

Open Research Online

The Open University's repository of research publications and other research outputs

Dialogical interactions among peers in collaborative writing contexts

Book Section

How to cite:

Rojas-Drummond, Sylvia; Littleton, Karen; Hernandez, Flora and Zuniga, Mariana (2010). Dialogical interactions among peers in collaborative writing contexts. In: Littleton, Karen and Howe, Christine eds. Educational Dialogues, Understanding and Promoting Productive Interaction. London: Routledge, pp. 128–148.

For guidance on citations see [FAQs](#).

© 2010 The Authors

Version: Accepted Manuscript

Link(s) to article on publisher's website:
<http://www.routledge.com/books/details/9780415462167/>

Copyright and Moral Rights for the articles on this site are retained by the individual authors and/or other copyright owners. For more information on Open Research Online's [data policy](#) on reuse of materials please consult the policies page.

oro.open.ac.uk

CHAPTER 7: DIALOGICAL INTERACTIONS AMONG PEERS IN COLLABORATIVE WRITING CONTEXTS

Sylvia Rojas-Drummond, Karen Littleton^{*}, Flora Hernández
and Mariana Zúñiga

National Autonomous University of Mexico and ^{*}University of Jyväskylä

Introduction

This chapter focuses on understanding the nature and quality of primary school children's talk whilst working on collaborative writing projects in the context of an innovative Mexican educational programme called *Learning Together*. With its roots in socio-cultural perspectives on learning and development, the programme has been designed specifically to foster the development of 'learning communities', within which participants co-construct knowledge and understanding, and promote social, cognitive, psycholinguistic and technological abilities in the children. The analytic work presented focuses on exploring the relations between the dialogical, collaborative writing processes of teams of fifth graders (10 to 11 years old) engaged in the production of two types of texts, namely e-mails and opinion articles. It is argued that divergent tasks, such as collaborative writing, require somewhat different dialogic styles of interaction than convergent tasks. The associated conceptual and educational implications are discussed in relation to understanding and enhancing oral and written communication in school settings.

Antecedents

Our work is underpinned by a commitment to a socio-cultural approach to conceptualizing and studying processes of development, teaching-and-learning and education and it contributes to recent developments in ‘dialogic approaches’ to learning and teaching in classroom settings (e.g. Alexander 2004; Lyle 2008; Skidmore 2006). Specifically, our interest is in understanding and promoting ‘dialogic interactions’ which, drawing on Alexander (2004), we define as interactions where pupils ask questions, explicate points of view and comment on ideas which emerge in lessons. They are supported in this by teachers who are sensitive to, and take account of, their ideas in developing the theme of the lesson, using talk to provide a cumulative, dynamic, contextual frame to ensure reciprocity and promote the students’ continued involvement (Lyle 2008). Our primary interest is thus in the nature and significance of classroom talk. Though we recognize the importance in educational activity of, for example, the use of gesture and other non-verbal ways of interacting, our view is that the distinctive role of spoken language in learning and development justifies it being given particular consideration and attention.

Inherent in the socio-cultural approach is the notion that if we are to understand the nature of thinking, learning and development we need to take account of the fundamentally social and communicative nature of human life. Socio-cultural theory posits that intellectual development is achieved through dialogue and that education is enacted through the interactions between students and teachers which both reflect and constitute the historical development, cultural values and social practices of the societies and communities in which educational institutions exist. Education and cognitive development are therefore seen as cultural processes, whereby knowledge

and meanings are ‘co-constructed’ as joint interactional accomplishments. Knowledge is not only possessed individually but also shared amongst members of communities - with people constructing knowledge and understandings jointly, through their involvement in events and practices which are shaped by cultural and historical factors. Within such cultural practices, language plays a key role as a mediator of activity, on both the social and psychological planes.

Vygotsky (1978) described language as both a cultural tool (for the construction and sharing of knowledge amongst members of a community or society on the social plane) and as a psychological tool (for structuring the processes and content of individual thought on the psychological plane). He proposed that there is an inextricable inter-relationship between these two kinds of use, which can be summarised in the claim that ‘intermental’ (social, interactional) activity forges ‘intramental’ (individual) cognitive functioning. The creation of meaning is thus both an interpersonal and intrapersonal process, with ways of thinking being embedded in ways of using language (Wegerif and Mercer 1997). As Littleton and Mercer (this volume) note, the implication is that educational success, and failure, may be explained partly by the quality of educational dialogues rather than being just the result of: ‘the intrinsic capability of individual students or the didactic presentational skills of individual teachers, or the quality of the educational methods and materials been used’ (p.x) (Mercer 1995, 2000; Mercer and Littleton 2007; Rojas-Drummond 2000).

As well as being inspired by socio-cultural theory, our research has also been motivated by practical educational concerns and we have sought to explore two

functional aspects of interaction in classrooms. The first is teachers' use of spoken interaction with children as a means for promoting guided participation and 'scaffolding' the development of their knowledge and understanding by providing the intellectual support of a relative 'expert' for the efforts of 'novices' in engaging with any learning task (Rogoff 1990, 2003). The second is the potential value of peer group interaction and dialogue as another means of promoting such development, but in this case by providing a more symmetrical environment for the co-construction of knowledge in which the inevitable power and status differentials between expert and novice are less likely to apply (Mercer 2000). It is this second facet of our work that is the focus of this chapter.

Researchers have differed in their assessments of the educational value of putting children into small groups to work and talk together. On the one hand, experimental and observational studies have demonstrated the distinctive value of collaborative talk in problem solving and learning, including curriculum related activities (Littleton and Häkkinen 1999; Littleton and Light 1999; Rojas-Drummond, Hernández, Vélez, and Villagrán 1998; Teasley 1995). On the other hand, observers of collaborative activity in classrooms have reported that most of the talk observed was off-task, uncooperative and of little educational value (Alexander 2004; Bennett and Cass 1989; Galton, Simon and Croll 1980). But this is not quite the paradox that it seems. Closer consideration of relevant evidence suggests that some ways of talking in group activity are indeed of special educational value, but that such ways are relatively uncommon in classrooms. Our explanation for the relatively low educational value of much group talk in classroom contexts has been that children are not commonly taught about, or explicitly inducted into, ways of talking effectively together, nor are

they helped to develop specific dialogic strategies for thinking collectively (Mercer 1995; Mercer and Littleton 2007; Rojas-Drummond 2000; Rojas-Drummond and Mercer 2003; Wegerif, Rojas-Drummond and Mercer 1999). In contrast, the quality of children's discussion when engaged effectively in collaborative activities in the classroom can be captured in the notion of 'Exploratory Talk'. This is a way of using language for reasoning first identified by Douglas Barnes (e.g. Barnes and Todd 1995) which, although derived from the study of children's talk in groups without a teacher present, shares some of the characteristics of the type of teacher-student communication that Scott and colleagues (this volume) call 'dialogic-interactive'.

According to Mercer:

Exploratory Talk is that in which partners engage critically but constructively with each other's ideas. Relevant information is offered for joint consideration. Proposals may be challenged and counter-challenged, but if so reasons are given and alternatives are offered. Agreement is sought as a basis for joint progress. Knowledge is made publicly accountable and reasoning is visible in the talk (Mercer 2000: 98).

Providing reasons, justifications, warrants and/or evidence to support one's opinions is part of argumentation, and is central to Exploratory Talk (Rojas-Drummond and Peon 2004). There are good reasons for wanting children to use this kind of talk in group activities, because it represents a distinctive social mode of thinking or 'interthinking' (Mercer 2000; Mercer and Littleton 2007). This constitutes a valuable kind of 'co-reasoning', with speakers following ground rules which help them share knowledge, evaluate evidence and consider options in a reasonable and equitable way.

In this respect, intervention work by Mercer and colleagues (e.g. Mercer and Littleton 2007; Mercer, Wegerif and Dawes 1999; Wegerif, Mercer and Dawes 1999) has enhanced the use of Exploratory Talk by British primary school children. Their results show that this enhancement had a positive effect on children's group and individual problem solving, as well as on performance in academic disciplines such as Mathematics and Social and Natural Sciences (see also Rojas-Drummond and Mercer 2003). Following these studies, research in Mexico by Rojas-Drummond and her colleagues (e.g. Rojas-Drummond, Gómez and Vélez 2008; Rojas-Drummond and Peon 2004; Rojas-Drummond, Pérez, Vélez, Gómez and Mendoza 2003) has confirmed that Exploratory Talk is particularly effective in promoting group and individual reasoning, as well as argumentation abilities in primary school children.

Our most recent work, which we describe here, concerns the nature of children's collaborative writing processes. Writing is a socio-cultural process, with its learning taking place in specific cultural contexts and institutional settings. Learning to write involves becoming competent in the use of sophisticated communicative strategies - where the interaction between experts and novices is crucial. According to Flower and Hayes (1980), expert writers plan, compose and revise reflexively, while novice writers do so in a more rudimentary way. Similarly, Scardamalia and Bereiter (1986) claim that during writing, novices engage in writing but without much reflection, using mainly a linear 'knowledge telling' strategy. In contrast, expert writers move backwards and forwards continuously between a content and a rhetorical space using mainly a more sophisticated 'knowledge transforming' strategy. Sharples (1999) synthesized the previous models and proposed that writing is a process of 'creative

design' where the writer chooses among many potential courses. During writing, planning, composing and revising take place in a cyclical and iterative fashion, and these processes in turn involve cycles of action and reflection.

It is important to stress that writing is not a solitary activity, even if it is undertaken by one person. The sociocultural perspective emphasises that writing is embedded in a complex social world, where already existent texts intermingle to create new ones, a process referred as 'intertextuality' (Maybin 2003). If intertextuality is evident when the text is created by a lone writer, it is even more prominent when this writing is collaborative, since a new dimension is added: the referencing to each writer's discourse. Collaborative writing makes even more evident its dialogic and intertextual nature, because 'each utterance is part of a larger whole in which all possible meanings of a word interact, possibly conflict, and affect future meaning' (Dale 1994). Intertextuality is essential to collaborative writing given that participants are constantly blending their voices for a common purpose. At the same time, collaborative writing informs our understanding of intertextuality because it makes thinking about writing external and explicit.

More recently, conceptions of literacy have been greatly extended to incorporate the variety of uses of ICT that have permeated society as a whole and education in particular. In this context, authors now refer to the integration of the functional uses of this variety of psycholinguistic, technological and cultural artefacts as 'information literacy'; 'multiliteracies' or 'multimodal literacy' (e.g. Cassany 2003; Fairclough 2000; Jewitt 2005; Mercer, Fernández, Dawes, Wegerif and Sams 2003; Wegerif and Dawes 2004). Understanding the dialogical processes implicated in collaborative

writing is the object of the present study. This research focus is particularly salient as collaborative writing is inherently dialogic (unlike, say, a concept in science) and thus the ‘processes’ and ‘products’ of such writing are interwoven and mutually constitutive. However, work such as this is also vital, given that functional and information illiteracy are very wide-spread among student populations, including in Mexico, as demonstrated by several international and national studies (e.g. Mazón, Rojas-Drummond and Vélez 2005; Organisation for Economic Cooperation and Development (OECD), 2001, 2004; Rojas-Drummond, Gómez, Márquez, Olmos, Peon and Vélez 1999). Thus, the programme to be described next was designed to contribute to understanding and tackling these problems for Mexican primary students.

The context of the study: the ‘Learning Together’ educational programme

In the present study Mexican primary school children carried out various team projects involving dialogical interactions and collaborative writing. These projects were generated in the context of the implementation of an innovative educational programme called *Learning Together*. This has operated in a public primary school in Mexico City for over eight years. The purpose of the programme is to establish ‘learning communities’ within primary schools which foster the creation of close partnerships among children, teachers and university researchers. These communities encourage the active participation of all its members in meaningful activities involving the co-construction of knowledge. In addition, the programme seeks to promote social, cognitive, psycholinguistic, technological and academic abilities in primary students. Particular emphasis is placed on enhancing abilities and dialogic and literacy repertoires which our research (among others) has demonstrated the

children do not generally develop adequately as part of their regular school activities, but which are relevant for their competent participation in their communities of practice in and out of school. These include: collaboration, problem solving, as well as functional oral and written communication (see for example Mazón et al. 2005; Rojas-Drummond, Albarrán and Littleton 2008a; Rojas-Drummond et al. 2008b; Rojas-Drummond et al., 1998; Rojas-Drummond, Mazón, Fernández and Wegerif 2006; Rojas-Drummond et al. 2003).

The programme runs within school hours and the activities are carried out in parallel with those of regular school. However, the way the programme operates contrasts sharply with that of ordinary classrooms in most public primary schools in Mexico. The latter tend not to provide a rich social learning environment. Teaching in general tends to comply with traditional, recitational pedagogical methods which involve mainly directive and transmissional styles of interaction and ‘monologic’ talk (e.g., Mercado, Rojas-Drummond, Weber, Mercer and Huerta 1998; Paul, 2005; Rojas-Drummond, 2000). The State provided text books are the main guide for a variety of routine exercises, and literacy practices tend to be void of meaning or function (Instituto Nacional para la Evaluación de la Educación [INEE] 2007). As Kaufman and Rodríguez comment, writing is performed ‘for nothing and for nobody’ (2001: 19).

In contrast with the school practices detailed above, our programme strives to create learning communities where all members participate actively in pursuing authentic and creative projects and solving a wide variety of engaging problems. Activities involve participants’ immersion in diverse meaningful and functional oracy and

literacy practices, including competent uses of cultural artefacts and technologies. These practices are relevant to children's active and autonomous participation in their communities inside as well as outside of the school context.

The programme *Learning Together* is implemented throughout the academic year with fourth, fifth and sixth grade students (from 9 to 12 years old). Activities take place in a multipurpose room designed *ex-professo* and equipped with modular furniture, a small library and computers connected to the Internet. The arrangement enables the teacher to orchestrate diverse whole-class and small-group activities. Once a week, the respective students from each participating group come with their teacher to this setting for a 90 minute session. The sessions are coordinated by the teacher with the support of several university researchers. Before, during and after implementation of the programme, teachers and researchers work in close collaboration to design, carry out, review and refine all the activities, procedures and resources used in the sessions.

The programme comprises four modules designed to enhance diverse abilities in the students. In the first module, activities are intended to foster collaboration, effective ways of communication, including the use of Exploratory Talk, and problem solving strategies. Methods used include those developed by Mercer and colleagues in the U.K. for promoting Exploratory Talk (Dawes, Mercer and Wegerif 2000; Mercer 2000; Mercer and Littleton 2007). These have subsequently been adapted by Rojas-Drummond and colleagues for use with Mexican children (e.g. Rojas-Drummond, et al. 2008a; Rojas-Drummond et al. 2003). Briefly, with adult guidance, children are encouraged to generate certain 'ground rules' or strategies for using Exploratory Talk.

Then, throughout the whole programme, children apply and adapt these strategies to the solution of a wide variety of problems in different domains, with emphasis in the psycholinguistic domain.

In the remaining three modules, the focus is on the promotion of strategies for comprehending and producing texts of different genres, including literary, argumentative and informative texts. Emphasis is placed on the use of strategies for producing texts with local and global coherence, guided by the structure and rhetorical qualities of specific text genres (see van Dijk and Kintsch 1983). Methods followed include those developed by Rojas-Drummond and colleagues in previous studies related to literacy (e.g. Mazón et al. 2005; Rojas-Drummond et al. 2008a; Rojas-Drummond et al. 2008b; Rojas-Drummond et al. 1998; Rojas-Drummond et al. 2006). In particular, children carry out a variety of creative team projects which require the dynamic use and integration of strategies for communicating through oral and written language effectively, using diverse technological tools. The projects involve: comprehension and production of literary texts in fourth grade; comprehension and production of communicative and argumentative texts in fifth grade, and comprehension and production of expository texts in sixth grade.

From these three grades, the projects generated particularly in fifth grade were selected for illustrative purposes and are the focus of the present study. As part of these projects children, organized in small teams, carry out e-mail correspondence with Mexican-American 'pen-pals'. They also create periodistic texts for a school bulletin, including news reports, opinion articles, reviews and the like. This bulletin is published and disseminated, together with all the products of the projects carried out

by the teams of each grade, at the end of the school year in a wide event called the 'cultural fair'. In it, children present to and discuss with the whole learning community, as well as a broader audience, the products of their projects. This event contributes to rendering the projects meaningful and functional, given their genuine communicative purposes and the interaction with real interlocutors.

Throughout the implementation of the *Learning Together* programme, researchers coordinate efforts with teachers in order to promote the use of diverse instructional and learning strategies, inspired in sociocultural perspectives on learning and development. These include the following:

- (a) the creation of learning environments rich in social interactions where the diverse activities carried out are meaningful, purposeful and mediated by a variety of cultural artefacts, including tools and sign systems (Cole 1996; Rogoff 2003);
- (b) guided participation between experts and novices where adults scaffold children's learning activities (Bruner 1978; Rogoff 1990);
- (c) collaborative learning where peers engage in diverse creative projects, joint problem solving and co-constructing knowledge (Brown, Palincsar and Ambruster 1984; Littleton, Miell and Faulkner 2004; Rojas-Drummond et al. 2008b; Rojas-Drummond et al. 1998); and
- (d) promotion of effective strategies for oral and written communication between children and adults, as well as among peers, including dialogic teaching and Exploratory Talk (Alexander 2004; Mercer 2000; Mercer and Littleton 2007).

Our team has conducted numerous quantitative and qualitative longitudinal, cross-sectional and microgenetic research projects throughout the eight years of the implementation of the programme. These have been framed by theoretical as well as practical concerns. The investigations have assessed, among other issues, the success of the programme in promoting the repertoires we seek to enhance. In general, our results have indicated that the programme has been highly effective in promoting social, cognitive, psycholinguistic and technological abilities in the children. In particular, children who participate in our programme, in comparison with peers matched on relevant characteristics, develop better collaboration and communication abilities, including the use of Exploratory Talk, argumentation, and other dialogical and co-constructive forms of interaction for solving a wide variety of problems (Rojas-Drummond et al. 2008; Rojas-Drummond & Peon 2004; Rojas-Drummond et al. 2003; Wegerif, Pérez, Rojas-Drummond, Mercer and Vélez 2005). Similarly, the programme enhances literacy abilities in the students, including those dealing with the comprehension and production of literary, argumentative and expository texts (e.g. Guzmán and Ibarra 2003; Mazón et al. 2005; Peon 2004; Rojas-Drummond, Mazón, Gómez and Vélez forthcoming).

A parallel line of research has analysed the processes involved in children's appropriation of abilities related to collaboration, oral and written communication and problem solving (e.g. Fernández, Wegerif, Mercer and Rojas-Drummond 2001; Rojas-Drummond 2000; Rojas-Drummond et al. 2008b; Rojas-Drummond et al. 2006; Rojas-Drummond and Mercer 2003; Rojas-Drummond, Mercer and Dabrowski 2001).

One issue of particular concern in our research has been elucidating the collaborative contexts which promote the use of explicit reasoning in the form of argumentation which is characteristic of Exploratory Talk. In previous studies, Rojas-Drummond et al. (2006) found that children who participated in the '*Learning Together*' programme used argumentation extensively when solving a convergent task which demanded finding the correct answer to logical-mathematical problems. In contrast, argumentation was less frequently used for solving divergent tasks such as summarizing several related texts. (This latter task is divergent in the sense that it is more open and there is not one single correct answer for solving this task, as is the case for convergent tasks). Similarly, argumentation was not frequently used in other divergent tasks such as the creative collaborative writing of multimedia stories (Rojas-Drummond et al. 2008b). For divergent tasks, our studies have found that children use most commonly a type of talk we call 'co-constructive'. This seems to follow most of the basic ground rules of Exploratory Talk, except that children do not necessarily make their reasoning visible in the form of explicit arguments. In co-constructive talk, children typically chain, integrate, elaborate and/or reformulate each other's contributions to negotiate meanings and jointly construct solutions to problems, including differences of perspectives.

Based on these recent studies, we argue that the nature of the task in terms of convergence vs. divergence is one relevant factor for explaining the degree to which children make their reasoning explicit in the form of arguments, with convergent tasks particularly affording this use. In fact, most of the studies which have demonstrated the extensive use of Exploratory Talk by children, when this is explicitly promoted, have used convergent tasks such as those involved in solving logical, mathematical

and science problems (for a review see Mercer and Littleton 2007; Rojas-Drummond et al. 2008a; Rojas-Drummond and Mercer, 2003). However, divergent tasks such as collaborative writing have been much less studied in these contexts. Thus, analysing the dialogic styles children use when writing collaboratively is the object of the present study. Considering the scarce evidence so far, we hypothesise that divergent tasks like collaborative writing require somewhat different dialogic styles of interaction than convergent tasks. Furthermore, besides the nature of the task, the type of text children produce might be another contributing factor for explaining the degree to which they use argumentation. Therefore, in the next section we offer evidence of dialogical interactions of fifth grade children producing collaboratively two contrasting types of texts, namely epistolary and argumentative. We would predict that the latter can create particularly favourable contexts where children can make their reasoning visible in their talk in the form of explicit arguments.

Dialogical interactions in two writing contexts

The data to be analysed here were drawn from a wider study of 48 fifth grade children (10 to 11 years old) within a state primary school in Mexico City that takes part in the *Learning Together* programme. The data were collected in the context of the implementation of the module designed to promote comprehension and production of communicative and argumentative texts, which lasted 12 sessions. During this module children, organized in triads, carried out two main team projects: e-mail correspondence with Mexican-American ‘pen-pals’, and the creation of a school bulletin which contained a diversity of periodistic texts, including opinion articles, news reports, book and film reviews and letters of complaint. The projects reflected

the work of the team and represented an ideal opportunity for enhancing oracy, literacy and functional uses of technology in an integrated and meaningful fashion.

For data collection, four focal triads were randomly selected and their collaborative work was videoed to enable a micro-genetic analysis of their interaction and discourse while they wrote the e-mails and periodistic texts. Five sessions were video recorded for each triad. Videos were transcribed verbatim together with a description of the context, following procedures developed by Edwards and Mercer (1987). Videos and transcripts were consecutively analyzed qualitatively on the basis of the content, structure and communicative function of the dialogical interactions, as well as the micro and macro contexts surrounding these exchanges. At the same time, our analyses were guided by previous relevant work, including our own (e.g. Mercer 2000; Mercer and Littleton 2007; Rojas-Drummond 2000; Rojas-Drummond et al. 2008a; Rojas-Drummond et al. 2008b; Rojas-Drummond et al. 2006; Rojas-Drummond and Mercer 2003). In addition, the texts produced by the four focal triads were collected and analysed qualitatively and quantitatively using rubrics designed for the purpose.

To exemplify our approach to the in-depth micro-analyses of dialogues and texts mentioned above, we focus on representative examples of the dialogical and text production processes displayed by triad 1 while creating an e-mail to their 'pen-pal', and triad 2 while producing an opinion article. Both triads comprised two girls and one boy (all the dialogues and texts provided were produced in Spanish by the children; the texts presented here are English translations of these original texts).

These two contexts were compared to establish the generalities and specificities in the dialogical and literacy processes involved in the production of two contrasting types of texts. On the one hand, emails represent informal texts with an expressive function where the focus is engaging in interpersonal exchanges, and the interlocutor(s) are well defined. On the other hand, opinion articles correspond to more formal texts with an appellative function where the focus is presenting a problem and defending a position; also, the interlocutor(s) are more loosely defined.

Participating in email correspondence

General context

Marisol, Dalia and Felipe are sitting together at a computer writing an email to Patricia, a Mexican-American 13 year-old girl living in California. In a previous e-mail, Patricia had sent them her photo and told them about herself. The children are now responding to that mail. In segment 1, they are discussing several questions they want to ask to Patricia.

(After segment 1, we present the email they sent to Patricia later in the same session).

Segment 1: Asking about boyfriend

1. Marisol: (*Starts writing on the computer using a word processor*). ‘We’re going to ask you some questions: Do you have a boyfriend?’ ... Another could be ‘At what age do you think you’ll get married?’
2. Felipe: (*Reading*) ‘At what age?’ Yeah.
3. Marisol: Another question about boyfriends and getting married and all of that?
4. Felipe: ‘How many kids do you want?’

5. Marisol: Yes
6. Dalia: But those are personal questions...
7. Marisol: It doesn't matter (*starts writing down the idea*). 'How many kids do you want?'
8. Dalia: What? No! Don't write that question because...
9. Felipe: Yeah!
10. Marisol: (*In agreement with Felipe*). It's to get to know how she is, depending on how many kids she wants is how she is... (*she writes down the information:*) 'Where do you want to go for your honeymoon?' (*While Marisol types, Dalia & Felipe chat*).
11. Dalia: To New York.
12. Felipe: No.
13. Dalia: To Hollywood.
14. Felipe: Or to Dallas.
15. Marisol: (*Writes while reading aloud*) 'Honeymoon'.
16. Felipe: Honeymoon? Why do people say 'going to honeymoon'?
17. Dalia: Mmmhh... Oh, I know! Because it is very romantic and all that stuff.
18. Felipe: Oh, you're right...
19. Dalia: (*Reading*) 'How many kids do you want?' Let's say that... But what if she is infertile?
20. Marisol: Infertile? What do you mean?
21. Dalia: (*Speaking quietly*). That she can't have children. We shouldn't ask things like that.
22. Marisol: But she can't know that.
23. Dalia: Why don't we ask her... mmmhh... 'Which pet do you want to have?'

24. Felipe: ...'Do you have a pet?' or 'Which pet would you like?' Yes.
25. Dalia: ...'Which animal...'
26. Marisol: Why don't we ask only about boyfriends and getting married and all of that (*She reads all the questions written so far while Dalia and Felipe listen*). Another question could be 'When you turn fifteen years old, what will your dress look like?'
27. Felipe: How about 'Which color will it be?'
28. Marisol: Yes. 'Which color will your dress be?'
29. Dalia: Fifteen year-old dress?
30. Marisol: Yes, because the wedding dress must be white (*she writes the idea down*).
31. Dalia: (*She writes on the computer*). 'We send you lots of kisses...' 'Sincerely, Marisol, Dalia and Felipe'.
32. Felipe: Well, let's see. 'Hi Patty!' (*He reads aloud the entire letter while the girls read on the screen*).

Insert Figure 1 about here

Comments

The preceding dialogue shows the collaborative work of the children during the writing of an email to their 'pen-pal' Patricia. In turn 1 Marisol proposes that they ask Patricia personal questions. This initiative gives rise to an engaging discussion where Felipe and Marisol favour continuing to ask Patricia more personal questions (turns 2–5, 7, 9, 10 and 26), whereas Dalia expresses her objection and concern, arguing that these questions are too personal (turns 6, 8, 21 and 23). In turn 10 Marisol offers a counter-argument for maintaining the personal tone. These differences of opinion continue to underlie the triad's interaction throughout, surfacing intermittently. These exchanges indicate that the children have differing perspectives about the degree of privacy/intimacy that is socially acceptable in their correspondence with their 'pen-pal'. However, their dialogue also reflects a high level of intersubjectivity, as well as a commitment to negotiate their perspectives and move forward in writing their text (e.g., turns 1–10 and 19–33). In this sense, their talk is not disputational (as it is not characterized by conflict and individualized decision making, see Littleton and Mercer this volume) but highly exploratory in orientation; that is, the different positions are not imposed but offered as proposals for joint negotiation, and in some instances accompanied by arguments and counter-arguments.

Besides this collaborative orientation, throughout the triad's discussion we can also observe the expression of affection, as well as the externalization of personal, social and cultural views (see turns 10–14, 16–18, 20–2, 26–30). These arose from the children's high level of involvement in the activity. For example, in turns 16–18 Felipe and Dalia discuss the metaphoric use of the term 'honeymoon' to convey a sense of romance. Also, in turns 20–2 Dalia and Marisol speculate on the personal

concerns of their interlocutor. The children also show sensitivity to Patricia's cultural context in turns 10–14 and 26–30. Thus, the high level of intersubjectivity displayed by the triad in their discussions is extended to their interlocutor: throughout the segment, Patricia seems to be another participant, a fourth 'voice' present in a more extended dialogue (Wertsch 1991). (Note also how the children continually use the second person -you- when deciding what to ask Patricia; e.g. turns 1, 4, 10, 23, 26 and 28).

At the end of the segment (turns 31 and 32), the children close down the email with an affectionate good-bye and revise the text by reading it out loud. These actions provide evidence of the triad's knowledge about the importance of revising a text which will be read by others. The final version of the written text conforms to the typical structure of an informal or personal letter and reflects the expressive function of the epistolary genre. These aspects were reinforced by the inclusion of a pertinent image, which worked as a semiotic device to highlight, in a condensed and attractive fashion, some central meanings of their message (romance, marriage, etc.).

Further analyses of the relations between the children's dialogues, written text and image revealed complex and dynamic intertextual and intercontextual links (Maybin 2003). These include: 1) juxtapositions across different segments of the dialogue (e.g., see relations between turns 4 and 19); 2) various references to their interlocutor; 3) allusions to world knowledge (e.g., social and cultural conventions); 4) non-linear relations between the contents of the oral and written texts and 5) overlapping references to certain central meanings in the dialogue, written text and image (e.g. romance, marriage, social celebrations and conventions, etc).

It is interesting to note that the children's rich peripheral (yet pertinent) discussions on a variety of topics occurred in parallel with making central decisions about what to say to their 'pen-pal' and how to say it, as well as typing the email in the computer. These parallel processes and activities, or 'parallel conversations', exemplify children's use of sophisticated writing strategies with engagement in cycles of action and reflection (Sharples 1999), moving backwards and forwards between a content and a rhetorical space (Scardamalia and Bereiter 1996).

Writing an opinion article for the school bulletin

General context

Estefanny, Leticia and Mauricio are sitting together at a computer writing an opinion article about the mistreatment of animals. In Segment 2 the children are discussing and writing about different situations in which animals are mistreated, as well as their stance on this problem.

(After segment 2, we present the opinion article they produced later in the same session).

Segment 2: 'Discussing about animal mistreatment'

1. Estefanny: There are animals (*starts writing*) 'that are...'
2. Leticia: (*Reading*) that are (*adding*) 'mistreated in the streets by the...'
3. Estefanny: By their owners.
4. Mauricio: I don't hit my dog, only when he ate a marble.
5. Estefanny: It would also be to abandon them in the street.
6. Mauricio: They kill them, they use them...

7. Estefanny: 'They use them for fights...'
8. Mauricio: 'They make them fight.'
9. Leticia: Also dogs without training, those dogs bite people.
10. Estefanny: They leave them in the streets.
11. Leticia: Yeah, one day I had a dog named (*inaudible*) and one day...
and this dog bite my sister here (*points at her arm*).
12. Estefanny: We write a colon, right? Colon and then we write: 'First, because they use them...'
13. Leticia: For fighting, to leave them abandoned.
14. Mauricio: They use them to leave them abandoned? (*questioning Leticia's phrase*).
15. Estefanny: Mmmhhh... (*she corrects as she writes*) 'because they abandon them.'
16. Leticia: Mmmhhh... 'It is unjust!'
17. Mauricio: Ah, why, why?
18. Leticia: Well, because animals should stay alive and be cared for by the... by their owners.
19. Mauricio: Because they should not be used to...
20. Estefanny: To fight and all those kind of things, etcetera.
21. Leticia: In order to live and stay alive.
22. Estefanny: Well, to live and to be cared for, protected, loved
23. Mauricio: Yeah, not to be hit ... so the... that their owners should protect them.
24. Estefanny: Because animals should have freedom, right? Some of them should have their own space. They should...

25. Leticia: Have their, their, how do you call it? ... 'their adequate place.'
26. Estefanny: (*Reads part of the text and then adds*) 'to receive love and protection, right?'
27. Leticia: 'And protection by their owners.'
28. Estefanny: 'And the necessary care?'
29. Leticia: From their owners.
30. Estefanny: On the part of their...
31. Leticia: 'On the part of their owners.'
- ... (*Children take up previous topic about fights, and start talking about bull fights*)...
32. Estefanny: Bull fights are unjust.
33. Mauricio: No, 'cause sometimes bulls kill.
34. Estefanny: Yeah, but because they tease them.

Insert Figure 2 about here

Comments

In Sequence 2 children discuss, organize information and jointly construct the main body of their opinion article. The first part of their conversation (turns 1- 15) relates specifically to generating, in a process of 'brain storming', five central ideas as supporting evidence for the claim that animals are mistreated (i.e., they kill them, they use them for fighting, they abandon them; etc.). The second part (turns 16–31) deals with taking a personal (collective) position on the issue – namely that animal mistreatment is unjust - and jointly constructing a central argument supported by eight related justifications to back off their position (i.e., that animals should be cared for, protected, loved, etc.).

Throughout the dialogue we see evidence of a high degree of engagement with the activity by the three children, as well as the proposal of a wide range of contributions from their world knowledge to advance their written composition. The main thesis and supporting evidence, as well as the position, global argument and accompanying justifications, were jointly generated by displaying a wide variety of communicative acts indicative of a collaborative orientation (Hymes 1972). Among these were: proposing ideas, questioning, negotiating alternative perspectives, arguing and counter-arguing as well as chaining, elaborating, integrating and reformulating information. These observations provide evidence of a collaborative and co-constructive orientation to the task, as well as a high level of intersubjectivity among the participants. (For example, in turns 1–3, 6–8, 19–20 and 26–31 children chained their ideas by completing or reformulating each others' phrases, as if anticipating

what the previous speaker was going to say and finishing the phrase for him/her). Similar communicative acts were also identified in the four focal triads for the whole corpus of data of the present study. Other communicative acts present in the whole corpus were: asking for and providing opinions, clarifications and/or explanations; joint elaboration of ideas; asking for agreement; agreeing with others; disagreeing with others; and evaluating information. All these communicative acts reflect a co-constructive style of dialogical interaction, similar to the style described in previous related studies (e.g. Rojas-Drummond et al 2008b; Rojas-Drummond et al. 2006).

Alongside this collaborative orientation, children made extensive use of Exploratory Talk (see turns 5–15, 17–31, and 32–4). For example, in turns 5–15 the three children jointly propose supporting evidence for the claim that animals are mistreated. In addition, in turn 17 Mauricio asks for reasons for Leticia's position and in turn 18 Leticia provides an argument; this is followed by a series of additional justifications jointly constructed in turns 18–31. Furthermore, in turns 32–4 Estefanny and Mauricio express different perspectives on the subject of bull-fighting by making a claim as well as arguing and counter-arguing. These exchanges make evident children's disposition and openness to confront their ideas and solve conflicts in a critical but constructive fashion.

In parallel with deciding jointly what to say, children also negotiated how to write and engaged in writing their text. For example, in turn 12 Estefanny suggests organizing their contributions by writing a 'colon' followed by the connector 'first'. Then in turn 13 Leticia offers a phrase which is not very coherent; this is questioned by Mauricio in turn 14 and corrected by Estefanny in turn 15, who writes in turn a more coherent

phrase. All these examples evidence the children's knowledge about linguistic conventions, as well as engaging in planning, supervision and correction processes. This evidence in turn suggests that Triad 2, as was the case of Triad 1, used sophisticated writing strategies.

Also in parallel with the processes described above, children evoked previous related personal experiences, as well as externalized reflections about their own and others' behaviours, emotions, moral values and social and cultural practices (see turns 4, 11, 16 and 32–4). For example, in turn 4 Mauricio reflects on his own behaviour towards his dog, and in turn 11 Leticia recounts a related personal experience. Also, in turn 16 Leticia claims that animal mistreatment is unjust. In addition, in turns 32–4 Mauricio and Estefanny discuss bull-fighting, and argue about the animal's vs. human responsibility for bulls' aggressive behaviour. These concomitant actions and reflections are reminiscence of the sophisticated 'parallel conversations' exhibited by triad 1.

In relation to the written text, an analysis of its content, structure and function revealed the use of a formal language characteristic of this modality (including the third person and impersonal phrases). Also, the text conforms to the typical structure of this genre: it includes a title; it starts with a problem/thesis, followed by an exposition of details of the problem/thesis; it further expresses a personal position supported by valid arguments, and closes with suggestions for how to solve the problem. Similarly, the text has local and global coherence, including the use of linguistic markers (e.g. first, another way, because, if, etc.) (van Dijk and Kintsch 1983). In addition, the text complies with the appellative function of this genre by

using adequate rhetoric devices to convince a possible audience, including several back-ups to the main thesis in the form of supporting evidence and a well developed argument with several supporting justifications (see Halliday 1985). As was the case for the email, some central meanings of the text, in this case related to animal mistreatment, were underscored by the inclusion of a pertinent image in which some dogs are tightly enclosed in a cage. In general, the text is very adequate and sophisticated when compared to those produced by children of similar age and socio-economic level (see Peon 2004).

As was the case for the emails, analyses of the relations between the children's dialogues, text and image for the opinion article revealed complex and dynamic intertextual and intercontextual links. These include: 1) juxtapositions across different segments of the dialogue (e.g., see the relations between Mauricio and Estefanny's discussion in turns 6–8 about animal fighting, and in turns 32–4 about bull-fighting); 2) implicit references to possible readers (e.g. suggestions to people with pets at the end of the written text); 3) allusions to world knowledge in personal, moral, social and cultural planes (e.g., animal rights and human values – justice, freedom, responsibility, etc.) 4) non-linear relations between the oral and written texts (e.g. contrast discussion of bull-fights in turns 32–4, with lines 2–4 of the text about bull, rooster and dog fights as examples of animal mistreatment) and 5) overlapping references to certain central meanings in the dialogue, written text and image (e.g. animal mistreatment, abandonment, lack of freedom, etc.).

Discussion

The dialogues analyzed for triads 1 and 2, as well as most of those of the four focal triads studied, exhibited in general a collaborative orientation when writing texts of

different genres, including e-mails and opinion articles. When differences of opinion or perspective arose, the triads tended to try to overcome these differences through negotiations using mainly co-constructive talk (although their attempts to solve the differences were not always successful).

Sometimes the confrontation of perspectives was accompanied by explicit arguments, in which case the conflict was addressed using mainly Exploratory Talk. When considering the whole corpus of data for the present study, we found that Exploratory Talk was salient when children wrote argumentative texts (including opinion articles and letters of complaint). Exploratory Talk was also used, although in a lesser degree, for writing other non-argumentative texts such as e-mails and news reports (for a complete report of the data, see Zúñiga 2007 and Hernández 2008). In the latter cases co-constructive talk was particularly evident, as was the case for the data reported in Rojas-Drummond et al. (2006) and Rojas-Drummond et al. 2008.

In summary, the results of all these studies in combination suggest that, children who have participated in programs which explicitly induce the use of Exploratory Talk, (such as *Learning Together*), tend to confront convergent tasks by using Exploratory Talk extensively. On the other hand, with divergent tasks such as those involved in collaborative writing of texts of different genres (including summaries, stories, emails and opinion articles), their use of Exploratory Talk is more sporadic. This is because, unlike convergent tasks, in divergent ones, there is not one correct solution, nor are there definitive 'truths' involved in solving them. As Sharples (1999) argues, writing as creative design is open ended since the writer can choose among many courses. Thus, in these divergent contexts children may or may not express differences of

perspectives, and when these arise they may or may not address them through the use of explicit arguments, depending on different factors. One of these seems to be the type of text children write: argumentative texts seem to provide particularly fertile contexts for the use of Exploratory Talk (as was shown for the opinion article). Another factor might be the degree to which children adopt perspectives involving differences in personal values (as was the case in the example in Segment 1 where there was a clash of these different perspectives). An additional factor which has been identified in related studies is the writing phase children are engaged in: phases involving creative 'brain storming' might not be suitable for making reasoning explicit, whereas more reflective phases where children review their texts might be more conducive (see Vass 2004 and Vass, Littleton, Miell and Jones 2008). As can be seen, elucidating the contexts that promote the use of explicit reasoning is an open and exciting field which needs much more empirical underpinning than that which exists at present. However, taking the evidence so far in combination, it is reasonable to argue that divergent tasks like writing require somewhat different dialogic styles of interaction than convergent tasks.

Exploratory Talk was explicitly fostered as part of the *Learning Together* programme and was exhibited by the four triads under study. As discussed in the Antecedents, research in the area shows that, when not promoted directly, Exploratory Talk is very infrequently used by children in the school context. Given its clear educational benefits, there is a pressing need to enhance children's collaborative, co-constructive and exploratory orientation to solving jointly a wide variety of problems, as highlighted by the studies reviewed in this paper.

The analytic work presented evidenced the complex ‘parallel conversations’ identified during the triads’ dialogical interactions. Both triads engaged in iterative cycles of talking and writing, and in discussions about what to say and how to write it, in parallel with expressions of emotions, as well as a wide variety of personal, moral, social and cultural values, beliefs, knowledge, etc. These complex processes in turn are indicative of the use of sophisticated writing strategies. These include ‘knowledge transformation’ strategies, that is, moving backwards and forwards between a content and a rhetorical space. In addition, they engaged in iterative cycles of action and reflection, as well as of planning, writing and correcting (Scardamalia and Bereiter 1996; Sharples 1999). These authors claim that such strategies are typically used by expert writers. Children also exhibited in their written texts subtle knowledge about the structure and function of different text genres, and showed sensitivity to the differences between emails and opinion articles in terms of these features, as well as the type of language to be used, the way to address their interlocutors, etc. Previous data suggest that the use of these advanced oracy and literacy strategies is enhanced by the children’s participation in the *Learning Together* programme, and is not typical of children of equivalent age and socioeconomic level. In addition, the programme seems to foster argumentation and critical thinking in the children (e.g. Guzmán and Ibarra 2003; Mazón et al. 2005; Peon 2006; Rojas-Drummond et al. 2008a; Rojas-Drummond et al. 2008b; Rojas-Drummond et al. 2006; Rojas-Drummond and Peon 2004). In these studies we have found evidence that the benefits in oracy and literacy that children gain as a result of participating in the programme are generalized to new tasks and settings, different to those used as part of the programme. In addition, gains are starting to reflect in standard national student evaluations such as an achievement test called ENLACE.

Further evidence of the advanced oracy and literacy abilities of the children participating in the study stems from the analyses of the complex and dynamic intertextual and intercontextual relations holding between the children's dialogues, written texts and images (Maybin 2003). These included links within the dialogues, within the written texts, as well as between the dialogues, the written texts, the images and their knowledge of the world.

All the evidence reviewed in the present chapter supports the claim that authentic communicative activities such as those promoted in the *Learning Together* programme, including email correspondence and writing editorial articles to be published, create motivating and functional situations that enhance active participation, engagement, as well as the development of oracy and literacy (including reading and writing texts of different genres and for different communicative purposes). These types of practices are rare in more traditional classroom environments (INEE 2006; Rojas-Drummond 2000). Furthermore, data illustrate how these authentic activities also encourage children's engagement in rich and meaningful discussions and reflections. This engagement in turn illustrates how collaborative writing provides ideal settings for encouraging the use of language as a 'social mode of thinking' (Mercer 2000). In this context children can externalize their various perspectives, beliefs and thoughts spontaneously (i.e. without the need for induction by an adult or an experimenter). It is highly likely that these thoughts would not have been made explicit if the children had written the text individually. Thus, collaborative writing opens a window for analyzing not only children's dialogues and texts, but also their thinking.

Lastly, results highlight the importance of considering the dynamic interrelations between the micro and the macro levels of analyses for a comprehensive understanding of the phenomena under investigation. In the case of the present study, these relations include links between the particular activities of the children during the dialogical interactions and writing processes at the micro-analytical level, on the one hand, and their wider world knowledge about personal, social and cultural practices and conventions at the macro-analytical level, on the other. They also include the relations between these collaborative activities and the wider context in which they were fostered, which corresponds to the *Learning Together* programme. Analyses of these interrelations are essential in order to provide a fuller account of the processes by which children learn to write collaboratively by using diverse cultural artifacts including oracy, literacy and technologies, given that these processes are framed by the wider social and cultural settings in which these literacy practices are embedded.

References

- Alexander, R. (2004) *Dialogic Teaching*, 1st edn, Leeds: Dialogos.
- Barnes, D. and Todd, F. (1995) *Communication and Learning Revisited: making meaning through talk*, Portsmouth, NH: Boynton/Cook Publishers.
- Bennett, N. and Cass, A. (1989) 'The effects of group composition on group interactive processes and pupil understanding', *British Educational Research Journal*, 1: 19-32.
- Brown, A., Palincsar, A.S. and Ambruster, B. (1984) 'Inducing comprehension-fostering activities in interactive learning situations', in H. Mandl, N. Steinand

- and T. Trabasso (eds.) *Learning and Comprehension of Texts*, Hillsdale, N.J.: Lawrence Erlbaum.
- Bruner, J. (1978) 'The role of dialogue in language acquisition', in A. Sinclair, R. Jarvella and W.J.M. Levelt (eds.) *The Child's Conception of Language*, Berlin: Springer-Verlag.
- Cassany, D. (2003) 'La lectura electrónica', *Cultura y Educación*, 15: 239–251.
- Cole, M. (1996) *Cultural Psychology: a once and future discipline*, Cambridge, MA: Harvard University Press.
- Dale, H. (1994). Collaborative writing interactions in one ninth-grade classroom. *Journal of Educational Research*, 87: 6.
- Dawes, L., Mercer, N. and Wegerif, R. (2000) *Thinking Together. A Programme of Activities for Developing Thinking Skills at KS2*, Birmingham: The Questions Publishing Co.
- Edwards, D. and Mercer, N. (1987) *Common Knowledge: the development of understanding in the classroom*, London: Methuen.
- Fairclough, N. (2000) 'Multiliteracies and language: orders of discourse and intertextuality', in B. Hope and M. Kalantzis (eds.) *Multiliteracies: literacy learning and the design of social futures*, Australia: Macmillan.
- Fernández, M., Wegerif, R., Mercer, N. and Rojas-Drummond, S.M. (2001) 'Reconceptualizing 'scaffolding' and the zone proximal development in the context of symmetrical collaborative learning', *Journal of Classroom Interaction*, 36: 40–54.

- Flower, L. and Hayes, J. (1980) 'Identifying the organization of writing processes', in L. Gregg and E. Steinberg (eds.) *Cognitive Processes in Writing*, Hillsdale: Erlbaum.
- Galton, M., Simon, B. and Croll, P. (1980) *Inside the Primary Classroom (The ORACLE Report)*, London: Routledge and Kegan Paul.
- Guzmán, C.K. and Ibarra, I. (2003) 'Desarrollo de estrategias de colaboración y comprensión de cuentos dentro de una innovación educativa', unpublished thesis, National Autonomous University of Mexico.
- Halliday, M.A.K. (1985) *An Introduction to Functional Grammar*, London: Arnold.
- Hernández, F. (2008) 'El proceso discursivo en la composición de textos argumentativos en alumnos de 5o año de primaria: una perspectiva teórica de Bajtín y Vigotsky', unpublished thesis, National Autonomous University of Mexico.
- Hymes, D. (1972) 'Models of interaction in language and social life', in J. J. Gumperz and D. Hymes (eds.) *Directions in Sociolinguistics: the ethnography of communication*, London: Basil Blackwell.
- Instituto Nacional para la Evaluación de la Educación [INEE] (2006) *El aprendizaje de la expresión escrita en la educación básica en México*, Mexico: INEE. Online. Available HTTP: <<http://www.inee.edu.mx/>> (accessed 20 September 2007).
- (2007) *El aprendizaje en tercero de primaria en México*, Mexico: INEE. Online. Available HTTP: <<http://www.inee.edu.mx/>> (accessed 27 September 2007).

- Jewitt, C. (2005) 'Multimodality, 'reading' and 'writing' for the 21st century', *Discourse: studies in the cultural politics of education*, 26: 315–331.
- Kaufman, A.M. and Rodríguez, M.A. (2001) *La escuela y los textos*, Buenos Aires: Santillana Aula XXI.
- Lyle, S. (2008) 'Dialogic Teaching: Discussing theoretical contexts and reviewing evidence from classroom practice', *Language and Education*, 22: 222-240.
- Littleton, K. and Häkkinen, P. (1999) 'Learning together: Understanding the processes of computer-based collaborative learning', in P. Dillenbourg (ed.) *Collaborative Learning: cognitive and computational approaches*, Pergamon: Oxford.
- Littleton, K., Miell, D. and Faulkner, D. (eds.) (2004) *Learning to Collaborate, Collaborating to Learn*, New York: Nova Press.
- Maybin, J. (2003) 'Voices, intertextuality and induction into schooling', in S. Goodman, S. Lillis, J. Maybin and N. Mercer (eds.) *Language, Literacy and Education: a reader*, Staffordshire, UK: Trentham Books.
- Mazón, N., Rojas-Drummond, S.M. and Vélez, M. (2005) 'Efectos de un programa de fortalecimiento de habilidades de comprensión de textos en educandos de primaria', *Revista Mexicana de Psicología*, 22: 91-102.
- Mercado, R., Rojas-Drummond, S.M., Weber, E., Mercer, N. and Huerta, A. (1998) 'La interacción maestro-alumno como vehículo del proceso de enseñanza-aprendizaje en la escuela primaria', *Morphé*, 8: 15–16.

- Mercer, N. (1995) *The Guided Construction of Knowledge: talk amongst teachers and learners*, Philadelphia: Multilingual Matters.
- (2000) *Words and Minds: how we use language to think together*, London: Routledge.
- Mercer, N., Fernández, M., Dawes, L., Wegerif, R. and Sams, C. (2003) ‘Talk about texts; using ICT to develop children's oral and literate abilities’, *Reading, Literacy and Language*, 37: 81–89.
- Mercer, N. and Littleton, K. (2007) *Dialogue and the Development of Children's Thinking: a socio-cultural approach*, London: Routledge.
- Mercer, N., Wegerif, R. and Dawes, L. (1999) ‘Children's talk and the development of reasoning in the classroom’, *British Educational Research Journal*, 25: 95–111.
- Organisation for Economic Cooperation and Development [OECD] (2001) *Knowledge and skills for life: First results from PISA 2000*, Paris: OECD. Online. Available HTTP: <<http://www.caliban.sourceoecd.org>> (accessed 27 January 2007).
- (2004) *Learning for tomorrow's world: First results from PISA 2003*, Paris: OECD. Online. Available HTTP: <<http://www.pisa.oecd.org/document/55/0,2340>> (accessed 27 January 2007).
- Paul, W.J.E. (2005) ‘Beliefs and practices of high school biology teachers: a case study of communities of practice’, unpublished doctoral thesis, DIE-CINVESTAV-IPN.

- Peon, M. (2004) 'Habilidades argumentativas en alumnos de primaria y su fortalecimiento', unpublished doctoral thesis, National Autonomous University of Mexico.
- Rogoff, B. (1990) *Apprenticeship in Thinking: cognitive development in social context*, New York: Oxford University Press.
- (2003) *The Cultural Nature of Human Development*, London: Oxford University Press.
- Rojas-Drummond, S.M. (2000) 'Guided participation, discourse and the construction of knowledge in Mexican classrooms', in H. Cowie and D. van der Aalsvoort (eds.) *Social Interaction in Learning and Instruction: the meaning of discourse for the construction of knowledge*, Exeter: Pergamon Press.
- Rojas-Drummond, S.M., Albarrán, D. and Littleton, K. (2008a) 'Collaboration, creativity and the co-construction of oral and written texts', *Thinking Skills and Creativity*, 3: 177-191.
- Rojas-Drummond, S.M., Gómez, L.M., Márquez, A.M., Olmos, A., Peon, M. and Vélez, M. (1999) 'Desarrollo de macroestructuras en niños de primaria', *Estudios de Lingüística Aplicada*, 17: 13-32.
- Rojas-Drummond, S.M., Gómez, L. and Vélez, M. (2008b) 'Dialogue for reasoning: Promoting exploratory talk and problem solving in the primary classroom', in B. van Oers, W. Wardekker, E. Elbers and R. van der Veer (eds.) *The Transformation of Learning. Advances in Cultural-Historical Activity Theory*, Cambridge, MA: Cambridge University Press.

- Rojas-Drummond, S.M., Hernández, G., Vélez, M. and Villagrán, G. (1998) 'Cooperative learning and the acquisition of procedural knowledge by primary school children', *Learning and Instruction*, 3: 37–61.
- Rojas-Drummond, S.M., Mazón, N., Fernández, M. and Wegerif, R. (2006) 'Explicit reasoning, creativity and co-construction in primary school children's collaborative activities', *Thinking Skills and Creativity*, 1: 84–94.
- Rojas-Drummond, S.M., Mazón, N., Gómez, L. and Vélez, M. (forthcoming) 'Oracy and literacy in the making: The collaborative creation of macrostructures by primary school children', to be submitted to *Reading Research Quarterly*.
- Rojas-Drummond, S.M. and Mercer, N. (2003) 'Scaffolding the development of effective collaboration and learning', *International Journal of Educational Research*, 39: 99–111.
- Rojas-Drummond, S.M., Mercer, N. and Dabrowski, E. (2001) 'Teaching-learning strategies and the development of problem solving in Mexican classrooms', *European Journal of Psychology and Education*, 16: 179–196.
- Rojas-Drummond, S.M. and Peon, M. (2004) 'Exploratory talk, argumentation and reasoning in Mexican primary school children', *Language and Education*, 18: 539–557.
- Rojas-Drummond, S.M., Pérez, V., Vélez, M., Gómez, L. and Mendoza, A. (2003) 'Talking for reasoning among Mexican primary school children', *Learning and Instruction*, 13: 653–670.

- Scardamalia, M. and Bereiter, C. (1986) 'Research on written composition', in M. Wittrock (ed.) *Handbook of Research on Teaching*, MacMillan: London.
- Sharples, M. (1999) *How We write: writing as creative design*, London: Routledge.
- Skidmore, D. (2006) 'Pedagogy and dialogue', *Cambridge Journal of Education*, 36: 503–514.
- Teasley, S. (1995) 'The role of talk in children's peer collaboration', *Developmental Psychology*, 3: 207–220.
- van Dijk, T.A. and Kintsch, W. (1983) *Strategies of Discourse Comprehension*, New York: Academic Press.
- Vass, E. (2004) 'Understanding collaborative creativity: Young children's classroom-based shared creative writing', in D. Miell and K. Littleton (eds.) *Collaborative Creativity*, London: Free Association Books.
- Vass, E., Littleton, K., Miell, D. and Jones, A. (2008) 'The discourse of collaborative creative writing: Peer collaboration as a context for mutual inspiration', *Thinking Skills and Creativity*, 3: 192-202.
- Vygotsky, L.S. (1978) *Mind in Society*, Cambridge, MA: Harvard University Press.
- Wegerif, R. and Dawes, L. (2004) *Thinking and Learning with ICT: raising achievement in primary classrooms*, London: Routledge.
- Wegerif, R. and Mercer, N. (1997) 'A dialogical framework for researching peer talk', in R. Wegerif and P. Scrimshaw (eds.) *Computers and Talk in the Primary Classroom*, Clevedon: Multilingual Matters.

Wegerif, R., Mercer, N. and Dawes, L. (1999) 'From social interaction to individual reasoning: an empirical investigation of a possible socio-cultural model of cognitive development', *Learning and Instruction*, 9: 493–516.

Wegerif, R., Pérez, J., Rojas-Drummond, S., Mercer, N. and Vélez, M. (2005) 'Thinking together in México and the U.K.: a comparative study', *Journal of Classroom Interaction*, 40: 40–48.

Wegerif, R., Rojas-Drummond, S. and Mercer, N. (1999) 'Language for the social construction of knowledge: comparing classroom talk in Mexican pre-schools', *Language and Education*, 13: 133–151.

Wertsch, J.V. (1991) *Voices of the Mind: a sociocultural approach to mediated action*, Cambridge, MA: Harvard University Press.

Zúñiga, M. (2007) 'La escritura colaborativa de cartas en alumnos de 5° de primaria: un estudio de su correspondencia electrónica con alumnos méxico-americanos', unpublished thesis, National Autonomous University of Mexico.