the information to create their summary.

Tables 2-6 show that, in the pre-test, all triads present low frequencies of CA (less than 5). For the control triads these CA pertained to clusters I- 'Invite', E- 'Express ideas', G- 'Guide' and B- 'Build on', whereas for the experimental triads they represent clusters I, E and G only. For the control triads, this pattern remained similar between the pre- and post-test (except that P- 'Positioning' is introduced but G disappears). In contrast, for the experimental triads, a greater number and variety of CA was displayed in the post-test, in comparison to the pre-test. This greater variety of CA introduced new clusters in the post-tests that were not present in the pre-tests, (namely B- 'Build on', P- 'Positioning', R- 'Reasoning', RD- 'Reflect on dialogue' and C- 'Connect'); thus, all 8 clusters from SEDA were represented in the post-test, (in comparison with only 3 in the pre-test). These emerging patterns reflect in turn that the triads, while solving the post-test, interacted by using new CA such as: build on/clarify others contributions (B1), clarify/elaborate own contribution (B2); synthesise ideas

(P1), propose resolution (P3), challenge viewpoint (P5), state (dis)agreement/ position (P6); explain or justify own contribution (R2); reflect on learning purpose, value, outcome (RD2); and refer back (C1). At the same time, CA from clusters E- 'Express ideas' and G- 'Guide' showed higher frequencies and greater variety in the post-test than in the pre-test. These include: invite opinions, beliefs, ideas (E1), and make relevant contribution (E2), from cluster E; as well as propose action or inquiry activity (G2), and focusing (G5), from cluster G.

Taken together, the above data suggest that the changes observed in the dialogues of the experimental triads between tests, in comparison with those for the control triads, were not only quantitative but also qualitative. Analyses of the written summaries of the control and experimental triads between tests showed similar tendencies to those for oral communication, as will be shown below.

#### 4.1.2 Written communication

Regarding the written summaries, we analysed the total and partial scores of the two control vs. the two experimental 'focal triads' between tests. Figure 1 presents a comparison of the total scores obtained by each triad for each test. All triads during the pre-test obtained low scores (1.5 or less, out of 10 points). In the post-test, the control triads' scores remained very similar (2 or less). In contrast, the experimental triads showed an important improvement in their scores between tests (Experimental Triad 1 - from 1.5 to 10; Experimental Triad 2 - from 1 to 7).

----- Insert Figure 1 about here -----

Table 7 shows the partial scores obtained by each triad in the pre- and post-test of the TTI. As can be seen, the control triads' scores remained low throughout the school year in the four indicators evaluated, while experimental triads exhibited a substantial improvement in all these indicators between tests.

----- Insert Table 7 about here -----

In summary, the data presented above for oral and written communication suggest that the experimental triads, in comparison with the control, used dialogic styles of interaction as a result of their participation in LT. These latter gains were congruent with those exhibited by the experimental triads with respect to the improvement in the quality of their written summaries between the pre- and post-tests.

#### *4.2 Illustration of oral communication and written summaries*

In order to illustrate the above data in more detail, this section presents examples of dialogues of equivalent CE produced by Control Triad 1 and Experimental Triad 1 in the pre- vs. the post-tests. These CE were coded using SEDA. For each triad, we also present the written summaries they produced in each test. (All texts were translated from Spanish).

##### *4.2.2 Control Triad 1*

###### *Oral communication*

To exemplify the differences in the dialogues of the children from Control Triad 1 between tests, we present two equivalent Communicative Events (CE): CE 2 ‘Writing summary’ from the pre-test (in Table 8) and CE 3 ‘Reading and writing summary text 3’ from the post-test (in Table 9). In these CE, the children read the texts and wrote their summary (to locate these two CE within the dialogue, see Table 3).

----- Insert Table 8 about here -----

----- Insert Table 9 about here -----

When comparing the dialogues of Table 8 and Table 9, we can observe that there is little difference in the way the triad approached the task in the pre- vs. post-test: children read the three texts, selected some parts and copied them. In terms of the number of turns, both excerpts are quite similar (8 in the pre-test and 10 in the post-test). In addition, there are few instances of dialogic Communicative Acts (CA) in either test (6 from 4 clusters in the pre-test and only 3 from 2 clusters in the post-test).

During the CE from the pre-test, the control children began by talking about how to approach the task (G2: lines 5 and 6) and then clarified some punctuation and spelling issues (E2: line 7; I6: line 9). Finally, Diana dictated some parts of the texts to René and he wrote them down (B2: lines 10 and 12). In general, the children solved the task mainly by distributing the activities (dictating and writing) without much collaboration or sharing of ideas. It is worth noting that during the pre-test, one of the children (Hugo) did not participate verbally.

The triad's interaction during CE 3 in the post-test was similar to that of the pre-test. In the first three turns the children began by reading parts of the third text. In turn 18 Diana posed a question about the title for their summary (E1); followed by a suggestion by René to put 'Fungy' as a title in turn 19 (E2). In turn 20 Hugo made a comment about Fungy being a dog, and René clarified in turn 21 (B1) that "it is a dolphin". They finalised their work by writing down the title.

In general, both segments showed little evidence of collaboration. In the pre-test, there was merely a division of the tasks. In the post-test, while Hugo and Rene commented about the main character of two of the texts (Fungy), Diana selected some information from the third text and wrote it down. In both segments, children mostly copied parts of the texts, but with little evidence of being strategic in selecting main ideas.

#### Written communication

To illustrate children's written communication, we next present the summaries produced by Control Triad 1 in the pre-test (in Table 10) and in the post-test (in Table 11).

----- Insert Table 10 about here -----

In relation to the first indicator (Title), in the pre-test the Control Triad 1 did not add any title to their summary, resulting in a score of 0. Regarding the second indicator (Main Ideas), the children copied 3 of the main ideas from the original texts; this resulted in a score of 1.5.

In relation to the third indicator (Organisation), students mainly copied parts of the information provided in each text, however ideas were not connected. In addition, some of these ideas were incomplete or the sentences they copied were unfinished (see lines 2 and 3). The result was a text without local nor global coherence, which resulted in a score of 0.0. Lastly, in relation to the fourth indicator (Level of Expression), children mostly copied parts of the texts in an indiscriminate way. This style was not efficient for producing their summary, particularly when they had to summarise the dialogue from the interview, because that required them to change direct speech to reported speech (see lines 3-6). The latter transformation was needed to homogenise this part of the text with the rest, (which was written in reported speech). This added to the lack of global coherence of the overall summary. This resulted in a score of 0. When adding each partial score, the summary was assigned a total score of 1.5 /10.0.

By way of comparison, Table 11 shows the summary created by the Control Triad 1 in the post-test.

----- Insert Table 11 about here -----

In relation to the first indicator (Title), in the post-test the triad added a title which only mentioned the referent of the original texts ('Fungy'), resulting in a score of 1. Regarding the second indicator (Main Ideas), the children copied 2 of the main ideas from the original texts; this resulted in a score of 1. In relation to the third indicator (Organisation), students mainly copied parts of the information provided in each text, however ideas were not connected. In addition, some of these ideas were incomplete or the sentences they copied were unfinished (see lines 2-7). The result was a text with neither local nor global coherence, thus obtaining a score of 0.0. Regarding the fourth indicator (Level of Expression), the children used indiscriminate copy to produce their summary, and therefore the author's intention and meaning were lost. This problem further added to the lack of global coherence

of the overall summary, which resulted in a score of 0.0. When adding each partial score, the summary was assigned a total score of 2 /10.0.

In synthesis, comparisons between the texts produced by Control Triad 1 during the pre- vs. the post-test revealed no improvement in the children's ability to synthesise information and generate a written summary (the triad obtained a score of 1.5 in the pre-test vs. 2 in the post-test, out of a total of 10).

#### 4.2.1 Experimental Triad 1

##### Oral communication

In order to compare the dialogues of the children from Experimental Triad 1 between tests, we next present two equivalent CE: CE 2 'Highlighting information' (in Table 12) from the pre-test and CE 4 'Reading and highlighting text 2' (in Table 13) from the post-test. In these CE the children took turns in reading segments of the texts, selected information that they considered relevant, and summarised it (to locate these two equivalent CE in the dialogue, see Table 5).

----- Insert Table 12 about here -----

----- Insert Table 13 about here -----

A comparison between the dialogues produced by Experimental Triad 1 in the pre- vs. the post-test makes evident the sharp difference between them, not only in terms of number of turns (3 in the pre-test vs. 17 in the post-test), but also in the quality of the talk used. In particular, in the pre-test only two CA could be found in Yoali's participation, where she proposes a way of solving the task (G2: Line 4) and makes the first suggestion of including important information (E2: Line 4). After indicating that each student should highlight the main ideas of a specific text and write it, we can observe a simple division of labour, where each child reads one of the notes from the test and gives an opinion on which part of the text is to be selected for writing the summary. Overall, the children carried out the activity mostly

individually, by first reading the corresponding note and then copying all or part of the text he or she had read. However, selection of information was mostly indiscriminate.

Despite the fact that the dialogue in the post-test corresponds to a similar type of CE as in the pre-test, that is, children were also reading and selecting information to include in their summary, in the post-test this event was composed of CA which were qualitatively different from those in the pre-test. For example, there were CA that implied asking for and providing opinions (E1: Lines 23, 26; E2: Lines 24, 27, 28, 41), building on or completing information from previous contributions (B1: Lines 30, 31, 33-35) and proposing a resolution for the task at hand (P3: Line 39). Interestingly, a CA that involves higher reasoning (RD2: Line 25) was observed in Lorena's utterance when she seemed to notice that, to create their summary, they needed to go beyond and transform the information given in the original texts, and thus asked the researcher whether they could 'construct'. In addition, this contribution had a linking aspect to the LT programme (C1: Line 25), as she referred back to a sophisticated summarization strategy ('construction of information') that was promoted by the programme. The children attempted to construct their summary by inferring information not included in the original texts through a chain of acts of joint elaboration, which suggests collaboration and inter-subjectivity among the participants. Also, there was a change in the type of strategies used to create their summary, from indiscriminate copy in the pre-test, to paraphrasing, suppression and construction in the post-test.

The differences described above indicate a shift from a more individualistic style of participation in the pre-test, where turns represented a mere division of tasks, towards a more collaborative style of interaction in the post-test, where children coordinated efforts and negotiated perspectives to create their summary jointly. This latter collaborative style was accompanied by the use of co-constructive talk by the children, which is more sophisticated and dialogic in nature than the one the children used in the pre-test.

## Written communication

In this section we present the summaries created by Experimental Triad 1 in the pre-test (in Table 14) and in the post- test (in Table 15).

----- Insert Table 14 about here -----

In relation to the first indicator (Title), in the pre-test the triad did not add any title to their summary in spite of being asked to do so. This resulted in a score of 0. Regarding the second indicator (Main Ideas), after contrasting the ideas present in the original texts with those in the pre-test presented in Table 14, we concluded that the children copied 3 of the main ideas from the original texts. This resulted in a score of 1.5. In relation to Organisation, students mainly copied parts of the information provided in each text; however ideas were not connected. In addition, some of these ideas were incomplete or the sentences they copied were unfinished (see lines 3-5). The result was a text with neither local nor global coherence, thus obtaining a score of 0.0. Regarding Level of Expression, children mainly copied parts of the original texts, while leaving out other remaining parts. However, copying was mostly indiscriminate (see lines 6-8). This resulted in a score of 0. When adding each partial score, the summary was assigned a total score of 1.5 /10.0.

By way of comparison, Table 15 shows the summary created by Triad 1 in the post-test.

----- Insert Table 15 about here -----

Regarding the first indicator, in the post-test children added a title to their summary which was relevant, informative and concise; this is because the title reflects the essence that can be abstracted from reading the three original texts. This resulted in a score of 2. In relation to the second indicator, in the post-test the children produced the six main ideas present in the original texts. This resulted in a score of 3.0. Regarding Organisation, the summary presented in Table 15 shows that the ideas in the text were organized and connected with linguistic markers (for example '*this* mammal', '*such is the case of*', '*this* child' and 'thanks to *this*'),



providing the text with local and global coherence. This resulted in a score of 2. Finally, in relation to Level of Expression, the students elaborated a coherent and integrated summary by taking into account the main ideas from the three original texts. This included inferring information not provided explicitly, as well as converting direct speech into reported speech (see lines 4 to 5). Construction was the most sophisticated macrostrategy children used to create their summary. This involved inferring an essential idea from the three texts in relation to the dolphin's central role in motivating the child to 'carry on with his therapies'. They therefore obtained a score of 3.0. Adding the four partial scores resulted in a total score of 10.0 /10.0.

In synthesis, comparisons between the texts children from Experimental Triad 1 created during the pre- vs. the post-test revealed a very substantial improvement in their quality. This is the case for the four indicators that were assessed (score of 1.5 in the pre-test vs. 10/10 in the post-test).

#### *4.3 Summary of comparisons of micro and macro-analyses*

Firstly, when looking at the results from the micro-analyses reported here for oral and written communication in conjunction, we can observe that the participants in the LT program (experimental 'focal triads') progressed significantly in the quality of their style of interaction and talk between the pre- and post-test, the latter being more dialogic in nature. This improvement was accompanied by an important increase in the quality of their written summaries in the post-test in comparison with the pre-test. In contrast, there were no evident changes in the control 'focal triads' between tests in either oral or written communication. Secondly, results for written communication for the whole sample of 120 children at a macro-level (reported in full in Rojas-Drummond et al., 2012) showed statistically significant differences in mean relative gains for both total and partial scores of the TTI (Title, Main Ideas, Organisation and Level of Expression), favouring the experimental group. These

differences indicated that the latter's summaries were of much better quality than those of the control group after they participated in the LT program. In addition, children showed similar improvements in all these measures when solving a parallel TTI individually. This suggested that children improved significantly in their capacity to produce high quality written summaries not only when working in small groups but also independently, that is, in an autonomous and self-regulated fashion.

Comparison of the above two sets of results confirmed that the performance of the four selected 'focal triads', as illustrated in the present study, was representative of the performance of the experimental and control triads in the pre- vs. the post-test of the TTI respectively, for the whole sample of 120 children, as reported previously. Thus, the micro-analyses presented here are validated by the macro-analyses previously reported by Rojas-Drummond et al. (2012).

## **5. Discussion**

The research set out to analyse the interplay of talk, reading and writing in a project which had concentrated on developing collaborative learning opportunities for children in literacy (the LT programme) and explicitly teaching them how to synthesise information to create summaries. The academic outcomes of the project are reported elsewhere (Rojas-Drummond et al., 2016; Rojas-Drummond et al., 2012). This paper is concerned with a micro analysis of both the processes and the outcomes of the pre- and post-test to explore how the children were using talk to work together as dialogic readers (Maine, 2015) and create a written outcome. The latter demonstrated their ability to utilise macrostrategies for synthesising information from texts (van Dijk & Kintsch, 1983). The conditions of the task itself allowed for reading, talking and writing to be analysed, with the use of Ethnography of Communication in combination with SEDA (Hennessy et al., 2016) to support the organisation of this analysis.

## 5.1 Reading

Authors focusing on the different strategies used by fluent readers to “simultaneously extract and construct information” from text (Snow & Sweet, 2003, p. 1) are also clear in their advocacy of the explicit teaching of how to engage with such strategies (Palincsar, 2003; Palincsar & Brown, 1984; Pressley, 2006). Pressley argues that a key difference between fluent and struggling readers is their ability to be able to determine the importance of the information that is presented, and this then affects their ability to create working summaries. The impact of not being able to efficiently determine the importance of information, or not to know how to use prior knowledge (Anderson & Pearson, 1984) is to significantly compromise the working ‘model’ of meaning that readers are creating as they progress through the text (van Dijk & Kintsch, 1983). This is evident in the transcripts of the test scenarios, but also in the written outcomes. With minimal guidance on how to work together to create effective summaries, the children largely copy sentences or phrases that they feel to be important, but show little understanding of how to allocate attention so that “the concentration can be focused on the major content at the expense of trivia” (Palincsar & Brown, 1984, p. 120). Thus, whilst they realise they must summarise, they do not effectively ‘suppress’ superfluous information, or synthesise their understanding. Crucially, they are then unable to generalise the information and construct coherent new meanings. This is seen most evidently in the pre- and post-test of the sample control triad and also the pre-test of the experimental triad. In these three written outcomes, the children are unable to generalise the ‘register’ of the source texts and use this to construct a summary. As a result, their writing switches between first and third person voice and is not coherent. They select some key sentences from the source texts to use, but are unable to transform them. Alternatively, in the experimental post-test, the coding of the transcript using SEDA highlights a reflective move by Lorena (line 25) where she asks if the triad are allowed to ‘construct’, ie, to use their own

words to make the summary. In this context, the children are able to appropriate a 'voice' for their summary. This transference of skills taught within the LT programme to the new context of the post-test, highlights the potential effect of a dialogic literacy approach to the teaching of reading comprehension strategies.

The lack of ability of the control triad (and pre-test experimental triad) to effectively generalise, construct and integrate, highlights a concern about the education of upper primary Mexican children, where poor reading comprehension is well reported in national and international comparison studies such as EXCALE (INEE, 2006) and PISA (2003; PISA, 2012). However, this is not just an issue relevant to Mexico. A focus in the USA on close reading of informational texts (Common Core State Standards Initiative, 2001), and a renewed focus on text comprehension in the UK (DFE, 2013), suggest these issues are keenly felt around the world. The LT program offers an opportunity for a way forward, demonstrating the importance of a dialogic approach to teaching and learning within a literacy curriculum that focuses on explicitly teaching reading comprehension strategies, including importantly macrostrategies (Palincsar, 2003; Pressley, 2006; van Dijk & Kintsch, 1983).

## **5.2 Writing**

The findings showed that the context of the pre- and post-tests offered a unique opportunity for analysing the subtle intertextual relations among talking, reading and writing, as the construction of a written summary necessitated the synthesis of information from three different text sources and a generalisation of linguistic register. As a co-constructive task, this writing needed to involve the children in inter-thinking processes to generate their summaries. The analysis of the transcripts using the Ethnography of Communication to structure and demarcate different episodes of talk into 'Communicative Events' (CE) was particularly useful in supporting the analysis of the process leading to the product of the

summaries. In the post-test of Experimental Triads 1 and 2, the children clearly engaged in ‘planful strategies’ (Palincsar, 2003) as they moved iteratively between reading, highlighting and writing. As the purpose and goal of their talk shifted, analysing their discussion at the CE level captured their structuring of the task. The increased number of CE in the two experimental groups can be seen as evidence of an enhanced and reflective engagement with the task of ‘summarising’. Conversely, as the children in the control triads were merely selecting and copying sentences or fragments of texts, their management of the task was geared only towards this general action so the CE only changed as they considered a new text to summarise.

The intertextual relationships between talking, reading and writing were particularly notable in the experimental group post-test transcripts, where their knowledge of the macrostrategy of ‘construction’ led the children to not only ask if they could re-work the language, but also to move between reading and constructing their written summary. Their integration of the different texts suggested that they were inferring beyond the information explicitly present in the texts they were reading and accessing their domain specific knowledge (Anderson & Pearson, 1984; Tarchi, 2015) to support their construction.

Interestingly, without clear understanding of how to approach the task, the children’s talk focused either on the procedural (in Experimental Triad 1 pre-test) or the secretarial (Control Triad 1 pre-test), suggesting that the children were concerned primarily with the ‘fairness’ of the task (making sure that they all get a turn) or a superficial focus on the technical aspects of writing (e.g. punctuation or spelling).

### **5.3 The interplay of talking, reading and writing**

At the level of ‘Communicative Act’ (CA), use of SEDA coding (Hennessy et al., 2016), demonstrated how the experimental triads ‘built on ideas’ as the children were able to ‘position and coordinate’ their views. Again, in the experimental triad post-test, the high

number of B1 (build on/ clarify other's contribution) coded utterances, highlighted the collaborative drafting of the written summary.

Conversely, an analysis of the uncoded utterances within the transcript and relatively low level contributions of the children in the control groups (shown as U or E2) highlighted that within the control groups, the interactions between children were at best 'cumulative' (Mercer, 2000), further highlighting the need to teach children how to work collaboratively to enhance their learning. Moreover, in Control Triad 1, the 'disputational' utterances of Hugo clearly disrupt the group as they struggle with the task (and could explain the particularly low score against the summary rubric). Whilst there is some discussion for the need for cumulative talk to serve a basic function to maintain social cohesion (Maine, 2015), it is the extra dimension of co-constructive talk that enables higher order thinking and in this particular context, the effective use of the macrostrategies. The literacy focus of the task illuminates the challenge of the definition of exploratory talk that necessitates making reasoning explicit in the form of arguments. This more open-ended task engagement makes the concept of co-constructive talk (Rojas Drummond et al., 2006) more salient, as its definition allows for a more flexible form of "taking turns, asking for and providing opinions, generating alternatives, reformulating perspectives and seeking agreements" (Rojas-Drummond et al., 2006, p. 92). By enabling this type of talk, the children in Experimental Triad 1 were able to co-construct their summaries, even though it should be noted that in the exemplar transcripts, the third child, Rodrigo, took a less active role.

The analyses also demonstrate how talk, reading and writing are interwoven. As they worked together to determine the importance of key sections of the texts they were reading, the dialogic readers (Maine, 2015) in the experimental group used their language to interthink and put their talk to work (Littleton & Mercer, 2013). In the Test of Textual Integration (TTI), arguably the written task was a demonstration of the children's reading strategies.

However, as they moved between the extraction of information and generation of new text, the analyses showed the boundaries between reading and writing becoming less clear, hence the notion of dialogic literacy as one in which reading, writing, talking and ‘inter-thinking’ are interwoven.

Where other writers have highlighted the importance of teaching reading comprehension strategies, this study demonstrates how, by enabling children to interact dialogically together, they are better able to utilise their knowledge of these strategies. This follows the pioneering work of Palincsar and Brown (1984), whose development of reciprocal reading groups focused on four key strategies to monitor and foster comprehension (Rojas-Drummond et al., 1998). The educational value of this particular task is that, whilst dialogically interacting with text to synthesise information, the children then needed to generalise and integrate the information that they had read from the three texts, and their own domain specific knowledge, to construct their writing. The specificities of the task meant that reading, writing and co-constructive talk were all analysed together. The task in this study necessitated a particular efferent stance (Rosenblatt, 1994) to reading and writing and one which is prioritised by the Common Core Standards Initiative in the USA (2001). However, further consideration needs to be given to engaging children in responses to quality literature and then creative writing, furthering the work of Barrs and Cork (2002) to examine how children can think and write creatively together (Rojas-Drummond, Albarrán & Littleton, 2008).

Analysing data across the literacy activities of talk, reading and writing is complex. However, the organisation of the transcribed data to note the subtle changes of direction regarding task and goal (using the Ethnography of Communication) highlighted the children’s ‘awareness of task’ (Maine, 2015) and their ability to manage it together. The use of the coding scheme to analyse the CA gave some useful insight into why the children in the

experimental groups might have been more successful than the control. It showed how these children were enabled to more effectively co-construct meanings by building on each other's ideas and thinking together.

## **6. Conclusion**

In spite of the advances described above, there is much work to be done to analyse further children's engagement in literacy activities. This needs to happen not only at a micro-analysis level, exploring the interactive and cognitive processes that children engage in as they talk together to make meaning from text (Maine, 2015), but also more globally, examining the Ethnography of Communication (Hymes, 1972; Saville-Troike, 2003) at its broadest, socio-cultural level. If learning is set within a socially mediated reality, then the powerful influences of context, historical, cultural and social, cannot be ignored (Daniels, 2001; Lave & Wenger, 1991; Rogoff, 1990; 2003; Rojas-Drummond et al., 2008; Rojas-Drummond, Littleton, Hernández, & Zúñiga, 2010; Rojas-Drummond et al., 2013). Therefore, harnessing these processes is vital for strengthening children's development and learning, as well as the quality of their education. In this context, the LT program represents an educational innovation that proved effective in promoting collaboration, as well as oral and written communication in primary school children. It has the potential to be adapted to different learning contexts with the aim of fostering students' effective social, cognitive and psycholinguistic repertoires. These, in turn, will be essential to enable children to participate competently in communities of practice well beyond formal schooling.



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*Table 1. Overview of data analyses reported under ‘Results’*

Results Section	Sample	Form of Communication	Qualitative Analysis	Quantitative Analysis
4.1. Overview of Results	Four Focal Triads: Two experimental and two control	Oral Communication	Identification of categories using the Ethnography of Communication (CS, CE, CA).  Qualification of CA using SEDA.	Quantification of total number of turns.  Frequencies of categories from the Ethnography of Communication (CS, CE, CA).  Frequencies of each type of CA according to SEDA.
		Written Communication	Use of a rubric for analysing written summaries in terms of: -Title -Main ideas -Organization of ideas -Level of expression	Quantification of the total and partial scores of the written summaries, assigned by using the rubric.
4.2. Illustration of oral communication and written summaries	Two Focal Triads: One experimental and one control	Oral Communication	Selection of equivalent CE in the pre- and post-tests.  Qualification of CA within each CE using SEDA.	Number of turns in the selected CE for each test.  Frequencies of each type of CA.
		Written Communication	Qualification of the written summaries using the rubric.	Quantification of total and partial scores of the written summaries.

*Table 2. Frequency of categories from the Ethnography of Communication (EoC) and SEDA for each triad in each test*



		Control				Experimental			
		Triad 1		Triad 2		Triad 1		Triad 2	
	Categories	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test
EoC	CS	1	1	1	1	1	1	1	1
	CE	2	3	3	1	3	9	4	7
	CA	6	10	9	13	5	73	5	39
SEDA	Types of CA represented	4	6	3	2	3	14	3	9
	Clusters represented	4	4	2	1	2	8	3	5

Table 3. Table 3. Distribution of CA within CE for Control Triad 1 in pre- and post -test

Control Triad 1						
Pre-test			Post-test			
CE	CA	f	CE	CA	f	
1.'Reading texts'		0	1. 'Reading and writing summary, text 1'	E2	1	
2. 'Writing summary'	I6	1	2. 'Reading and writing summary, text 2'	I4	1	
	B2	2		B1	2	
	E2	1		E2	2	
	G2	2		P6	1	
			3. 'Reading and writing summary, text 3'	B1	1	
				E1	1	
				E2	1	
Total frequency	CE = 2	CA = 6	CE = 3	CA = 10		

Table 4. Distribution of CA within CE for Control Triad 2 in pre- and post -test.

Control Triad 2					
Pre-test			Post-test		
CE	CA	F	CE	CA	F
1. 'Reading texts'		0	1. 'Reading and summarising'	E1	1
				E2	2
2. 'Highlighting information'	G2	2			
3. 'Writing summary'	E1	3			
	E2	1			
	G2	3			
Total frequency	CE = 3	CA = 9	CE = 1	CA = 3	

Table 5. Distribution of CA within CE for Experimental Triad 1 in pre- and post -test

Experimental Triad 1					
Pre-test			Post-test		
CE	CA	F	CE	CA	F
1. 'Reading texts'	G2	1	1. 'Reading text 1'	I6	1
				G2	1
2. 'Highlighting information'	E2	1	2. 'Highlighting information text 1'	E1	2
	G2	1		E2	3
3. 'Writing summary'	E1	1	3. 'Writing summary text 1'	B1	1
				B2	4
	G2	1		E2	1
				G2	1
			4. 'Reading and highlighting text 2'	B1	5
				E1	2
				E2	4
				P3	1
				RD2	1
				C1	1
			5. 'Writing summary text 2'	B1	4
				P6	1
			6. 'Reading text 3'	E1	1
				G2	1
			7. 'Highlighting information text 3'	R2	1
				B1	3
				E1	2
				E2	6
				P1	1
				P5	1
				P6	1
				C1	1
				G2	1
			8. 'Writing summary text 3'	B1	4
				B2	5
				E1	1
				E2	4
				P6	1
			9. 'Selecting a title for the summary'	I2	1
				B1	2
				E1	1
				E2	2
				P6	1
Total frequency	CE = 3	CA = 5	CE = 9	CA = 73	

Table 6. Distribution of CA within CE for Experimental Triad 2 in pre- and post -test

Experimental Triad 2				
Pre-test			Post-test	
CE	C A	F	CE	CA F
1. 'Reading texts'	G2	1	1. 'Reading instructions'	P6 1 G2 2
2. 'Writing summary text 1'	E2 2 G2 1		2. 'Reading text 1'	
3. 'Writing summary text 2'			3. 'Highlighting ideas and writing summary text 1'	B1 5 B2 1 E1 1 E2 3 G2 1 G5 3 P5 1
4. 'Writing summary text 3'	I6 1		4. 'Reading text 2'	G2 1
			5. 'Highlighting ideas and writing summary text 2'	I6 1 B1 5 B2 1 E1 3 E2 4
			6. 'Reading text 3'	G2 1
			7. 'Highlighting ideas and writing summary text 3'	I6 1 B2 3 E2 1
Total frequency	CE = 4	CA = 5	CE = 7	CA = 39

*Table 7. Partial scores in pre- and post-test for Experimental and Control ‘focal triads’ in the TTI*

Evaluation elements	Control				Experimental			
	Triad 1		Triad 2		Triad 1		Triad 2	
	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test
Title	0	1	0	.5	0	2	0	.5
Main Ideas	1.5	1	1	1	1.5	3	1	2.5
Organisation	0	0	.5	0	0	2	0	1
Level of Expression	0	0	0	0	0	3	0	3
TOTAL	1.5	2	1.5	1.5	1.5	10	1	7

Table 8. Control Triad 1: CE 2 ‘Writing summary’ in the pre-test

CE	Agent	Line	CONTROL TRIAD 1 - Hugo, Diana, René CS: TTI Pre-test	CA	
				Code one	Code two
CE2	Diana	4	“Write your summary” ( <i>she picks up the writing sheet and reads the instructions of the TTI</i> ) Which one? Fungy, oh, ok ( <i>she writes down</i> )	U	
	René	5	I’ll dictate to you ( <i>he picks up the sheet of the TTI and Diana starts writing</i> )	G2	
	Diana	6	You write down ( <i>addressing René, René picks up the answer sheet of the TTI</i> )	G2	
	Diana	7	Write the coma, ok? ( <i>addressing René</i> )	E2	
	Diana	8	Write the coma “Fungy perceives the mood of its masters” ( <i>she reads part of the second note</i> )	U <sup>2</sup>	
	René	9	With a b or with a v? ( <i>referring to the word ‘perceives’, which in Spanish is ‘percibe’</i> )	I6	
	Diana	10	With a b, here it is, you see? “and react to comfort them” ( <i>she reads part of the second note showing René the text and continues the dictation</i> )	B2	
	Diana	11	“An example of a child with cerebral palsy” ( <i>Diana dictates from the third note and René keeps writing. Diana laughs because she finds it difficult to pronounce a word</i> )	U	
	Diana	12	The child answered to the reporter that it was very hard for him to do his exercises but, with Fungy’s help, he was able to walk, and that’s it	B2	

<sup>2</sup>“U” means that the utterance was uncoded given that no CA from SEDA applied.

Table 9. Control Triad 1: CE 3 ‘Reading and writing summary text 3’ in the post-test

CE	Agent	Line	CONTROL TRIAD 1 - Hugo, Diana, René CS: TTI Post-test	CA	
				Code one	Code two
	Diana	13	“In the home of a child [...]” ( <i>reading aloud part of the third note</i> )	U	
	Rene	14	“Before swimming [...]” ( <i>continues reading aloud part of the third note</i> )	U	
	Diana	15	“How Fungy helped him?” ( <i>continues reading aloud part of the third note</i> )	U	
	Hugo	16	He slapped him and said to him either you walk or you walk ( <i>the children laugh, Diana writes</i> )	U	
	René	17	That’s not true, that’s not what it says	U	
CE3	Diana	18	That’s none of your business. What’s the title?	E1	
	René	19	Fungy, right?	E2	
	Hugo	20	Fungy is a dog	U	
	René	21	No, it is a dolphin named Fungy ( <i>Diana writes</i> ) And if I hit the microphone? ( <i>Hugo and René are playing</i> )	B1	
	Hugo	22	Write correctly ( <i>Hugo and René are trying to see what Diana is writing</i> )	U	
	René	23	The title	U	

*Table 10. Summary produced by Control Triad 1 in the pre-test*

Line	Summary produced by Control Triad 1 during pre-test (the transcription was translated from Spanish and respects the original text).
1	In the coasts of Ireland has been living for 14 years a dolphin named fungy. pets
2	perceive their master's mood and react to comfort them. A child with cerebral pausly
3	who swam with Fungy before swimming with fungy it was very hard for me to do my
4	exercises I never thought that an animal could understand what was happening to me
5	and when the dolphin pushed me I understood that it was up to me to do things in
6	order to achieve progress.
<u>Weighted scores:</u> $0+1.5+0+0=1.5$	



*Table 11. Summary produced by Control Triad 1 in the post-test*

Line      Summary produced by Control Triad 1 during post-test (the transcription was translated from Spanish and respects the original text).

---

1	Fungy
2	In the coasts of Ireland, a dolphin named Fungy has been living for 14 years this dolphin
3	is quite friendly and playful
4	It is difficult to explain how a dolphin that lives in the coasts of ireland
5	in the home of a child who swam with fungy we know that you swam with the dolphin
6	how did fungy help you I understood that it was up to me to do things in order to achieve
7	progress

---

| Weighted scores: 1+1+0+0=2 |  |

---

Table 12. Experimental Triad 1: CE 2 ‘Highlighting information’ in the pre-test

CE	Agent	Line	EXPERIMENTAL TRIAD 1 - Yoali, Lorena and Rodrigo CS: TTI Pre-test	CA	
				Code one	Code two
CE2	Yoali	4	Ok, let’s do this; let’s identify the most important information. From what I read, I will highlight what I think is the most important information. Over here ( <i>pointing at the second note</i> ), Lorena will highlight what she thinks is the most important information of what she reads, and over here ( <i>pointing at the third note</i> ) Rodrigo will highlight what he thinks is the most important information. Well, I say that it is “in the coast of Ireland [...]” up to here. “There are numerous stories [...]” ( <i>reads parts of the first note and highlights what she read</i> )	G2	E2
	Lorena	5	“The people studying the behaviour of animals [...]” ( <i>reads parts of the second note and highlights what she read</i> )	U	
	Rodrigo	6	My turn (...) ( <i>he reads quietly the third note and highlights the whole text</i> )	U	

Table 13. Experimental Triad 1: CE 4 'Reading and highlighting text 2' in the post-test

CE	Agent	Line	EXPERIMENTAL TRIAD 1 - Yoali, Lorena and Rodrigo CS: TTI Post-test	CA	
				Code one	Code two
CE4	Lorena	23	Well, now we continue, it says: "The people who [...]" ( <i>Lorena reads the complete first note</i> ) Well, let's see, what do you say? ( <i>talking to Rodrigo</i> )	E1	
	Rodrigo	24	That "The people who [...]" "There are many cases [...]" ( <i>reading parts of the second note</i> )	E2	
	Lorena	25	Can we construct? Can we write using other words that are not in here? ( <i>Lorena talks to the researcher, who says 'yes'</i> )	C1	RD2
	Lorena	26	Let's see, what do you say? ( <i>talking to Yoali</i> )	E1	
	Yoali	27	I say that the people who study the behaviour of animals, they say, they state that there are many cases of pets that... of pets who have a close relationship with their masters and become, uh... Who become capable to perceive, no ( <i>starts re-phrasing her ideas again</i> ); there are many cases, no, people who study the behaviour of animals state that there are many cases of pets that... of pets that, of pets, wait... I cannot see the text, who have a relationship with their masters and who become capable of perceiving the mood of their masters and react to console them ( <i>paraphrasing some parts of the second note</i> )	E2	
	Lorena	28	Given that he says that we can construct, we can put, hum, people, people who study the behaviour of animals state, no, oh! No, in this part there is nothing informative to highlight, hum	E2	
	Yoali	29	They state that ...	U	
	Lorena	30	We can put: people who study the behaviour of animals, of animals, they say that the pets with a close relationship	B1	
	Yoali	31	To their masters ( <i>completing the text proposed by Lorena</i> )	B1	
	Lorena	32	To their masters, yes, to their masters	U	
	Yoali	33	They become capable to perceive the mood ( <i>completing the text proposed by Lorena</i> )	B1	
	Lorena	34	They can, they can perceive their mood ( <i>paraphrasing the text proposed by Yoali</i> )	B1	
	Yoali	35	And become capable of consoling them ( <i>completing the text proposed by Lorena</i> ).	B1	
	Lorena	36	and to console them in this way, and to console them	U	
	Rodrigo	37	Yes	U	

---

Lorena 38 But what about the dolphin?

E2

---

Yoali 39 Well, up to here the summary is fine, isn't it?

P3

---

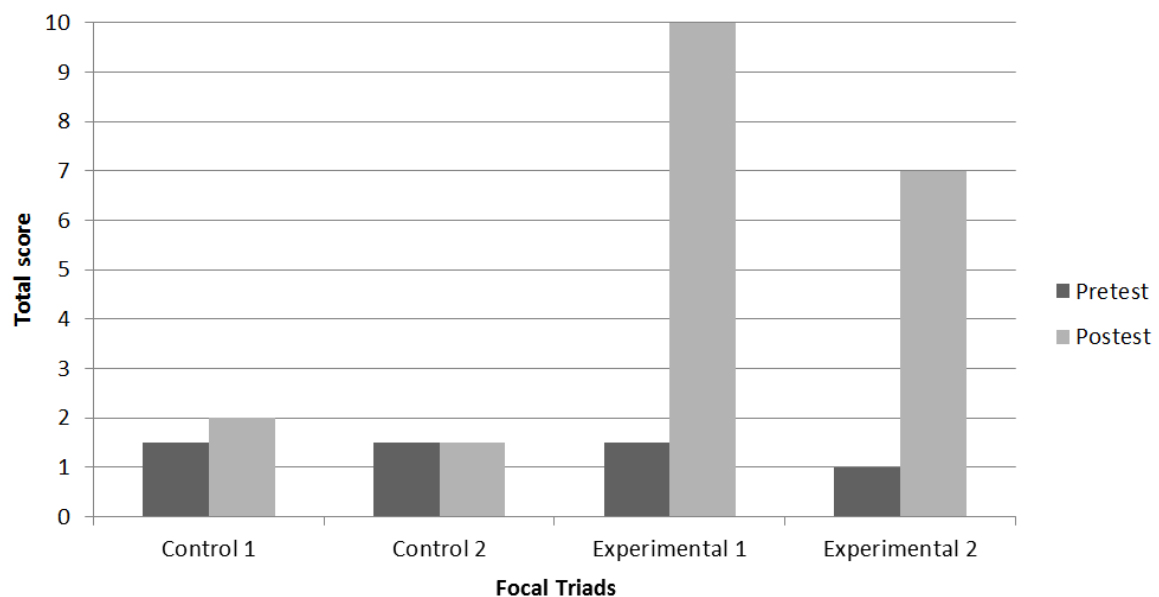
*Table 14. Summary produced by Experimental Triad 1 in the pre-test*

Line	Summary produced by Experimental Triad 1 during pre-test (the transcription was translated from Spanish and respects the original text).
1	In the coasts of ireland lives since 14 years ago a dolphin called funky. There are
2	numerous stories of persons who say that funky starts to make something when he
3	notices that somebody is sad or worried. However, it is difficult to explain how a
4	dolphin who lives in the coasts of ireland. We knew that you swam with the dolphin
5	Funky this made you feel very good. I didn't feel like playing, like learning, nor to talk
6	to my friends
<u>Weighted scores:</u> $0+1.5+0+0=1.5$	

*Table 15. Summary produced by Experimental Triad 1 in the post-test*

Line	Summary produced by Experimental Triad 1 during post-test (the transcription was translated from Spanish and respects the original text).
1	The benefits of the dolphins.
2	In the coasts of Ireland there is a dolphin that has the name of Fungy, this mammal is
3	very friendly and affable since he helps people to have more encouragement so that
4	they can go ahead. Such is the case of a child who suffers from cerebral palsy, this
5	child swam with Fungy and thanks to this he carried on with his therapies.
<u>Weighted scores:</u> 2+3+2+3=10	

*Figure 1. Total scores in pre- and post-tests for Control and Experimental 'focal triads' in the TTI*



## Appendix A

<b>I- Invite elaboration or reasoning</b>	
<b>I1</b>	Ask for explanation or justification of another's contribution
<b>I2</b>	Invite building on / elaboration / (dis)agreement / evaluation of another's contribution or view
<b>I3</b>	Invite possibility thinking based on another's contribution
<b>I4</b>	Ask for explanation or justification
<b>I5</b>	Invite possibility thinking or prediction
<b>I5</b>	Ask for elaboration or clarification

<b>E- Express or invite ideas</b>	
<b>E1</b>	Invite opinion / beliefs / ideas
<b>E2</b>	Make other relevant contribution

<b>RD- Reflect on dialogue or activity</b>	
<b>RD1</b>	Talk about talk
<b>RD2</b>	Reflect on learning process / purpose / value / outcome
<b>RD3</b>	Invite reflection about process / purpose / value / outcome of learning

<b>P- Positioning and coordination</b>	
<b>P1</b>	Synthesise ideas
<b>P2</b>	Evaluate alternative views
<b>P3</b>	Propose resolution
<b>P4</b>	Acknowledge shift of position
<b>P5</b>	Challenge viewpoint
<b>P6</b>	State (dis)agreement / position

<b>R- Make reasoning explicit</b>	
<b>R1</b>	Explain or justify another's contribution
<b>R2</b>	Explain or justify own contribution
<b>R3</b>	Speculate or predict on the basis of another's contribution
<b>R4</b>	Speculate or predict

<b>B- Build on ideas</b>	
<b>B1</b>	Build on / clarify others' contribution
<b>B2</b>	Clarify / elaborate own contribution

<b>C- Connect</b>	
<b>C1</b>	Refer back
<b>C2</b>	Make learning trajectory explicit
<b>C3</b>	Link learning to wider contexts
<b>C4</b>	Invite inquiry beyond the lesson

<b>G- Guide direction of dialogue or activity</b>	
<b>G1</b>	Encourage student-student dialogue
<b>G2</b>	Propose action or inquiry activity
<b>G3</b>	Introduce authoritative perspective
<b>G4</b>	Provide informative feedback
<b>G5</b>	Focusing
<b>G6</b>	Allow thinking time

## Appendix B

### Transcript Notation

Symbol	Description	Use
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<sup>2</sup> For consulting the full version of SEDA, see <http://tinyurl.com/BAdialogue>

(statement)	Italics between parenthesis	Annotation of non-verbal activity or context.
[utterance]	Brackets	Indicates the start and end points of overlapping speech.
[utterance—]	Brackets and m dash	Indicates an interruption of the utterance (in the context of overlapping speech). The utterance is not taken up later.
“utterance”	Quotation marks	Reading out loud.
(...)	Inaudible	Indicates that part of the dialogue is inaudible or incomprehensible.
[...]	Omission of part of the text when speaker reads out loud	Indicates that some part of the text read out loud was omitted from the transcript.
utterance...	Ellipsis	Indicates an incomplete utterance (which might or might not be taken up again).
A: incomplete utterance... B: utterance (interruption) A: ... taken up utterance	Interrupted utterance	Indicates that an utterance from speaker A is interrupted by speaker B, and then taken up again by speaker A.



## Appendix C

### Rubric for Analysing Written Summaries

Indicator	Description	Criterion	Partial score
Title	This aspect evaluates to what extent the title proposed is comprehensive, informative and concise.	The title covers the three texts, and is informative and concise.	2
Maximum score: 2		The title is concise, but not very informative. Includes cases where only the referent is present	1
		The referent is not present, or there is no title.	0
Main ideas	This aspect assesses which main ideas from the three original texts are included in the summary (propositional analysis of the ‘ideal’ macrostructure revealed a total of six main ideas).	6 main ideas are included	3
		5 main ideas are included	2.5
		4 main ideas are included	2
		3 main ideas are included	1.5
		2 main ideas are included	1
		1 main idea is included	.5
		No main ideas are included.	0
Organisation	This aspect evaluates local and global coherence of the macrostructure produced, based on evidence of organisation of ideas in terms of superstructure, as well as the use of linguistic markers.	There is congruence of ideas across the three texts. The structure of the text is clear in terms of a beginning, a development and an ending. The summary includes at least two linguistic markers.	2
		There is certain congruence of ideas across the three texts, but some of the ideas might be truncated. The structure of the text is somewhat clear, but one or two elements might be missing. The summary includes at least one linguistic marker.	1
		There is a lack of congruence of ideas across the three texts, and some of the ideas are truncated. The structure of the text is not clear. The summary does not include linguistic markers (unless they are copied verbatim).	0
Level of expression	This aspect evaluates the quality of the macrostrategies used to produce the summary, by assigning differential scores according to the most sophisticated one used.	Integration and construction.	3
		Generalisation without losing the essence of the text.	2
		Suppression by selecting relevant information, while eliminating redundant or superfluous ideas within the text. Includes paraphrasing.	1
		Indiscriminate copy of words, phrases and/or sentences. The essence of the text is not evident.	0
Total score:			

10

