CHILDREN'S TALK IN COLLABORATIVE SETTINGS

by

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Abstract
This study describes children's talk in collaborative settings. It illustrates conversations between students as they participate in writing, problem solving, and music composition activities. The study discusses the features of collaborative talk, describes the ways that students participate in groups, and offers a rationale for supporting the development of this speech genre in children. As well, it is an account of one teacher's experience with action research. It provides commentary on shifting beliefs and their implications for practice. Using a case study design, four participants aged eight and nine years old were observed in their classroom setting. A total of seven lessons in Mathematics, Science, Language Arts and Music were recorded. Children participated in both teacher-posed problem activities and student-designed, self-directed experiences. Methods of analyzing the data were adapted from two sources: Barnes and Todd's (1977) analysis of discourse moves and Well's (1983) system of insightful observation and analysis.
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This thesis has been an important part of my journey in coming to know more about myself as teacher/learner. I am grateful to, Marilyn and Jim for their comments and suggestions, to Patrick for his patience and wise words that have encouraged me to stretch my thinking, to Bev, Daphne, Pauline, Gail, Evelyn, Drew and to my mother, Angelita for her support.
1 Collaborative Talk
This is an investigation of children's talk in collaborative settings. In this study, I focus on four nine and ten year-old students from my Grade Three/Four class and examine the ways in which they participate in small groups. I discuss how each has benefited from working with peers, describe the types of negotiations that take place during these episodes and consider the role that collaborative talk plays in facilitating their learning. I hope to provide the reader with a glimpse of the nature of talk in small group settings, the contexts which promote collaborative talk and the implications of these for both teachers and learners. As well, this study is a reflection of my journey as a neophyte teacher-researcher.

Three summers ago, I was introduced to the idea of teacher research when Gordon Wells came to our school district to facilitate a seminar on action research and active learning. I became interested in this inquiry approach to problem solving because it gave me a new perspective on my role as classroom teacher. I began to look more critically and curiously at problematic situations and started to track my experiences by recording them in a journal. Later, as I re-read these field notes, I became aware of patterns in the students' behaviors and in my teaching style. One question led to another and soon I was exploring a different aspect of school life. Wearing this new hat of teacher-researcher has
encouraged me to listen more acutely to the heartbeat of my classroom, and to look for a closer match between my agenda and individual student needs. Another attraction that action research has for me is the feeling of autonomy I experience. As a consequence of this investigative attitude, I participate in my classroom more as an innovator than as a technician who applies someone else's pre-designed programmes. Stenhouse (1975) contends that action research lends us an eye to see for ourselves. My own experience has certainly confirmed that. However, it also raised some concerns about the validity of this type of informal data collection and analysis. As a result, I became more interested in qualitative research methods, and wanted to explore the process of naturalistic data collection and analysis more intensively.

By engaging in action research, I have learned that inquiries are guided by a curiosity that emerges from the context of one's setting. For example, in my own classroom, I have noticed that my students consistently choose to work in pairs or small groups, rather than individually, when offered the opportunity to do so. I wondered what it was about collaborative group work that was so appealing to children? More specifically, I was curious about the nature of the talk that goes on during these collaborative experiences. As a practitioner who is moving towards a socio-cultural

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perspective of teaching and learning where talk is central to all learning, I believe that if I am to maximize opportunities for all students to engage in discourse for the purpose of meaning-making, it is critical for me to be aware of how children in my classroom use talk in collaborative settings.

In a paper presented at the International Convention on Language and Literacy in April, 1991, Gordon Wells pointed out the scarcity of research in the area of talk. The studies that have surfaced generally treat talk as a vehicle that lends insight to issues of teaching and learning. The contexts that encourage such collaborative discourse are rarely the central focus of these investigations. Wells offers several reasons for this state. He suggests that although traditional and progressive classrooms are rooted in philosophically diverse assumptions, they share a critical conception about knowledge. Both perceive knowledge as individual constructs that learners possess and retain within their domain. Whether teacher-transmitted or individually constructed, knowledge ultimately belongs to the individual learner. This notion implies that the primary purpose of language is to communicate what the learner knows or to mediate the transmission of information. In these situations, language is not often used for collaborative meaning-making. In fact, given these conceptions of knowledge, learners are rarely invited to make their own sense
of meaning, nor are there opportunities to develop shared understandings in collaboration with others through discourse (Lemke, 1989). Wells points out that there are few studies that focus on types of tasks that promote talk in dialogic, inquiry-based settings where knowledge is co-constructed through social interactions between learners.

This study describes children’s negotiations in small group settings, and investigates the nature of talk in these collaborative contexts. It examines the types of talk that children engage in during group work and discusses the learning that results from these collaborations. Further, it offers a narrative retracing of the journey I have taken as I began to shift my understandings about the role of talk in learning and about the notion of knowledge as a socio-cultural construct.

I have reflected on the implications of these ideas on my practice and have begun to devise plans for adjustments that are appropriate to my particular setting. Much of teaching is about fine tuning the balance between the teacher’s and students’ expectations. I see action research as a way of doing just that. James Britton (1987) considers classroom inquiries a quiet form of research much like the process of discovery. “It cannot be said too often that effective teaching depends upon
the concern of every teacher for the rationale by which he or she works. " (p.15).

Newman (1991) discusses the ways in which critical incidents or particular teaching episodes lend insight and inspire teachers towards reflection and action. A critical incident occurred for me during one of my observations of children at the dramatic playing center. A small group of three children had initiated a role play about going shopping. One child took on the role of storekeeper, while the other two played at being the customers. They were soon joined by three boisterous children who, in an attempt to gain forcible entry into the drama pretended to be bandits, holding up the storekeeper and demanding all the cash. While the child acting as the storekeeper vehemently protested out of role, one of the customers quickly switched into the role of policewoman and attempted to arrest the masked bandit. The other "customer" took the cue and came to the policewoman’s assistance while a martial arts play fight ensued as the other bandits joined in.

My first reaction was of course to stop the fighting, but as I watched behind the camera, the children seemed to sort things out on their own and the role play continued with the shopkeeper and the police in pursuit of the bandits. What this episode triggered in me was a curiosity about how children use language to negotiate meanings and solve problems connected
to their social relationships. I became interested in the types of talk that occur as children work in partners or small groups and wondered what they were learning as they talked to each other and worked collaboratively on various self-directed activities. This was how an action research project about talk in collaborative settings emerged from my classroom context.

Stenhouse (1980) defines action research as "systematic and sustained inquiry, planned and self-critical" (p.113). Carr and Kemmis (1986) believe that "Action research is simply a form of self-reflective inquiry undertaken by participants in social situations in order to improve the rationality and justice of their own practices, their understanding of these practices, and the situations in which these practices are carried out." (p.162) For Kemmis (1991), if educational research is to make any impact in the field, teachers must be an active part of the research process.

Education is a social and cultural activity which requires a very active form of participation by teachers and learners whose own interests and intentions must be taken into account in the act of education; they must interpret the language, activities and social relationships of education for themselves... Education requires that the people involved are active agents in the process, not just

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passive subjects in or objects of others' curriculum interventions into their lives. (p.58)

Connelly and Clandenin (1988) offer a similar dialectical conception of curriculum. In their view, it is the teacher's personal knowledge that makes the curriculum significant. They contend that through the narratives of our experiences, we can reflect and make sense of curriculum: "For each of us, the more we understand ourselves and can articulate reasons why we are what we are, do what we do, and are headed where we have chosen, the more meaningful our curriculum will be. " (p. 11) For me, conducting this research invited me to examine an aspect of my practice. My intention was to gain a deeper understanding of the relationship between language and learning, of the process of learning through language and to make adjustments in my practice where necessary.

McKernan (1991) offers a summative definition of action research.

Action research is the reflective process whereby in a given problem area, where one wishes to improve practice or personal understanding, inquiry is carried out by the practitioner-first to clearly define the problem; secondly to specify a plan of action-including the testing of hypothesis by application of action to the problem. Evaluation is then

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undertaken to monitor and establish the effectiveness of the action taken. Finally, participants reflect upon, explain developments, and communicate these results to the community of action researchers. Action research is a systematic self-reflective inquiry by practitioners to improve practice. (p.5)

**Shifting Research Paradigms**

Throughout much of educational research, the positivist perspective, which assumes a single objective reality that exists separately from the beliefs and feelings of individuals, has focused on the prediction of relationships between learning and teaching. Intentions to control variables, make precise measurements, and replicate studies faithfully, have led to a cult of scientific validity that assumes non-researchers will unquestioningly implement findings. Invariably, teachers are rendered powerless, and their responsibilities reduced to applying and implementing pre-packaged curricula.

Giroux (1981) has criticized the culture of positivism because of its idealization of neutrality, its claims to objectivity and value-free outcomes, and its decontextualized ideology. He argues that it is impossible to attempt to separate values from social research. “Objectivity” is not in any real sense objective at all since it carries with it the beliefs and

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assumptions of not only the researchers, but the socio-political context that precedes and situates it, as well. Biases, Giroux contends, are indeed present in empirical studies. They are simply hidden and implicit in the research. Positivism allows no place for reflecting on its own assumptions and because of this lack of self-criticism, it ultimately promotes the status quo. This is not an ideology that supports change. Another problem with positivist research, Giroux points out, is the conception of knowledge as an objective, external body of information that exists independently of human experience. This decontextualization leads to a devaluation of personal meaning-making and downgrades the importance of assuming responsibility for one’s actions. According to Giroux, positivism promotes forms of domination, hierarchy, and control.

As we approach a new era in educational theory, where shifting values are leading towards a more transformational approach to teaching and learning, research methods with philosophical assumptions that match these pedagogical inclinations are necessary. Because of the ways that naturalistic studies propose that social phenomena be studied in their undisturbed, natural states, because of the assumptions about context being a critical element in the analysis of data, and because of the relevance of the personal perspectives of
research participants, naturalistic methodology seems an appropriate choice for studying educational settings when exploring relationships beyond cause and effect are the predominant objectives and when critical self-analysis with an eye towards change is a goal.

A key element of this type of research is for the researcher to be able to provide detailed descriptions of the social settings under observation in order to become aware of what people do and say and why they do it. Geertz (1973) believes that it is only through “thick”, detailed, contextualized descriptions of the concrete experiences of the participants and of the rules and social patterns within a culture that the construction of an account of that culture is made possible. The task of cultural description then becomes a primary focus for naturalistic studies. As Hammersley and Atkinson (1983) note, “...any account of human behavior requires that we understand the social meanings that inform it.” (p. 9)

In this paper, I will describe the setting in which this study takes place and discuss the social milieu or school climate at the time of the study. I will also provide the reader with an account of the methods used to collect and analyze the data. As well, I will discuss the underlying assumptions about the role of language in the development of understanding in order to situate this study within specific pedagogical parameters. I
will then present four case studies of students talking and learning in collaborative settings, describe the ways that they participate in groups, and discuss implications of these observations. Finally, I will share my reflections of the impact this study has had on both my beliefs and my practice, and I will briefly retrace and discuss the process of conducting qualitative research.
Talk About the Settings
The School

This study took place at XYZ Elementary, a “dual track” school in a suburban neighbourhood of a large Canadian metropolitan city. XYZ’s population was comprised of 150 French Immersion programme students and 240 English programme students. While almost all the English track students lived in the school’s catchment area, the opposite was true for the children attending the French Immersion track in that almost all were from outside the immediate neighbourhood.

Having participated in a school accreditation process two years prior to this study, the staff identified four whole-school goals to work towards: These goals were:

1. To use strategies and materials that promoted active learning.
2. To improve the school climate by developing social responsibility.
3. To enhance the parent/school partnership.
4. To support these goals through the professional development programme.

Children in all classrooms were affected either directly or indirectly by the staff focus on these goal areas. In my classroom, the school emphasis on active learning resulted in increased parent support for these types of activities,
particularly for group work, which in the past had been questioned by some parents. Focusing on the goal of social responsibility also improved the general school and classroom climates. Children were encouraged to respect each other and were explicitly taught how to work collaboratively. Staff were encouraged to use a discursive problem solving model with children during conflict resolution. As a result of the increased attention to the goal of social responsibility, both staff and students began to value diversity overtly in the classroom and to express appreciation for different learning styles.

The Classroom

The children in my classroom were usually seated in "base groups" of four to six members and were sometimes required to work within these groupings. On many occasions, however, they selected their own working groups, usually by choosing friends. At other times, I assigned students to work together, using criteria such as: verbal ability, gender balance, personality combinations, learning styles, literacy abilities or interests in subject matter to create the groupings. Unless specifically required to work with their base group, children often chose to sit in different areas of the room. The classroom was designed to accommodate active learning using manipulatives and centers such as a Drama Corner, a Library,
a Writing Center, an Art Area, a Science Exploration Center, and a Math Investigation Center.

At the time of the study, a 40-minute block was scheduled each afternoon for students to select self-directed activities by attending their choice of these centers. Other times during the day combined a balance of teacher-directed and student-initiated tasks in Language Arts, Mathematics, Social Studies, Science and Fine Arts. Activity groupings varied and students sometimes worked individually or in pairs or small groups. Throughout the day, discussion times were built-in after working periods so that children could share their thinking or their products with other members of the class. Learning Assistance support was provided on a daily basis using the in-class instruction model. English as a Second Language assistance was offered during one 40-minute block per week also using the in-class support model.

The Participants: The Adults

Throughout the course of the study, as the classroom teacher I played the dual role of participant/observer. I was both "an insider", a member of the group that I was studying and "an outsider", an observer of the group that I belonged to. I had been teaching for thirteen years and had been at XYZ Elementary for three of those, when the research began. I was responsible for the instruction of twenty-five grade three and
grade four students in all subjects. By the spring of that year, when I began collecting the data, I had known most of those children for nine months, with the exception of seven students whom I had taught the previous year. On two occasions, two adults participated in the study by being involved in some of the discussions with children. One adult was a resource teacher who supported these students in the classroom, helping them with their learning throughout the year for one block a week. Another teacher was a guest who visited the classroom for the purpose of assisting with the video taping. This teacher was a consultant for the district whom the children met for the first time during the taping of the math problem solving session.

The most consistent interaction that the students had with an adult was with myself, their classroom teacher. Because I was interested in what happens during small group discussions when I was not present, I consciously avoided participating in any of the discussions which were being considered for this study. The extent of my direct involvement varied from assigning the tasks, to providing opportunities for the children to participate in self-directed small group work, to managing the class as a whole. This style was not too different from my normal interactions with students when collaborative tasks had been assigned. During this small group work time, I usually observed or participated in one or two of the discussion
groups by offering questions or by reflective listening. Other groups were accustomed to working on their own since I was often not able to interact with all the groups during any one session.

The Participants: The Children

The children came from diverse cultural backgrounds. Nine children spoke a language other than English at home. In this combined class of eighteen fourth graders and nine third graders, the children ranged in age from eight to eleven years old. Consent to participate in the study was obtained in writing from both the students and their parents. Only one child chose not to participate, stating her reason as camera shyness. Seven of these grade four students had been in my classroom the previous year in third grade. Collectively, they presented a composite of learning styles. When given the opportunity to do so, many of these students preferred to work in pairs or small groups of friends. One child had a distinct preference for working individually; one other tended to work alone, though not often by choice. Most of the children enjoyed active, hands-on type activities. Some preferred more abstract activities such as reading and writing over work with manipulatives. These preferences became obvious to me as children made choices about which activities to participate in during ‘centers’ time when they were offered opportunities to
work and play in a variety of self-directed activities such as the drama corner, the art center, the library, the writer's workshop, a musical instrument center, science exploration center, etc.

As in any random grouping, some children were more verbal than others, while some were more able to express their thinking more effectively through drawing than through writing or speaking. Some children were more energetic, more dominant than others, some were less active, more passive. Many of these children had attended XYZ Elementary for all or most of their school careers. Three children were new to the school that year. All of the children were generally enthusiastic about participating in the study. The attraction seemed to be the opportunity to be video taped and the promise of watching themselves on tape later. Some children consented to participate because their friends were doing so. Their responses were overheard in several conversations as children discussed whether or not they would sign the letter of consent. Only one set of parents withheld permission for their child to participate in the study. After the novelty of being filmed and the self-consciousness of being on stage wore off, the children resumed their "off camera" personae, and proceeded to treat the video machine and tape recorders as standard classroom equipment.
During the first taping sessions, I began filming a number of different children working and playing at various activities. In time, a few children emerged as the primary participants. These children were: Mara, Joey, David and Jerrod. I noticed that these four were as a rule, more engaged and animated in the activities than the others. They tended to have a wider variety of interests manifested by their choice of activities. They also tended to be more verbal than some of their peers during group work. Three of them, Joey, David and Jerrod had been with me since third grade. I then began to follow these students around the classroom, and recorded them participating in a variety of settings. Profiles of these children and analyses of how they use language in collaborative settings are discussed in the next section.
Collecting and Analyzing the Talk
Gathering the Data

Consistent with naturalistic methodology I adopted a participant-observer approach which is an accepted and well established method of classroom research. (McKernan 1991; Goetz & LeCompte, 1984) One of the greatest advantages of this technique is that it affords the researcher opportunities to collect and verify authentic accounts from the field under observation. Further, as a true participant, the researcher has an intuitive feel for what it is like to be an actor in that particular social setting. Care was taken however, to distance myself from the data in order to be able to treat it as "anthropologically strange". Hammersley and Atkinson (1983) discuss the importance of making the familiar seem foreign in a effort to make explicit the assumptions one might take for granted as a member of the culture under investigation.

The primary goal of my fieldwork was to collect samples of students' talk as they engaged in collaborative activities. In total approximately seven hours of audio and video tape were collected. Seven lessons were recorded. These involved the primary participants, Mara, Joey, David and Jerrod as well as other children in a variety of settings ranging from teacher-directed, teacher-posed problem situations to student-designed, self-directed activities in Mathematics, Science, Music and Language Arts. All lessons took place in group

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settings where children worked with up to six other students. The data collection occurred over a period of two months, in the Spring of 1993.

**Analyzing the Data**

The method of analysis used was adapted from two main sources. These were Barnes and Todd's (1977) analysis of discourse moves, and Wells' (1983) system of what Stubbs and Robinson (1979) have referred to as “insightful observation”. Although Stubbs and Robinson have criticized Wells' type of analysis as commentary that tends to be too subjective and lacking in rigor, Edwards and Mercer (1986) support these methods as ones which are more likely than Sinclair and Coulthard's (1975) discourse analysis to reveal the cognitive-educational functions of classroom discourse. This is due in part, to the emphasis that these methods place on valuing the context in which the talk occurs as a critical element that contributes to the overall understanding of discourse.

In the analysis of the data, I focused mainly on the primary participants, Mara, David, Jerrod and Joey. I looked at samples of their talk in different settings and tried to find common themes. The narratives that follow present episodes of the talk during small group activities and describe from different perspectives, the ways that these children use
language to negotiate meaning, solve problems and develop shared understandings.

I also used the following questions as guidelines. Some of these have been adapted from Wells’ and Chang (1988) own method of analyzing classroom talk sequences.

• What are the children talking about?
• How do they talk about these things?
• What strategies do they use to negotiate meaning?
• What forms of language do they use?
• What aspects of the talk are collaborative?
• Under what conditions is talk collaborative?
• What preconditions must exist in order for the talk to be collaborative?
• When the talk does not move in collaborative directions, what is missing?
• What are children learning as they talk?
• How did the participants benefit from the discussion?
• How are the participants contingently responsive to each other?

Notes regarding children’s actions and behaviors were made directly beside the transcribed talk. This permitted me to examine the utterance in terms of what Barnes and Todd (1977) describe as its interaction frame, (descriptions of the moves that manage the social situation) as well as its content frame,
(descriptions of intentions and meanings). Once this task was completed, I then reexamined the annotated transcriptions for patterns in the different purposes for which language was used, for episodes of collaborative talk and for features of the context, such as participants' needs, their perceptions and the implicit and explicit understandings that influenced the discourse. At the conclusion of each section, I summarized how the children had benefited from these collaborative encounters and discussed the implications for practice.

The Role that Context Plays in the Analysis of Discourse:

Language is context bound (Halliday & Hasan, 1989; Lemke, 1989; Wells, 1991). In this complementary relationship, contexts shape meaning and meaning regulates the parameters of the situation (Wells, 1991). Malinowski, in his description of life among the Trobriand Islanders, realized the difficulty in translating discussions he had with the Islanders without first describing their culture, i.e., their context. Information about what was happening at the time as well as the total cultural background was essential for understanding the significance of the discussions. In this way, Malinowski constructed an important principle of sociolinguistics: that all language can only be understood within its context of situation (Halliday & Hasan, 1989).
This study describes the collaborative context of children talking and learning through different classroom activities. It analyzes the features of those settings and activities that contribute to the engagement of learners with their meaning-making process.

Halliday (1989) identifies three features of the context of situation:

1). Field of discourse: describes what's happening, the nature of the social action and what the participants are doing.

2). Tenor of discourse: looks at who's involved, what the relationships between participants are; what their status and roles are.

3). Mode of discourse: refers to the goals and purposes of language and what the participants perceive those goals to be. It also refers to the symbolic organization of the text, its function in the context and whether it is written or spoken.

This study reflects Halliday's framework in describing the talk in collaborative settings. It investigates the nature of the field, the contexts, the activities and discusses the types of talk that enable learners to exchange and to construct meanings. The goals of the setting, the perceptions of participants, and the purposes for which language is used are described. Variations in the role relationships between participants are also examined as appropriate.

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Talk and Learning

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The Role of Language in the Development of Understanding

Talk is central to learning (Bruner, 1984; Edwards & Mercer, 1987; Edwards & Westgate, 1987; Halliday & Hasan, 1989; Kress, 1989; Lemke, 1989; Wells, 1991). Learning is a social enterprise (Berger & Luckman, 1966; Bruner, 1986; Wells, 1991; Vygotsky, 1978 & 1986) and as such, involves the transmission of culture and its inherent values and processes. According to Vygotsky, (1986) language is more than a medium of transmission. It is a tool which shapes thought. In the past, there have been attempts to separate language and experience, and as a result of this view, language teaching in schools has been concerned primarily with the learning of rules, grammar, and form (Christie, 1989). An alternative view, held by sociolinguists and sociocultural theorists, suggests that language is a social process intricately woven with the beliefs, experiences and contexts of its participants. It is a resource for deriving and negotiating meanings that construct, organize and mediate our social experiences (Halliday, 1989; Bruner, 1986; Kress, 1989).

For Vygotsky, individual consciousness is rooted in the social process (Wertsch & Stone, 1985). Vygotsky's belief that internalization of mental functions originates first on the intermental, social plane then later on the intramental, psychological plane, influences much of sociocultural theory.
today. Language plays an important role from this point of view. It is through language, in a social setting that an individual acquires the mechanisms and structures necessary for thought. Vygotsky's studies of the development of the skill of categorizing in young children led him to the conclusion that, "the levels of generalization in a child correspond strictly to the levels of development in social interaction. Any new level in the child's generalization signifies a new level in the possibility of social interaction" (In Werstch & Stone, 1985 p. 168).

Vygotsky also analyzed the interrelated development of word meaning and social interaction. Distinguishing between meaning and referent, Vygotsky maintains that the meaning of a word and its referent object are two distinct expressions. He argues that in the early stages of language development, a child's use of a referent as an indicator can easily be mistaken for the child's understanding of its meaning. In many situations, agreement of the referent has allowed the child an entry point into the conversation when in actual fact, the child has not yet grasped the meaning of the word. This analysis convinced Vygotsky that the child's use of "pseudo concepts" and the transitions to "concepts" were essentially social in their genesis. It is through interaction with adults that the child appropriates the necessary tools for thinking. What this
implies is that language plays a critical role in the formation and development of concepts and that this process is necessarily a social one. Children use language to define and internalize reality and it is their experience with language that shapes and limits their conceptual understandings. From a Vygotskian point of view, internal constructs are reflections of the external, social dimensions of language. This notion puts language teaching at the forefront of the curriculum because if conceptual development hinges on an ability to use language, then in those cases where one's language experiences are constricted, conceptual development will also be.

**Meaning and Context**

In order for a message to be understood, information about the context is necessary. Meanings are context bound. Edwards and Westgate (1987) believe that "no talk can be interpreted without reference to its context..." (p.178). Meanings are influenced by the physical situation, the texts that precede it, who the participants in the conversation are, any behaviors or gestures conveyed, the nature of the social occasion and the shared mental perceptions and assumptions of the persons involved. Even more than that, contexts are continuously being negotiated and defined throughout the discourse. (Edwards & Westgate, 1987). Without the presence of a context, talk becomes a series of unintelligible utterances.
Learning through talk then, is also highly context dependent. The extent to which new ideas are appropriated and constructed depends on the shared understandings between the participants. "We can say that the process of education, in so far as it succeeds, is largely the establishment of these shared mental 'contexts', joint understandings between teacher and children, which enable them to engage together in educational discourse" (Edwards & Mercer, 1987, p. 69). For Halliday (1989), "all learning is a process of contextualisation" (p.49). If the learner is to make meaningful connections, a context in which to embed those connections is an imperative. Different contexts that mediate the development of understandings include:

1. Context of situation: describes the field (what's happening), the tenor (who's involved) and the mode of the text (what part language is playing).
2. Context of culture: deals with the ideological perspectives that define its interpretation.
3. Intertextual context: relates to the beliefs and assumptions which prior texts hinge upon and the relationship between the texts.
4. Intratextual context: involves the coherence of the text itself within its internal linguistic structure.

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Hasan (1989), like Halliday, points out the interconnections between context and meaning and suggests that text (functional language) and context are so closely related, it is difficult to discuss one without referring to the other. This reciprocal relationship between language and its situations implies that participants can make meaning of the interaction from information about the situation and conversely, understand the situations more clearly from information offered through language (Halliday 1989). Wells (1991) develops this idea further by arguing that the context of thepreceding talk influences what follows it in two important ways:

1. Through the conversation, participants establish a collection of words and phrases that they agree to use during the rest of the discussion.
2. By collaboratively creating a linguistic structure, subsequent turns will repeat those forms and thus enable participants to predict meanings.

What this implies for talk in classrooms is that the more we know about the situations that facilitate dialogue and particularly the kind of talk that builds common knowledge, the better skilled we will be at promoting discourse that develops shared understandings.
Developing Shared Understandings Through Discourse

There are numerous studies on classroom discourse, focusing either on the teacher or the learner. Only more recently, however, have studies begun to investigate the role of talk in the development of shared understandings. (Edwards & Mercer, 1987; Mercer, Edwards & Maybin 1988; Wells 1992). What exactly happens as learners interact with adults in a problem solving situation where the goals are to construct meaning? How do peers collaborate and communicate in classroom settings to convince others, to clarify their own thinking, to justify their point of view? These are questions that are now being addressed.

During much of the talk that occurs in classrooms, pupils are the recipients of knowledge, teachers, the dispensers. Constraints are placed on what students can say and mean and how they might do so (Edwards & Westgate, 1987). Many of the questions asked by teachers are ones to which they already know the answers (Edwards & Furlong, 1978; Edwards & Mercer, 1987; Mehan, 1979) and students are aware of this and accept it as part of classroom discourse structure (Edwards, 1990; Edwards & Furlong, 1978; Edwards & Westgate, 1987). Teachers believe that this ritual elicitation of knowledge through pseudo-questioning helps students form concepts and clarify their thinking. However, as Edwards and Mercer (1987)
point out, there is no convincing research that proves that questions stimulate thought and discussion. Why then do we persist with this discursive style? Questions that don't seek genuine answers are posed for different reasons. It seems that through this format, teachers are able to maintain control of the flow of information, direct pupils' thinking and actions, and initiate, extend and control classroom conversation (Dillon, 1982; Edwards & Furlong, 1978; Hammersley, 1977; Mehan, 1979b). Still in many places, a teacher's competence is judged by his/her ability to maintain control over classroom talk. Even when students are put in small groups for the purpose of discussion, this arrangement is more of an organizational tactic than for the purpose of facilitating collaborative talk that develops shared meaning (Bennet et al, 1984). Identifying the dynamics of this particular type of performance-oriented, non-collaborative classroom discourse allows us to compare its features with those of discourse that collaboratively builds shared understandings.

What then are the benefits of collaborative talk? From a Vygoskyan perspective, all cultural knowledge, as well as the higher mental functions are acquired through social interaction, specifically, through talk. It is in collaboration with a more expert adult or peer that the novice gradually acquires competence in the task or builds an understanding of a
concept. Wells (1990) goes further and asserts that more than participation is necessary. Talk about the task is a critical aspect of what he calls "cultural apprenticeship." Perhaps one of the most salient features of collaborative discourse is the equal status of the participants throughout the conversation. Although one may be more expert than the other in terms of experience, there is no effort by one or the other to control the direction of the dialogue nor is there a hierarchy in the turn taking. Both participants are more or less equal partners. Because of this, the dialogue is not a guessing game between the participants and if questions are posed, they genuinely seek information and are not control mechanisms.

Wells has frequently pointed out how many conversations between parent and child offer clear examples of this dialogic collaboration. Both parent and child talk about topics of mutual interest; the adult's role is one of "contingent responsiveness," seeking to discover the child's intentions then making contributions that extends the child's comment (Wells, 1990b). Edwards (1990) notes that collaborative discourse has a similar structure to argument. He contends that argument as a form of thought contributes to developing shared understandings as the speakers clarify their positions, consider the others' perspectives, and make a subsequent contribution based on the previous information offered by the partner.
For all these reasons and countless more, fostering collaborative talk in classrooms is an important means of ensuring that learning is indeed occurring. Because discourse, of the type that promotes the development of shared understandings, requires the active engagement of participants, learning becomes an act of creation where meanings are negotiated, connections to one’s prior knowledge are made and conceptions are personalized. Torbe (1990) believes that we learn by using language:

Learning is not the passive acceptance of other people’s ideas and preexisting knowledge, but it is an activity undertaken by the learner. If that is true, then in school learning both the students and teachers must use language actively. The student’s meeting with new and difficult information and their turning it into personal knowledge, must be active as they test new concepts and experiences they meet and make against their own existing world pictures and as they do so, adjust those constructs. (p.137)

Barnes and Todd (1977) hold that even when tasks are explicitly described for students, they must make their own sense of it. Group work provides them with opportunities to clarify for each other, to witness other learners constructing
their own meanings, to encounter and match different points of view. Language, as the vehicle through which these transactions occur, necessarily facilitates the development of shared understandings.
Talk About Assumptions
Beliefs About Language

From a socio-cultural perspective, language is more than a tool for communication. It is a medium through which we exchange meanings as well as create them. People use language to persuade, to impress, to soothe, to negotiate as a vehicle for social action, for myriad purposes. (Lemke, 1989). Language is also a social process that not only defines reality by the way it encodes it, but is itself a product of that reality. Culture, that social reality, is a semiotic construct that is almost inseparable from language. Language symbolizes it, describes it and transmits it from one generation to the next. In a sense, there is no reality except that which is defined through and by language. Halliday talks about language as a social-semiotic, a system of meanings that is concerned with the relationships between language and the social structures within that system (culture) (Halliday & Hasan, 1989).

Given these perspectives, it is easy to see why talk plays such a critical role in the learning process. For Wells, learning is about talking:

It is in the talk through which tasks are defined, negotiated and evaluated and by means of which students' participation is monitored and assisted, that students and teachers engage in the dialogic co-
construction of meaning, which is the essence of education. (p.6)

**Knowledge as a Social Construct**

The belief that knowledge is a commodity that can be dispensed or transmitted or in some way acquired as a material object is still held by some educators today. Socioculturalists and sociolinguists however, view knowledge as a meaning-making process where individuals collaboratively negotiate understandings through use of the semiotic tool of language. By this definition, knowledge is not an object: it is the understanding we develop through negotiated interactions with others as well as the outcome of reflective discourse (internal talk) that results from those interactions. Michael Polanyi (1969) goes so far as to describe knowledge as an activity, as a process of knowing, dynamic, always changing:

Indeed as a scientist goes on inquiring into yet uncomprehended experiences, so do those who accept his discoveries as established knowledge keep applying this to ever changing situations, developing it each time a step further. Both (research and knowledge) are ever on the move, according to similar principles, towards a deeper understanding of what is already known. (p.132)
What this implies for classroom practice is that learning requires multiple opportunities where talk is the primary mode of interaction, whether that interaction occurs between individuals or in the internal, personal reflection that is a consequence of those interactions. How we make sense of things around us is so dependent on talk and on those variables that influence talk, that I have become acutely aware of a need to investigate the nature of talk during those classroom experiences where I ask my students to work collaboratively.
Children Talking

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What really goes on when children talk with each other? Four children, Joey, Mara, David and Jerrod helped me to discover the nature of children’s talk in collaborative settings.

Who was Joey?

Joey was an articulate nine year old grade four student who was in my third grade class the previous year. He enjoyed working on projects with his friends and invariably chose to work collaboratively rather than on his own when given a choice of working styles. Joey loved Science and Math and could often be found building models of various machines using different materials. Among the children, he had the reputation of being the classroom’s Lego expert because of his extensive private collection, some of which he occasionally brought to school. While he was a fluent reader and could express his thoughts adequately in written form, Joey preferred to share his ideas orally. Joey was a confident child who had an aptitude for critical, creative thinking. He had an intuitive sense of logic and could point out inconsistencies in other children’s arguments. The middle child in his family, Joey had an older brother and a younger sister. Joey was popular with his peers, but often chose to work with his best buddy, David. A fairly even-tempered child, he knew how to get along with other children and had good strategies for resolving conflicts in
appropriate ways. His comments to other children about their disruptions were wise words from a mature young boy. However, Joey was not beyond the occasional fist-fight when taunted by others or pushed to the brink of frustration. He was a sensitive child who sometimes cried when his feelings were hurt.

**How Joey Participated in Groups**

Gaining membership into groups is a skill many children develop as part of the school enculturation process. Like the execution of most social conventions, it requires the integration of a personal style with socially acceptable moves. We can look at Joey’s development of this skill as he worked with Jerrod, David and T.J. in a science activity that explored water pumps. An interest in water play had brought these boys together. Jerrod initiated the activity at the classroom’s science center and was clearly in charge. Joey seemed to be aware of the unspoken rule among the boys in the group: whoever initiates the activity is the one in charge and all other interested parties must negotiate entry. At first, Joey applied for membership into the group with a suggestion about what the group might do together. “Let’s make, let’s make a kind of a...”. Joey used the inclusive term “let’s,” establishing solidarity right from the start.
In the jockeying for the assertion of personal interests by David and Jerrod, Joey was constantly interrupted and had little chance to offer his idea. He made several attempts.

Joey: Let’s kind of make it so umm..
(Speaking turns by David and Jerrod.)
Joey: Guys, let’s make it, let’s make a log kind of thing.
See David, I mean Jerrod. Let’s make it a kind of thing that’s airtight so the water can go through it.

Later, Joey resorted to speaking at the same time as the others in order to be heard, and finally delivered his suggestion. No one in the group acknowledged that they had heard his idea, not even Jerrod, whom Joey addressed, knowing that he was in charge. Joey then tried another strategy. Jerrod, in the meantime, was in the process of transferring water from the tap into a plastic container, via a long clear tube with a pump attached to one end of it. His intention was to fill the container that was elevated on a large wooden block so as to cause the water to overflow into a tote tray, situated on the floor, slightly below the container. Joey realized that Jerrod was immersed in this task, so he physically positioned himself and took a hold of the plastic container that was receiving water from the tubing. He then commented to
another boy in the group, T.J. "We want it to go over," using the exact same words that Jerrod did to describe his intentions. By doing this, Joey allied himself with the group. In his next move, he issued a directive and received confirmation from Jerrod that he had indeed been accepted into the group.

T.J.: I know, just stop pumping.
Joey: Don't pump it! (He holds onto the pump to stop Jerrod from pumping)
Jerrod: 'Kay, I'm not pumping it.

By agreeing with Joey and accepting his directive, Jerrod acknowledged Joey's acceptance into the group and showed his willingness to share some of the power with Joey. Joey continued participating, issuing directives to confirm his status in the group.

Joey: Turn off the water!
David: Turn off the water.
Joey (agitated): Turn off the water, stop it!
T.J.: OK, let's just... (Joey lifts the plastic container filled with water off the block and places it inside the tote tray where it can overflow without spilling water onto the floor).
Feeling confident, Joey now reverted to his original suggestion, but this time instead of offering the idea subtly, he issued a clear directive, “O.K., you guys, we’re gona make a sort of passage way thing that....” Joey then stood up and moved away from the water play area to search for construction materials. Joey solidified his membership into the group by considering himself accepted, by using words like “you guys” implying equal status and “we” indicating solidarity. He didn’t seem to need Jerrod’s approval any longer, confident of his membership and certain that his task would contribute to the group’s overall scheme.

In these subtle, sophisticated ways, Joey was able to negotiate access into the group, gain the group members’ acceptance, and create a social status for himself that would allow him to offer his agenda, and have it at least be considered by the group, if not adopted as the group’s primary goal. Joey’s keen social barometer permitted him to sense that asserting his ideas was not appropriate until membership had been established. As well, his ability to try a different strategy in order to get his agenda met within the group task, resulted in success. He realized that being assertive was not enough. How Joey learned to do this and what other social encounters
contributed to his acquisition of this kind of knowledge would be interesting events to explore in another study.

Learning is social in nature (Vygotsky, 1978; Wells, 1991). For Vygotsky, individual consciousness originates in a social context. (Wertsch and Stone, 1985). The importance of that social setting to the development of Joey’s thinking became increasingly apparent as I listened to him solve a logic problem in a discussion with other children. The problem was as follows: In round one of a hypothetical tug of war, four male acrobats competing against five older women resulted in a tie. In round two, Ivan the Terrible, a fierce dog pulled against two of the women and one male acrobat. The result of this challenge was also a draw. Based on these assumptions, the students were then asked to decide who would win round three of the tug of war if one team with four male acrobats challenged another comprised of three women and the dog, Ivan the Terrible?

Four children participated in this discussion: Joey, Carla, David and Mara. Their task was to explore solutions to the problem, to come to a consensus on a solution, and then to ensure that each member of their group would be able to explain this solution to the whole class, later in the lesson.

At first, Joey had an idea of how he would solve the puzzle. He searched for words to explain his thinking. At the
same time, he was also involved with the other children in a negotiation for control of the floor. Several people were talking at once until Carla took over. As the conversation developed, Joey listened to Carla describe her ideas and found the places where his thinking matched with hers.

Carla: O.K. OK. Each one of these little guys here, is equal to a granny and***O.K.? So they'll probably tie. 'Kay cause each one of these is equal to a granny and let’s say...

Carla begins to try to establish an equivalence in strength between the characters in the problem. In his explanation earlier, Joey hinted at this notion of equivalence, but was not able to clearly express that idea in terms of an equation which Carla now tries to do.

Joey: A half

Joey sees where Carla is going with her argument, and he supports her by completing her sentence and building on her idea.

Carla: This area, or this area.

Carla is using pictures of the characters and is comparing their physical size.
Mara: They're gona tie again.

Carla: O.K?

Joey: A granny and a quarter.

*Joey continues to support Carla by trying to build on her idea of finding the strength ratio between players in the tug of war problem.*

Carla: Or this area

Mara: (laughter) How rude.

Carla: And so one of these guys is equal to one of these guys and a bit

*Here, Carla begins to clarify her understanding of equivalence.*

Joey: A quarter

*Joey continues to support Carla's argument and follow her logic.*

Mara: This guy looks small, this girl looks smaller than
As Carla does earlier, Mara is now trying to use the physical dimensions of the pictures of the characters to establish equivalence of strength.

David: Ya this, this lady looks smaller than those. *David jokingly supports Mara by agreeing with her.*

Joey: It doesn’t matter! *Joey expresses annoyance at the two others who are not able to follow Carla’s argument. By doing this he indirectly shows his support for Carla and demands that Mara and David stay on track.*

David: Hey this one has a mustache
(Laughter)

Carla: It’s not a mustache.

Joey: It’s a drawing! *Joey is increasingly frustrated by the illogical comments of the others. This comment also serves to help focus David’s input by indicating which of his ideas are extraneous and don’t contribute to the solution of the problem.*
Carla: And this guy is equal to one of these guys and two of these guys, right?

*Carla asks for support.*

Joey: Ya.

*Joey confirms her thinking. In doing this, he indirectly signals that these kinds of comments are appropriate and do contribute to the solution of the problem.* See Appendix J1.

Throughout the discussion, Joey made several attempts to describe his whole argument. While his outward social intentions were to ensure that all the members of his group understood his solution to the problem, these repetitions also served to clarify Joey’s thinking for himself.

Joey: Can I rephrase my answer, my answer?

*Joey asks for permission from the group to have another turn at offering his theory.*

David: I know!

Mara: It’s gona be a tie.

Joey: When two gran, two grannies and this guy
against him was a tie, so they're...
so that two acrobats would be as

Joey states the "given' in the problem as the basic
premises that will define his argument. Like Carla, he is
searching for language to help him describe his ideas.

David: But not as strong as this.

Joey: two acrobats and a quarter would be as strong as
this guy.

Joey continues. He keeps to the argument of trying to
establish equivalents in strength among the characters.

Mara: I know.

Joey: So umm this guy's really strong plus you have three
grannies.

Carla: And the grannies are really strong too!

Carla supports Joey's thinking.

Joey: Ya

(Laughter)

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David: They're macho grannies!

Joey: So this guy with that would equal five grannies against four of these so it might be a tie. *Joey changes his mind about who will win. This is an important part of the development of his theory, as he explores various solutions.*

Later in the discussion, Joey attempted to clarify aspects of the argument for David. In doing so, he went through yet another repetition of the problem and in effect clarified it for himself even further. Carla then joined in and supported Joey with her comments.

Joey: You see how though... that was a tie because two grannies and an acrobat are as strong as this guy and and you have three grannies who are really strong so this guy with that would equal like up to five grannies

Mara: Everything up there is a tie. *Mara refers to the illustration of the characters involved.*

Carla: Which means that if the five grannies fight these guys AGAIN!!, then they would be a tie.
Joey: It would be a tie.

Joey confirms Carla's repetition of a given premise upon which the logic of the solution is based.

David: So you're saying Joey that if that and that, that would just wipe out those so that, this and that would just equal five?

David attempts to reflect back to Joey his understanding of Joey's argument. He continues to want to be a part of the group and his way of participating is to try to show that he has been listening carefully and following along with what Joey has been saying.

Joey: No, NO!

Joey disagrees with David's understanding of his argument.

Carla: No this guy is equal to two grannies...

Carla attempts to clarify how the characters equate in strength with each other.

Joey: And one, and an acrobat.

Joey is adding on information that Carla has omitted, but which was provided earlier as a given to solve the
problem. He is in essence saying that the dog is equal to two grannies and an acrobat.

Joey: So you have this guy.
Joey continues to try to clarify for David.
See Appendix J2

After having engaged in this discussion with Carla in order to clarify for David, Joey has essentially clarified the argument even more for himself. He feels more confident about this solution. David however, is not convinced. He doesn’t want to disagree outright, because he probably recognizes that he can’t substantiate his own conclusions. Nevertheless, he remains dubious about the predictions that Joey and Carla have made.

David: They MIGHT. They MIGHT WIN Joey.

From these repetitions and rehearsals, Joey both refined his ability to describe his ideas and simultaneously built the argument for himself. By the time he presented his group’s solution to the whole class after the small group discussion, Joey was able to describe logically and coherently his argument. Right from the start, he confidently stated their
solution to the problem. He then proceeded to build the argument that would logically demonstrate why this outcome was plausible. This presentation format of stating outcome first, then describing logically the reasons for that prediction was different from the format he used during the discussion phase while he was shaping his arguments. In that situation, Joey first stated the premises of the problem as they were given, then tried to build on those in syllogistic fashion and finally made attempts to predict logically what might be a reasonable solution.

Joey: Okie dokie. We think that the grannies will win. Because uh when there were, when there were five grannies and four acrobats it was a tie. When there were um two grannies and one acrobat against Ivan the Te... the dog...

Ms. G: Terrible, Ivan the Terrible

Joey: ... it was a tie. So two grannies and one acrobat is equal to a dog. And um when you have three grannies and a dog against four acrobats the grannies would win cause the dog is worth three. So the grannies will have six on their team.
In order for Joey to have success at using the discussion group to clarify his thinking, certain preconditions needed to be in place. These involved the behavior of the other participants in the conversation. While Joey “bounced his ideas off” the other children, they in turn listened carefully and took what he said seriously. They tried to understand what he meant and asked for clarification when unsure. Their responses to his comments were generally connected to what he had previously said and in their own comments, they tried to make themselves understood by him. This was all able to happen because the children, with varying degrees of intensity, had a made a commitment to the task and supported each other throughout the discussion. Wells (1986) counsels adults to follow the same guidelines when attempting to facilitate children’s language development.

“•... treat what the child has to say as worthy of careful attention.
•... do one’s best to understand what he or she means
•... take the child’s meaning as the basis for what one says next.
• in selecting and encoding one’s message, ... take into account... the child’s ability to understand- that is, ... construct an appropriate interpretation.” (p.218)
How Joey Benefited From Working With His Peers

Joey’s successful description of the problem and its solution was the result of much discussion, of careful listening, and of rehearsals and repetitions. Within the social milieu of the small group discussion, Joey shaped his arguments. He used language to describe, to reason, to assert his needs, to predict, to support, to justify and to persuade (Tough, 1980) and in convincing the group about his ideas, he in effect, convinced himself.

The two group settings in which Joey participated invited him to explore different roles. In the logic problem setting, Joey played a dominant role, one with high status in the group. By offering his ideas to the others and in his attempts to persuade them to change their beliefs, Joey enjoyed recognition from his peers. In the other setting, where he had to negotiate his membership before participating, Joey played a less dominant role. Learning to function in both situations is an important aspect of socialization. It allows children to use different forms of language for different purposes. Joey’s attempts to persuade Jerrod to let him join the water pumping activity necessitated that Joey temporarily relinquish his own needs and accommodate Jerrod’s. In the other scenario, Joey’s attempts to shift Mara and David’s point of view required him to state clearly his own perspectives. Both roles, that of
initiator and that of follower, serve important functions in the
development of communicative competency, and of socially
appropriate behavior. As we will see later, Mara has learned
to play only one of these roles well, and as a result, her ability
to use language in varied ways, for different purposes is
limited.

Implications for Practice

I have become more aware of the value of the
"presentation" format as yet another vehicle that invites
children to explain their thinking to others. As discussed
earlier, Joey's use of language and his strategy for explaining
his thinking were different in the discussion setting than in the
presentation mode. These abilities of using language for the
purpose of logical reasoning in order to clarify issues for
oneself, and that of using language in a logical, descriptive
way to present one's ideas to others are two sides of the same
coin. Being able to think logically involves not just skill at
identifying cause and effect, but an ability to explain a process,
justify judgments and action, reflect on events, draw
conclusions and recognize the principles of logical reasoning.
Tough (1980) refers to these as strategies that promote logical
reasoning. In the discussion setting, Joey was able to use
effectively the strategies of justifying judgments, applying the
principles of logical reasoning, and drawing conclusions. In
the presentation arena, he needed to explain his reasoning process in order for his audience to accept his judgements and conclusions.

In another instance, the opportunity to present "polished" ideas to the whole class prompted Carla to develop a new strategy, that of using an analogy, to explain her thinking. This had not occurred previously during the small group discussion. Presentation mode assumes a different set of ground rules, than does small group discussion. During the small group talks in these activities, exploring ideas was the focus, and changing one’s mind was acceptable. As well, disagreements with group members and challenges were valued as ways of forcing speakers to present their ideas clearly and in detail. In the presentation mode however, the rules change slightly. The speaker must present group consensus on the issue, provide clarity and succinctness in the description, and demonstrate confidence that this is indeed the perspective the group has arrived at. Contradictory arguments, doubts, and ambiguity have no place in the presentation arena, and neither does disagreement amongst the members.

In the small group discussion on the other hand, repetition and restatement are functions of the rehearsal process which invites challenge as a way of obtaining clarity
about one's position. While I typically allow for both types of talk to occur in the classroom, I haven't fully appreciated the different ways of using language that each setting provokes. After having closely looked at Joey's and Carla's participation in this activity, I now see the value of providing children with opportunities to experience both discussion (process) and presentation (performance) settings.

Who was Mara?
Mara was an eight year old third grade student, an only child in her family. Mara loved working with others, but could be quite domineering with her friends. She was a fluent reader, and enjoyed writing and role play activities. Mara's presence in any group was obvious to others as she often tried to take control and ensure that her point of view was known by all. She frequently chose to work with Melissa, whom she referred to as her "best friend." When forming self-selected groups, other children seldom chose Mara. However, Mara usually formed her own group, selecting the children whom she liked to work with. Usually these children were more passive than she was.
How Mara Participated in Groups

From their earliest attempts to begin communication, children are already using directives effectively (Bates, 1976; Halliday, 1975). Ervin-Trip (1977) reports that studies which have tallied the frequencies of directives in children's speech reveal that as much as 50% of all utterances take the form of one type of directive or another. This inclination is further supported by classroom discourse, as Garvey (1977) and Edwards and Furlong (1978) point out. Much of the language teachers use in classrooms tends to be of that nature. Six kinds of directives have been identified by Ervin-Tripp. These are: Need statements (I need a match.) Imperatives (Gimme a match.) Imbedded imperatives (Could you give me a match?) Permission directives (May I have a match?) Question directives (Have you gotta match?) Hints (The matches are all gone.)

In their 1977 study of black American children, seven to twelve years old, Mitchel-Kernan and Kernan found that the most common type of directive issued in a role-play situation was the imperative form. They also noticed that directives were used frequently to define, reaffirm, challenge and manipulate status and rank among children. Only occasionally...
did these children use directives as they are ordinarily applied, and that is to request goods and services.

Mara's participation in this small group discussion was consistent with these findings. Much of what she contributed to the group took the form of an explicit or embedded directive. The following excerpts are examples. In a discussion with Joey, David and Carla, Mara defines her presence in the group by demanding that Joey consider her needs. "What, we can't hear you?", she says. "You're looking that way." By claiming to speak for the other members of her group, she solidifies her status. Later in the discussion, the children decide to use dice to select a member who will perform a task for the group. Mara again issues directives to assert her status within the group.

Mara: No Carla, You have to roll the dice. Whoever is the highest. (Whoever rolls the highest number will be assigned the task.)
Mara: Four? Carla.
David: Me? No.
Mara: Not you! (David rolls the dice anyway.)
Mara: OH!

*She is expressing annoyance at David for not following her orders.*
Mara used directives frequently to define her status in the group. While Joey and Carla were able to do this by relying on their problem solving skills, Mara had to assert her rank by issuing directives. After Joey explained his thinking to the group and David urged her, “Just come on! Take my idea, me and Joey’s idea,” Mara resisted, telling David, “Stop yelling... in my ear!”

Later, after again having difficulty following the logic of the discussion and being unable to use language in what Grice (1968) has described as an indicative mode, speaking with the intent of influencing the beliefs of others, the way that the other children are doing so, Mara participated by directing the practical tasks of the group. She used language as an imperative force with the intent of influencing the actions rather than the beliefs of the others.

Mara: So let’s cut them out now and then put them into groups
David: I’ll cut them!
Mara: JOEY will cut them.

Mara also took on the role of mediator and arbitrator when the discussion got heated.
Carla: Well, so that the grannies are gona win
Joey: That would be...
Carla: Well that gives the grannies a better chance
Joey: Ya, so they'd win because...
David: The MIGHT. They MIGHT win Joey.
Mara: No arguing to it.

Interestingly enough, in another situation where Mara and a group of her friends were writing a play, Mara’s character in the play behaved very similarly to Mara herself. She cast herself as a young girl who had lost her cat to the neighborhood witch. Mara also wrote much of the script. The bracketed comments () indicate the physical action of the scene, while the bold italics identify the type of directive issued.

Mara(in role): Sis, can you go find Cinnamon for me?
*Imbedded imperative*
Parminder(in role): Sure sis.
Mara(out of role): Kaitlin get out! (Kaitlin has been hiding inside a closet and has missed her cue to speak her lines). *Imperative*
Kaitlin (in role as the witch): Go away now Cinnamon and the next time I see you in my yard, I will cast a spell
on your family. (She pushes Melissa, who is in role as Cinnamon the cat). **Imperative**

Melissa (in role, groans.)

(Some dialogue is omitted here.)

Mara (in role): Where's my cat? **Imbedded directive**

Kaitlin (in role): (She brings out Cinnamon) Cats are really nice. I wish I had one of my own.

Mara (in role): You can come over anytime to visit Cinnamon. **Imbedded imperative**

Mitchel-Kernan and Kernan (1977) reported that in general, imperatives were directed more often to persons of equal or lower rank than they were to persons of higher status than the speaker. This was true in Mara’s case. In the group discussion with Joey, David and Carla, Mara sensed that these three were more fluent in describing the solution to the problem than she was and therefore had more status in the group. Consequently, she participated less assertively, issuing more subtle directives than she did in the writer’s group in which she and four friends collaborated to write a play. Mara dominated a large portion of the two writers’ workshop sessions. Her strategy of gaining and maintaining control of the group was to speak primarily in directives, particularly, imperatives. This excerpt is typical of the way Mara used
Mara: No, you have to slow down cause she comes in then.
Kaitlin: Ok. (in role) I....will...cast a spell on you.

Kaitlin says this very slowly.
Mara: No, Kaitlin, you go like this- (in role) Go away now Cinnamon. Next time I see you in my yard.....*Mara pauses and gestures with her hand, a directive issued to Mariah, another child.*

Kaitlin and Mara: I will cast a spell on your whole FAMILY *Mara gestures again as a cue to Mariah.*

Mara: You don’t go, (She reads fast to demonstrate.) Go away now Cinnamon, next time I see you in my yard.....(pauses). You have to slow down there so Mariah can come in for a minute, ’kay?

Kaitlin: Well she should have her part here. *She doesn’t have her...*

Mara: *She does.*

Kaitlin (reading in role) Go away now Cinnamon and the next time I see you in my yard...(pauses) I will cast a spell on you.
Mara nods in approval.

Kaitlin: I said it slow and she didn’t come in. Look.

Mara: (to Mariah) Say ruff ruff LOUD

What I Have Discovered About Mara

These samples revealed to me the ways that Mara limited her use of language. Most of what she said was in the directive form. Perhaps too, her age and stage of language development made the ways in which she used directives seem as though she were overly “bossy”. Leibling (1988) has shown in her research on directive forms that younger children tend to use more explicit and imbedded directives than older children who have become more skillful at the art of hinting. Research findings indicate that the students in Grade 1 were competent in producing explicit and some polite directives. They did not demonstrate control of polite directives utilizing the conditional nor did they really produce indirect directives. By Grade 3, students produced the range of directive types, although it was not until Grade 5 that indirect requests were consistently offered as examples of the most polite forms on the continuum. (1988, p. 94)

Judging from these observations, Mara seemed to be at an early stage of development in her use of directives. As well, it was probable that she had a preference for this way of using
language. Halliday (1975) suggests that some children do in fact have a preferred or specialized language function, and in certain cases may have tendencies to express needs non-verbally. Cherry (1979) cautions teachers to be aware of these in order to provide conversational experiences for children that foster growth of a wide range of language functions.

Tied in with this were Mara’s needs for recognition and belonging. These directly influenced the ways in which she used language. Mara’s need to be recognized and to feel a part of the group combined with the limited range of language functions resulted in her overuse of directives.

**Implications for Practice**

Mara needed to develop other strategies to initiate and maintain her membership in groups. As well, she needed to experience peer recognition for abilities other than her skill at organizing the behavior of others. While Mara’s tendency to dominate others was evident in much of her behavior, these observations have made me more aware of the impact this attitude had on her ability to use language for a variety of purposes. Mara tended to choose to work with friends she could dominate. In forming groups for her to work with, if I were still teaching Mara, I would consider placing her with stronger students who could hold their own ground, and not succumb to her assertiveness. This would have encouraged

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Mara to explore a less dominant way of participating in
groups, as she did in the logic problem discussion, where
among older children, she found a comfortable role in being the
mediator of the group. Diversifying her range of behaviors
could have also occurred by providing Mara with
opportunities to use language to imagine, to predict, to explain
her ideas, to describe, etc. In developing a larger repertoire of
language usage, Mara would have expanded her ability to
conceptualize, to think more flexibly and critically.

Using language in a variety of ways would model for
children the different purposes of talk. As I think about the
taxonomy of language use that Joan Tough has devised, I am
suddenly aware that I do not often, in the classroom, use
language to imagine or project. This, Edwards and Furlong
(1978) suggest, is typical of classroom talk. A large portion of
what I say to children as a whole group tends to be of the
informational or directive type. Creating more opportunities
for us, as a community of learners, to use language to imagine
and project, as well as to argue, narrate, describe and explain
would not only promote abilities to use language in a wide
variety of ways, but would also develop the cognitive
correlates of these functions.

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Who was David?

David was a verbal nine year old, fourth grade child who had many interests. He loved books and read voraciously but also enjoyed hands-on activities. He was curious about causal relationships, often devising experiments to find out “why”. David’s best friend was Joey. The two children had similar interests and often worked together on projects or at the classroom’s Science Center where they investigated their wonderings. David was assertive when he felt the need to be heard, but was also learning to consider other people’s ideas. Like Carla and Joey, David was also in my third grade class the previous year. He was the elder of two children in his family.

How David Participated in Groups

In the following scenario, four children, David, Carla, Joey and Mara are involved in a problem solving activity. This is the same activity described earlier from Joey’s point of view, where the task was to determine which team would win the tug of war. At the beginning of the discussion, David jockeyed for control of the floor, as did the other members of the group. He later allowed Carla to assign the speaking turns and listened to his best friend Joey’s theory about who would win the match before he offered his own ideas to the group. As he spoke, David began to use the group as a vehicle to clarify his own thinking. He extended ideas suggested by others and

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began to shape into an argument the new thoughts being formed while he was speaking. Challenges to his ideas by other group members encouraged him to describe his thinking using more precise language and to adhere to the group's emerging notions of logical thinking.

Joey: Well they had a tie with the grandmas and the acrobats and Ivan the Terrible's like the as strong as two acrobats, right?

Carla: He's ... he's

Joey: And they've also got...(pauses) three grandmas and those will tie with the grandmas and the acrobats. So the grandmas will probably win.

(Group members pause while this idea sinks in)

David: Wait a minute...okay

David is thinking about what Joey has said and asks for time. His tone of voice suggests that he is processing these ideas that Joey has just put forward.

Carla: OK
Joey: It would ....

*Joey starts to add onto his argument, but is cut off by David.*

David: I think it’s a tie because as soon as you see like ... uh one... there's ...five...

*David then offers his own solution to the problem which is different from what Joey has proposed.*

Carla: Five against four, ya

*Carla shows her support of David by agreeing with one of his premises and encourages him to continue.*

David: And five against four, that was a tie because the acrobats are just a little bit stronger than the grannies.

*David extends Carla's idea of describing what is already known about the problem, that there were four acrobats against five grannies, which resulted in a tie. He then gives his explanation of why the contest was tied even though there was an uneven number of players on each of the teams.*

Carla: But then if the acrobats were
a little bit stronger then wouldn't they win?

*Carla is confused and challenges David to clarify his point.*

Mara: Ya really?

*Mara has been listening to all this, and she now also questions the logical conclusion of this argument.*

David: I know, no but like cause they're equal...

they're five, four ac, four acrobats against five um, five grannies there's one more extra so that causes a tie.

*Challenged by Carla, David tries to clarify his thinking.*

At this point in the discussion, David began to realize that he was having difficulty sustaining his argument. He became frustrated and chose to turn the discussion into a competition for control of the group. In a study about learning through argument, Genishi and Di Paolo (1982) found that among preschoolers, the predominant goals of arguing were to control the behavior of others or to assert the speaker's importance. Very few of the arguments they observed focused on adding new information, resolving the conflict or attempting to take different points of view into consideration.

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As it became apparent to him that he couldn't contribute effectively to the discussion, David tried to shift the group goal from solving a problem to controlling the behavior of others. It is interesting to see how he defined the struggle between himself, Joey and Mara. Mara agreed with him in theory, although Joey thought differently, yet David willingly changed his argument so that he and Joey were in agreement. He then challenged Mara to "take my idea, me and Joey's idea," when Mara was in fact already in agreement with his original argument. It seems that an alliance with Joey was one way that he could gain status in the group. However, since he couldn't follow Joey's line of thinking, he defined that alliance instead, by creating a difference of opinion with Mara and by adopting Joey's theory as his own.

This was a clever move on his part, because by doing this, he effectively exempted himself from having to explain very much more of his thinking and yet, could still participate acceptably in the activity through his alliance with Joey. In one speech event, he attempted to achieve two outcomes: gaining status within the group and therefore, control of it, and a seeming compliance with the group goal of solving the problem. The following excerpt illustrates David's strategy.

Joey: Did you get what I said?
Mara: Oh no, I want help!

David: So I think it's gonna be a tie.

Mara: Okay, I think it's gonna be a tie.

David: Hold on!

Carla: 'kay let me explain it?

Mara: Uh?

Joey: *** This guy (the dog, Ivan the Terrible) is probably as strong as these two guys, right? And these (the acrobats) were... you noticed a tie when these... the grannies and the acrobats went so um... he's just talking to those two and he will and they will have uh, um three grannies so why would, so why can't they win?
Mara: Be- Cause!

Carla: Because, I'll tell you what I think **

David: Oh for Pete's...

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Joey: ***

David: *****. Just come on! Take my idea, me and Joey's idea.

Mara: Stop yelling .... in my ear!

David:(To Mara) It's us against you! **** So who cares?

As the discussion progressed, David became disinterested. In the meantime, Joey and Carla continued building on each other's ideas by looking for a solution to the problem. David then began joking and acting silly until Joey reprimanded him indirectly several times. Finally, when Joey issued a clear directive, David tried to join in the discussion more seriously and made an attempt to understand Carla's and Joey's arguments. Pressure from his peers to conform to the group task of arriving at a solution was strong. David changed his opinion in an effort to conform and regain favored status, but because he himself was muddled about the problem, it became even harder for him to follow Joey's argument, which itself was in the process of being formed as Joey spoke. In a effort to cope with this complex situation,
David contributed to the discussion by reflecting back his understanding of Joey's point of view, and by occasionally agreeing with him, even though it was evident that he hadn't fully understood Joey's argument. In the end he chooses to concede that Joey's and Carla's argument might be plausible, but his commitment was tentative. (See appendix D1.)

Because David had difficulty following Joey's and Carla's argument, he was unable to share in the common understanding that the two had built. This resulted in David feeling somewhat left out of the group. When the time arrived for the small groups to share their solutions with the whole class, David stepped in and tried to participate in a dominant way by asking his classmates to be ready to listen closely to his group's explanation. Only then, did he allow Joey to explain their solution to the class. In assigning himself to the coordinator's role, David signaled his membership in the group. David would have preferred to have been able to explain his group's solution to the whole class himself, but he was aware of Joey's clarity around the problem and of his own lack of it and decided to defer to Joey instead.

Joey: Okay dokie

*Joey signals that he is ready to begin.*
David: Okie dokie

*David echoes that signal. Asserting that he too has control of the situation and indicating that he will be participating in the presentation in an important way.*

Ms. G: Make sure everybody's ready before you start.

*Teacher is reminding them to check that their audience is ready. She is also reminding them that they have the control here and that they need to make sure all students are ready to begin listening.*

David: Mariah can you please be ready? Mariah..

*David happily takes on this role and reminds one of the students about her audience manners.*

David: Kaitlin could you please be ready? Rob could you please be ready? Dale could you please be ready? Kyle? Sara please be ready? Joey?

*He continues calling out those students who are not ready and personally asks them to be attentive.*

David listened as Joey explained to the class. A little while later, it became difficult for him to remain quiet. David
then decided to share his own thinking with the class in spite of the fact that his argument was different from that of his group.

Joey: Okie dokie. We think that the grannies will win. Because uh when there were, when there were five grannies and four acrobats it was a tie. When there were um two grannies and one acrobat against Ivan the Te... the dog...

Ms. G: Terrible, Ivan the Terrible

Joey: ... it was a tie. So two grannies and one acrobat is equal to a dog. And um when you have three grannies and a dog against four acrobats the grannies would win cause the dog is worth three. So the grannies will have six on their team.

David: OK
David signals that he would like a turn to talk.

Joey: Against four
Joey finishes his argument.

David: But I think, I think then it might be JUST a LITTLE bit doubt, just a little bit of a doubt that the um
the grannies and the acrobats might have a tie cause um...
if you see here the five ac, the four acrobats and five grannies they got a tie. Well I think each um like one acrobat equals an acrobat and a quarter, a granny and a quarter, that would make five per... people, but then Ivan the Terrible would um equal six ** three plus three grannies that would be six

David disagrees with his group's conclusion. Instead of supporting Joey's argument as he should be doing at this stage of the activity, David is challenging it. He is still having difficulty describing the strength equivalence between the tug of war participants. He has a hunch that they don't match up one to one, and knows from the previous discussion with his group that one team ends up having the equivalent of six team members, but he can't quite explain the argument so that it clearly describes the strength ratios between players.

: because..
David: ..and a, and a quarter because um equals an acrobat

Joey: and..

Joey interrupts and tries to comment
David: And an acrobat one acrobat is really stronger than a granny? so I think that um it has a little um possibility of being a tie.

*David finishes his argument that the outcome should be a tie because the acrobats that are paired up with the grannies on one team, make it just as strong as the four acrobats on the other team.*

Later in the discussion, David changed his mind again. As Joey explained his argument to the whole class, David suddenly agreed with him. David then built on Carla’s understanding of equivalence in strength and used an analogy of his own to describe this concept to the others. When a student from the class asked a question, he quickly defended his group, even changing his mind about his own conclusion, that the outcome would be a tie. Here, his loyalty to the group and his need to belong outweighed his need to have his own opinion. (See Appendix D2.)

At the conclusion of the presentation, David thanked the whole class, on behalf of his group, for listening to their ideas. By this action, he once again, reconfirmed his membership in the group. During the presentation to the whole class, David’s agenda shifted from one of explaining his own solution, which was different than his groups’, to the unequivocal

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demonstration of belonging to that group. He worked hard to establish that he was indeed a vital member. David probably felt a need to define some sense of belonging since this bonding had not occurred during the small group discussion due to his difference in opinion with the other members and because of his inability to follow their thinking.

Interestingly, during the large group share, as David publicly acted out support for his group, he clarified parts of their argument for himself and in the end, was closer to a common understanding of the group’s solution than he was at the start. Clearly, peer pressure to conform to the group goal during the small group discussion was not enough to shift David’s thinking. It was only during the public presentation, where he may have experienced cognitive dissonance between his overt behavior (supporting his group) and his differing belief (one that didn’t match the group’s), that David chose to accept his group’s argument. David may have also believed that his earlier disagreement with the group excluded him from membership in it. His way of trying to reclaim this was to support his group publicly. David’s need to belong the group influenced him to participate in the task in a committed way in spite of the fact that it was difficult for him to follow the others’ sequence of thinking. That Joey, his best friend was a member of that group was also important to David. It was
Joey who brought David back to the group when he drifted away from the discussion. This need for social interaction was a key factor mitigating David's overall participation in this collaborative activity.

This was not however, always the case. David did not always participate in groups simply because of a need for social interaction. On another occasion, it was the task itself that proved to be the main motivation behind David's participation in the activity. In that setting, six children gathered together to investigate the mechanics of siphoning water from one container to another using a long piece of plastic tubing. Earlier in the week I had demonstrated the use of this technique to clean out the water in an aquarium. The children chose to work in the classroom's science center to investigate this problem. Jerrod initiated the task when David and the other children joined in.

David: I'll start siphoning with my mouth

*David explains to the group what he is about to start doing.*

Jerrod: ******

*Jerrod declares his intentions.*

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Joey: Let's make, let's make kinda of a....

*Joey offers an idea.*

David: Jerrod, I'll start siphoning in my mouth

*David restates his intention. He is careful to check in with Jerrod because he knows that Jerrod initiated this activity.*

Jerrod: No. No, cause we're gonna make it flow over here. (The container which Jerrod is filling is sitting above a second container and a tote tray is on one side of these ready to receive any overflow of water from the container which Jerrod is filling via a plastic tube and water pump.)

*Jerrod expresses his disapproval of David's activity and explains his intentions.*

David: Did you watch this?

*Request to focus.*

Joey: Yeah.

Jerrod: No.

Joey: Yes.
Joey: Let's kind of make it so umm...
*Joey makes a suggestion. He uses “let’s” implying that he wants this to be a collaborative activity.*

Jerrod: Don't make it siphon cause I'm gonna make it flow over.
*Jerrod issues a directive and restates his intentions.*

(Jerrod continues to pump water into the plastic container that is sitting beside a tote tray. T.J. is at the taps monitoring the water flow and holding the long tubing.)

David: And I'm also going to make it siphon....
*David would like very much to test his idea of using a shorter plastic tube to siphon water from Jerrod's container into the tote tray.*
(He puts the tube in his mouth and prepares to suck air up into it to start the flow of water.)

Joey: Guys let's make it, let's make a log kind of thing.
*Here, Joey is requesting support for his idea. His interest in participating in a collaborative fashion is indicated by his use of let’s.*
Jerrod: (To David) No. I wanna watch it go over. 
*Jerrod is asserting his power, restating his intent*

Joey: See, David, I mean Jerrod. *(Re-addressing who he perceives has the control.)* Let's make it kind of a thing that's airtight so the water can go through it. *He is requesting acceptance of his idea*

Voices ****

Jerrod: Keep on doing it even if it goes over. 
*Jerrod issues a directive*

T. J.: Watch the crack, watch the crack! (The container has cracks in it and water is likely to spill onto the floor instead of into the tote tray as intended.) (Joey comes over and holds onto the plastic container that is receiving the water from the pump.)

Jerrod: I know, we're gonna make it go over, I want it to go over. 
*Jerrod is asserting his authority, his control of the situation and restating intentions.*
David: I wanna make a siphon just in case.  
*David continues to assert his wishes. But he provides an excuse, “just in case” to improve the chances of Jerrod’s approval of this activity. He senses that Jerrod is in control and does not want to confront him directly.*

Jerrod: No not yet.  
*Jerrod maintains his stance, but has given David a conditional approval.*

David waited and later began the siphoning activity. He maintained his focus despite the difficulty he had trying to get the water to flow through the plastic tubing. Here, David’s engagement in the task was clearly due to his interest in getting the siphon to work. He participated in a parallel activity but had little interaction with either Joey or Jerrod. In fact, he risked a conflict with Jerrod by defying Jerrod’s directives so that he could carry out his intentions of siphoning out the water. As well, David used “I” statements to assert his presence, in contrast with Joey’s “Let’s.” This further suggests that in this case, David was very focused on the activity itself, regardless of the fact that no one else in the group was showing signs of interest in his idea. Joey, on the other hand, made a few suggestions of what explorations the group might
undertake, always preceding these with a word that indicated
his intention to work together ("let's"). For Joey, the
collaborative aspect of the activity was as important as the
activity itself. For David, completing the self-initiated task
was the primary goal.

In their 1977 study on children's strategies for settling
disputes, Brenneis and Lein described a taxonomy of argument
tactics. The first category concerned statements about
opponents. These included: threats, bribes, insults, praise,
commands, moral persuasion (ex. I had it first), negation or
contradictory assertion (A: I'm the strongest. B: No I'm the
strongest), and simple assertions (That's mine!). The second
category of classification included statements about or
reactions to previous statements such as: denials, affirmations
(irony, sarcasm), supportive assertions, which were statements
that presented evidence in support of an argument (ex. It's
mine cause I bought it.), demands for evidence (ex. How do you
know?) and non-word vocal signals (ex.nyeeh-nyeeh).

David's participation in another small group
collaborative activity could be described using aspects of this
classification. In this third setting, David, Rob and Jerrod
decided to work at the music center exploring a variety of
percussion instruments. It is important to point out that these
three came separately to the center without prior intentions of
working together. Each child had chosen the activity because of his desire to play with the instruments. As a result, there had to be some negotiation about how to share those instruments and about how to respect each individual’s personal “sound space.” In the language of classroom hierarchy, David and Jerrod were considered equals. Rob however, a more passive child, had less clout around these two boys.

Examining the transcriptions reveal how early negotiations between the children include commands and assertions aimed to secure territoriality (sound space) and establish control of the group.

David: Here I wanna do the drums again, Rob.
Rob: Ok, I’ll just....
David: I just wanna do this tune.
Rob: I hate that tune.
Jerrod: Hey man, wait a sec...
Rob: David, wait, wait, wait. Go like this...(plays wooden sticks.)

Once David declared his interest in working collaboratively to compose a musical piece and the others agreed to this collaborative task, the negotiations shifted from claims to control the floor to the content of the composition and

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how it should be played. The underlying struggle to gain control of the group continued throughout the discussion. In the following excerpt, we see examples of this. While David invited the others to contribute ideas for the composition, his covert intentions were to secure compliance with his own ideas and to control Rob’s and Jerrod’s behavior. David used commands to influence the actions of the other two boys. These strategies were more direct than the ones he used in the problem solving discussion to gain control of the group. While he did on one occasion in that discussion, resort to issuing a directive, “Take my idea, me and Joey’s idea”, overall, he used reasoning, he reflected his understanding of the others’ point of view, he asked for clarification and he stated his beliefs. Here, David used a variety of directives ranging from requests to strong imperatives, assertions and insults in order to change Rob’s and Jerrod’s behavior. Rob and Jerrod responded by issuing their own combination of directives, insults and assertions as the argument developed and the power struggle continued. David’s confidence in this setting might be one reason for his increased use of directives as a means of control. His perceptions of Rob as an underling and of Jerrod as a equal may have also influenced his choice of this strategy.
Rob: David, wait wait wait. Go like this...(plays the wooden sticks)

Rob issues a directive in order to get David to focus on his idea.

David: Here... okay... 'Kay I can go...
Do you wanna do the boatman song? or, or a jazz? (plays cymbals)
We can go like.... (plays)

David ignores Rob and declares his own ideas. He then invites him to contribute ideas.

Rob: Or... kay stop, stop. Or .. you could go like this.
(Plays and David listens) Right?

Rob uses an imperative to get David to focus again so that he can offer another suggestion.

David: Ya except... Rob could you just quit it. Quit it ok?
(Sounds continue)

David issues an imperative with the intention of controlling Rob's behavior.

David: Jerrod where'd you... Oh I need this. (Reaches for the cymbals)
David makes a simple assertion.

Rob: **** try couple of bells for jazz
Rob makes a suggestion.

David: Bells? No. No, bells don't go with jazz.
David rejects Rob's suggestion.

Jerrod: 'Kay we need to plan this. OK
First let's make a beat. David ***
Jerrod signals to get the group focused on one idea. He
then offers an idea in a directive way.

David: Let me do it.
David asserts his ground.

Rob: You could make a jingly beat.
Rob offers a suggestion in the form of an imperative.

David: Rob... get a life!
David insults Rob. This is also an indicator of Rob's low
status in the group.
(See Appendix D3 for the rest of the transcription.)
Throughout much of the activity, David maintained control of this group using one main tactic, issuing directives. When he was challenged by Rob, whom he dismissed all along as a subordinate, David’s reaction was surprising. He became less assertive and more accepting of Rob, a behavior that was very different from his earlier dismissals of Rob’s suggestions.

Rob’s decision to try another role, that of self-appointed mediator between David and Jerrod was a desperate, but ultimately successful bid to gain recognition from the group. Earlier in the scene, David and Jerrod had been arguing over which instruments should be included in the composition and how to play them. Rob’s strategy of agreeing with both boys had the effect of calming Jerrod down and of encouraging David to accept Jerrod’s suggestions. Rob success at de-escalating the argument and paving the way for the group to begin to build on each other’s ideas and to work together towards a satisfactory outcome shifted the group dynamics by altering the power hierarchy.

David: It's just like this... this is all you're doing, its like this... (shows Jerrod on the drum) David tries to justify his objection by describing what it is about the drumming that he doesn't like.
Jerrod: No!

Jerrod repeats his refusal to alter his composition.

David: You're just going like this...

Just go like this... (demonstrates to him on the drum)

*David describes by demonstrating what Jerrod is doing, implying that he doesn't approve. He then offers a suggestion in the form of a directive.*

Jerrod: No. Look, look (He demonstrates on the drum.)

*Jerrod refuses to comply and asserts his idea by demonstrating his composition on the drum.*

David: Look. That's bad. I don't like it!

*David now becomes firmer in asserting his opinion. “That’s bad.” Rather than stating a logical reason, David expresses a personal preference.*

Jerrod: You, I don't like YOU! (Continues drumming)

*Jerrod recognizes the move to the personal realm and interprets this as an insult. He hurls a stronger insult back at David.*
Rob: David, David, why do YOU have to be creating all this stuff. I mean we have ideas too that may be...

Rob now takes sides with Jerrod.

David: Well I'm just saying that I just don't like that part. David backs off and tries to justify his previous assertions.

David’s reaction when challenged by Rob shows how power and status are continually in flux during group interactions. Rob gained status in the group by successfully mediating the conflict between Jerrod and David. David acknowledged this by altering his own behavior and by following Rob’s example of requesting rather than demanding changes.

Rob: Jerrod I don't really like that part either can you please change it?

Rob now shifts and takes David's side. He issues an imperative.

Jerrod: Well... look you guys, well just because you don't like it doesn't mean I have to change because you don't like it.

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Jerrod feels outnumbered and ganged-up on. He uses moral persuasion to argue his point.
(Jerrod's tone throughout the previous discussion has been confrontational, agitated, impatient.)

Rob: David, J-J-J-that's his drums, Jerrod's. ** pretty well Jerrod's sound effects with the drums. Well you could make the drums change, right Jerrod? With your sound effects? (drums sound)
Rob now suggests that Jerrod could alter his contribution to the piece without losing face, by creating sound effects instead.

David: (Talking to Jerrod using a more quiet, pleasant voice.) 'Kay let's see. Try to add in a little softer beat to mine OK? 'cause the bells...
David realizes Rob's comment is not targeted against him and that Rob is attempting to remain neutral, so he too can, through Rob's suggestion, retain his power, not lose face and still accommodate Jerrod's drumming.
He's willing to compromise.

Jerrod: OK (He starts to calm down)
Jerrod offers to compromise here as well.

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Once the children had sorted out their power issues and status within the group, they were able to collaborate by accepting suggestions and building on each others' ideas. Even though there still were disagreements, the tone in which these were discussed and resolved was non-confrontational and less aggressive than it had been at the start. (See Appendix D4.)

In the end, this collaboration resulted in a composition that was satisfying to all members. The boys proudly shared their piece with the whole class.

How David Benefited From Working With His Peers

David’s enthusiasm and his pride in sharing the composition with the class indicated that the collaborative music activity was a positive one for him. His ability to work cooperatively in order to produce this satisfactory outcome for himself involved much negotiation and some support from his peers. In this process David asserted his needs, offered suggestions and learned to accept of the ideas of the others. Without these skills, he would have had a less than satisfactory group experience. Learning to accept the ideas of others and to build on those requires a situation where the power dynamics of the group have been ironed out and trust between members has either been established or continues to be developed. After having spent some time working out these matters of status
and trust with his group, David was ready to listen to suggestions from Rob and Jerrod.

In the problem solving scenario, David was challenged to collaborate with a group of other speakers and listeners towards a joint goal of mutual understanding and common knowledge. This complex task invited David to listen actively and reflect on what the other speakers were saying, to clarify his own ideas and to identify areas of similarity or difference in the respective arguments. At the same time, he was required to make decisions about which solution seemed the most logical and then select one by reasoning. Anderson, Clark and Mullin (1994) point out that the interactive skills which young listeners and speakers need to master in order to participate successfully in collaborative dialogues do not evolve naturally. Acquiring language does not necessarily result in the simultaneous development of communicative effectiveness. Anderson, et al. further report that children who are most successful at engaging in "interactionist" or "collaborative" dialogue are those whose adult conversation partners do more than simply maintain the conversation. They invite an exchange of information where the message of the talk is of primary importance. While David's skill at collaborative dialogue was less than expert, continued opportunities to
participate in such discussions with both expert peers and adults would no doubt improve his abilities.

**Things I have learned about David from these observations**

David's engagement in a task depended on two factors: his need for socialization and his curiosity around the task. David's need for belonging to a group was more important than I had realized. Because he was a child who was able to work independently, I had underestimated his need to feel a sense of belonging to the classroom community. While I noticed that he enjoyed working with Joey, I was reluctant to allow the two to work together because of my belief that they would not engage with the task as well as if they were working with a partner who was not their friend. I can now appreciate how working with a friend can at times have positive influences. A question for further investigation might then be: How does working with friends support or detract from an individual's learning?

Something else about David that I became aware of was his ability to understand a transitivity problem. It was difficult for him to grasp the notion of Ivan the dog being equivalent to two grannies and an acrobat. For David, the fact that Ivan tied two grannies and an acrobat did not mean the same thing as Ivan being equivalent to these characters. Ivan tying the two grannies was a separate event different from Ivan being
equivalent to two grannies and a acrobat. David may have focused on the winning/loosing aspect of the tug of war with the resulting tie as being a neutral outcome, not winning nor loosing. For him, finding the equivalence in strength between characters may have had some numerical value attached to it, or at least a matching-up of some sort.

**Implications for practice**

I now recognize that the struggles for power are part of the group process and I have a different appreciation for these exercises as opportunities for children to use language to negotiate needs, to persuade, to clarify intentions, both for themselves and others. As well, these negotiations seem to be an important part of the process of establishing a commitment to the task at hand. This is a vital precondition for collaboration.

I also see the outcome of a lack of explicitness about the ground rules that govern small group discussions and whole class presentations. For David, this was not common knowledge. He was not aware of the difference between using language in the small group to clarify thinking and the more formal structures needed by the presentation mode. Mercer and Edwards (1981) point out the importance of making ground rules explicit. They show how misunderstandings often arise from a lack of shared awareness about the “hidden”
rules, the presumed understandings by which classroom activities are navigated. Surfacing the criteria for presentation and discussion modes by making ground rules more explicit might improve children's understandings of the different ways that language is used in these types of tasks.

Lastly, as a result of these observations and of my investigations into the literature of interactive communication, I am more aware of the complexity of discussions and of the skills necessary for collaborative dialogue. Comments by Anderson, Clark and Mullin (1994) clearly outlined for me, my role as the adult partner in collaborative conversations. I intend to be more explicit about discussing with children the skills they need for this type of encounter: active listening, paraphrasing, verifying, questioning, confirming, explaining, clarifying and synthesizing. As well, I plan to foster the development of these more consciously by providing opportunities for children to learn and practise these skills.

Who was Jerrod?
Jerrod was a nine year old fourth grade student who was in my third grade class along with Joey and David. When he first came to our school, Jerrod was shy and reserved and lacked confidence in his abilities. The youngest child in his family, Jerrod was a beginning reader during most of third grade, but made good progress the next year and was reading almost
fluently by the end of fourth grade. These improvements and others dramatically increased his confidence. Jerrod had high status among his peers because of his athletic ability, his sense of humor, his willingness to assert his needs and wants and his skill at representing his thinking though drawing. Jerrod was a team player and an organizer and children frequently gravitated towards the activities he constructed. He often played with David and Joey, but also had other friends. Jerrod was a sensitive child, who openly showed his feelings. He had a quick temper and could be easily frustrated. Jerrod had a high level of energy and a large capacity for intense engagement in tasks.

How Jerrod Participated in Groups

When Jerrod chose to explore how water could be transferred from one vessel to another without having to pour it, he was clearly in charge of the activity. Other children who joined in on the investigation knew this and were aware of the unspoken rule, “anyone who initiates a task has control of the proceedings and may direct the activity.” Jerrod’s initial role then was that of director. He explained the task to the three other boys, Joey, David and T.J. and set up the equipment. He used a long clear tube with a pump attached to one end and an opening at the other that was fitted around a tap. He then turned on the tap and watched as the water flowed through
the tube and out into a plastic receptacle. This container was 
elevated on a six-centimeter high wooden block and 
positioned so that when the water in the container 
overflowed, it would spill into a tote tray placed just below the 
container on the block.

As the other boys became engaged with the task, they 
 began to challenge Jerrod’s authority as director and 
 proceeded to lobby for acceptance of their own agendas. 
 David was interested in trying to siphon water from the plastic 
 container into the tote tray. Joey wanted to build a channel for 
 the water to flow through. Throughout these bids for control of 
 the activity, Jerrod continued to assert his intentions. Jerrod’s 
 use of “we’ll” and “let’s” suggest that he still desired 
 collaboration, even when Joey had left the scene to carry out 
 his own idea and David had begun siphoning in spite of 
 Jerrod’s imperatives not to. (See Appendix JR 1.)

Jerrod’s notion of collaboration resembled parallel play 
 and the talk that he, Joey and David engaged in promoted this. 
 Each individual declared his needs with little responsiveness to 
 the other participants’ comments. During this activity, the 
 children worked independently of each other, yet used 
 language to indicate each one’s intentions of working 
 collaboratively. This tactic of using the language of 
 cooperation (“let’s”, “we”, “we’ll”) to promote individual
agendas was a non-confrontational bid to obtain control of the group. In the end, individual wishes predominated and the group was not able to arrive at a consensus about which activity to work on collaboratively. (See Appendix JR 2.)

The drive to meet their own personal agendas was strong. Since the task was self-directed and the children themselves chose to gather at the science center only because of their common interest in water play, there was no real obligation to collaborate. They had not been able to agree on a common goal. Their use of the inclusive “we” and “us” was more of a negotiation strategy to present their own suggestions rather than a genuine desire to identify a task that they could all work on. Wells and Chang (1988) consider collaborative talk to be talk that enables participants to achieve goals. Goal setting is then, an important precondition to collaboration. When children lack a common purpose, there is no need for them to work collaboratively and opportunities for an exchange of perspectives, a shifting of beliefs, a new connection between prior knowledge and new ideas are unlikely to materialize. Another element of collaborative talk that was absent from this discussion was the characteristic of intersubjectivity which requires that the participants establish a connection that ensures that mutual understanding is developed and maintained throughout the conversation. Along
with the absence of this important trait was the equally critical and missing element of contingent responsiveness. In order for collaborative talk to fulfill its purposes, contingent responsiveness on the part of group members is necessary. It is through this process of meaningful and relevant responsiveness and the commitment to developing a shared understanding that collaborative talk is at its most powerful. With neither of these factors present in the children's talk, as well as the lack of a commitment to a common goal, this discussion could not develop into a collaborative dialogue.

By contrast, the music composition activity had a clear goal that the children worked together to achieve. This task invited opportunities for collaborative discussion. In this scenario, Jerrod worked with Rob and David to create an original musical composition. His skill in this area of using language as a tool for collaboration was not yet developed. Like Mara, Jerrod had a limited repertoire of strategies that he used to make suggestions and influence the ideas of others in his group. He resorted to directives, repetitions and negations of the ideas of others to assert his own. He had not yet learned how to listen actively to others, how to paraphrase, question, explain, synthesize and clarify. However, as the children began to identify a common goal that all group members could work towards, they began to establish a commitment to
contingent responsiveness where their utterances were relevant to the topic under discussion. Through this close attention to the relevancy of their talk, they started to build a shared understanding that would eventually lead up to the achievement of the goal. This did not however occur smoothly and without negotiation on each individual’s part, as the transcript reveals.

Jerrod: 'Kay we need to plan this. OK
First let’s make a beat. David ***
*Jerrod signals to get the group focused on one idea, then offers an idea in a directive way.*

David: Let me do it.

Rob: You could make a jingly beat.
David: Rob... get a life!
‘Kay we could go like this.. (sounds of instruments playing)

Jerrod: No that's too high. I, I...
*Jerrod rejects David’s idea.*
Rob: That's not too high a pitch. Let's make it a low pitch, like this...

*Rob is trying to remain neutral here by taking sides with both David and Jerrod.*

Jerrod: Maybe, maybe... like this (He pulls the mallets from David's hand. David doesn't let go.) You have to have two like this, (refers to mallets) emm where's the tote tray? *And we're we're* (He gets up top look for the tote tray.)

*Jerrod wants to offer his own ideas and does so in an assertive way by grabbing the mallet from David. He then goes off to look for the tote tray where he thinks he will find more mallets*

Rob: *or we, or we...*

David: *Jerrod, if* you didn't rip this up it would've been a lot better.

*David expresses his annoyance at Jerrod for having damaged the hand drum.*
Rob: Let's see, guys, know what we COULD do..., David. We could we could make a sort of thundery little beat. (sounds)

Jerrod: These ones, look, see? Look. (shows him some instruments)

*Jerrod is speaking to David. While David rejects Rob's suggestions, Jerrod simply ignores them.*

David: (To Rob) No.

Rob: Like a thunder. Right?

Jerrod: Too high. (He is referring to the cymbals that David is playing.)

*He rejects David's suggestion of using the cymbals*

David: (To Rob) Wrong. Mallets. I don't like these mallets, I like these mallets. (He switches pairs of mallets. Drums and cymbals continue throughout)

Jerrod: Here lemme use this. (He reaches for the drums.)

(Drum and cymbal sounds are heard in the background.)
Jerrod: No that's too high. (Referring to the cymbals. Jerrod has been moving around the two boys, first standing then sitting behind them and now sitting in front of them.) It's a high pitch. 
*Jerrod states his opinion, asserts his ideas.*

Rob: Ya, those, those are high pitch David. 
*Rob agrees with Jerrod, maybe hoping to gain some clout by doing so. Rob also uses music terminology which Jerrod initiated. In this way he is using Jerrod's language as a model and is incorporating new vocabulary into his own repertoire.*

David: Let's do the Haida song. 'kay.... hold on (drums) (David is drumming. Jerrod has the guiro and mallet, Rob, the bells.) 
*Offers a suggestions, using the collective, "we".*

Rob: Is this sorta like a Haida little ***? (Plays the inside of the guiro with a mallet) (Jerrod starts to take the drum from David who is playing it.)

David: (To Jerrod) I'm doing the drum!
Asserting his intention and his authority.
(Jerrod then turns to Rob and takes the guiro from him. Rob lets him have it and picks up the sandblocks and the bells.)

David: We present... We present... (He hits the cymbals...)...the Haida song.

Jerrod: (Making sounds that he thinks resemble Native chanting.)
By doing so, Jerrod indicates his agreement with David and signals his compliance with the idea.

A while later in the discussion and with support from David and Rob, Jerrod was able to move away from his familiar strategies of negotiation. He attempted to use language that built on the ideas of others rather than use contradictions or directives.

David: (Talking to Jerrod nicely.) 'Kay let's see. Try to add in a little softer beat to mine ok? 'Cause the bells...

Jerrod: OK (He starts to calm down.)
David: Let's see

*Signals, the use of "lets" suggest collaboration, group membership, restoring of a cooperative tone. Had he said "Let me see", collaboration might not have been implied as clearly.*

(David plays the tone blocks, Rob the sandblocks and Jerrod plays the drums more softly as requested.)

*The actions that follow suggest the restoration of collaborative intention and of a collaborative atmosphere.*

David: Well maybe they'll like it.

*David refers to the audience that will be listening to this composition.*

Jerrod: (Jerrod is calmer now, his tone indicates that). A dripping... (drum sound) *Jerrod makes a suggestion.*

David: Well like, maybe like this.. here (He leans over to Jerrod's area and plays drums to demonstrate. He uses the same rhythm pattern that he has composed for the glocks.)
Because of the restored collaborative tone, David can use the word "maybe" without feeling like his power is going to be threatened. Here, he can afford to suggest rather than offer a directive.

Jerrod: (Jerrod speaks in a pleasant voice.)
No like a dripping?... of water? and then you’re playing like a soft tune?
Here, Jerrod offers a suggestion using a question form. The renewed trust allows him to do this. Earlier he would have offered his ideas using an imperative, which would also have served the purpose of asserting his power. Because he doesn’t feel a need to assert his power, he can offer his ideas more gently, less aggressively.

Because of Rob’s skillful mediation of Jerrod and David’s conflict, the group could now continue developing their composition by offering ideas, listening to each other’s suggestions and incorporating these ideas into their respective parts. (See Appendix JR3.)

At the end of the session, the boys presented their musical composition to the whole class. They were able to engage in a collaborative dialogue because a common goal had been
successfully negotiated. As well, once their power struggles had been resolved and each member felt comfortable with his chosen or designated role within the group, collaborative dialogue could begin.

How Jerrod Benefited From Working With His Peers

Jerrod’s participation in the musical composition activity helped him in a number of ways. Some of the language structures modeled by both David and Rob were important for Jerrod to hear. Fortunately, he took advantage of the opportunity to try these structures out for himself. For example, instead of offering ideas with directives, at one point, Jerrod used a question form. “No like a dripping?... of water? And then you’re playing like a soft tune?” He also used a different tone of voice, softer and less confrontational than the one he used to issue his directives. Jerrod’s experience of success after having used new language structures for collaboration might have encouraged him to try these again at another time. The concert was well received by the class and all three boys felt proud of their creation. Jerrod’s confidence would most likely continue to increase with positive outcomes such as this one. If I were still teaching Jerrod today, I would offer him further opportunities to work in a variety of groupings and activities where others could model for him the
different uses of language and where he could himself explore different registers.

Implications For Practice

I am becoming more aware of the consequences of my Piagetian background. Piaget contended that children learned best by doing and that it was through active engagement with a wide variety of materials and experiences that learners made connections for themselves, that is, internalized concepts. In this scheme, the role of language is to represent symbolically those conceptions that have been constructed through the process defined as accommodation. For Piaget, language was not the source of thought (Donaldson, 1978). He believed that thought resulted from direct action and that language symbolized it. These assumptions, which I have myself internalized, have led to a practice where language has not been used as a transactional tool between individuals, to mediate the construction of meaning and to develop shared understandings. I have overemphasized the “action/experience” aspects of learning and as a consequence of these Piagetian beliefs about the role of language, have not focused on fostering the development of shared understandings, nor cultivated meaning-making through language. Over the past years in my classroom, individualized learning has taken priority over the construction of communal
understandings and language has been relegated to a "messenger" status where its purposes are to translate or represent what individuals know, but less often to embody or construct meanings collaboratively. In reviewing the tapes of this study and their transcriptions, I notice how I deliberately step out of the scene in the belief that children will "sort things out for themselves" when working at centers. While my original purpose was indeed to observe and collect data on how children interact with each other in the absence of their teacher, I am aware that I have tended to let students "discover" without the support of teacher/pupil dialogue.

Shifting to Vygotskian perspectives where language and thought are intricately connected, almost to be indistinguishable from each other, suggests that experiences that learners encounter need to be supported through dialogue that contextualizes them. This enables learners to make connections with their prior knowledge as well as participate in a communal sharing of knowledge construction.

I now also see a different dimension to the role of mediator. Stepping in and discussing intentions with the boys at the water play center might have helped them articulate a common goal that would have brought about opportunities to for collaborative talk. Left to their own devices, these children were not skilled enough to press past their personal agendas.
and define a group task. Furthermore, there seemed to be little awareness of the benefits of collaborative work. While I value talk in the classroom, I have not overtly designed situations where as a community of learners, we can talk about the benefits of working in groups and of discussing our learning with each other. I now recognize that children need opportunities to talk about talk and about how thinking and talking are reciprocal endeavors. I see how Jerrod, Joey and David have had positive experiences working in groups and how they naturally gravitate towards their peers, but I am also aware of how the skills of effective communication in collaborative situations for the purpose of sharing ideas and building common understandings need to be more consciously cultivated, as they do not seem to evolve on their own.
Talk About Talk

119 Collaborative Talk
At the beginning of this study I believed that if children were encouraged to work together, collaborative talk would result naturally as a feature of the social context. In examining four case studies of children working in small group settings, I have noticed that this occurred only under certain circumstances. I found that children working with their peers did not readily use language to exchange ideas and build on each other's thinking. Instead, they spent much of their time negotiating power and social status among themselves.

Wells and Chang (1988) define collaborative talk as talk that enables one or more of the participants to achieve a goal. Once a commitment towards a common purpose has been established, speakers share their thinking in a forum where inter subjectivity (mutual understanding) and contingent responsiveness (relevant responses) are the dominant characteristics of the talk in which they engage. This study suggests that certain conditions must precede even those fundamentals if collaborative talk is to occur. Before children can commit to common goals, begin to develop a mutual understanding of each others' points of view and respond in relevant and meaningful ways, there needs to be a period of negotiation where issues of status, power, intentions and integrity can be ironed out. Wells and Chang (1988) do comment that "in most cases the participants in a collaborative
dialogue are of approximately equal status, each able to take either of the roles of principal actor or facilitator ...” (p.96) . From their data, it seems apparent that while the children may have disagreements about the content, personality conflicts and factors that affect the social climate of the classroom are not an issue. In this study, children needed time to negotiate the parameters of their jurisdiction. They also needed some indication from each other that their interests would be respected and not compromised, if they did indeed engage in a collaborative effort. Once this had been established, children at times needed to re negotiate those boundaries before they could continue with their discussions. Bakhtin (1986) believes that dialogue inevitably involves negotiations since no two participants ever share the same set of social worlds.

Other factors that influenced the children’s ability to participate in collaborative talk were their competing social and emotional needs and their interpretations of the tasks at hand, that is, the shared understanding or tacit common knowledge. David’s emotional need to recreate an alliance with Joey, and later with his whole group, a bond which he perceived to have been compromised through the discussion, was more important to him than asserting his own opinion. As well, his interpretation of the discussion as a social conflict, where the differences in point of view were perceived as a
betrayal of alliances, impacted upon his ability to use the discursive forum to negotiate meaning rather than control. In the water play activity, we see how personal interests impinge on both Jerrod’s and David’s ability to begin setting common goals that will lead to collaborative discussions. In Mara’s case, her need to be recognized by her peers and her preference towards a power-based social status influenced her willingness to participate as an equal member, thereby creating a power imbalance within the group that interfered with not just her own, but other members’ ability to engage in a collaborative dialogue.

While it is true that not all tasks must be collaborative in nature, recognizing the features of collaborative discussions is useful knowledge. It helps us, as teachers, to appreciate the complexity of children’s use of language and the diverse purposes for which language is employed. Further it underscores the importance of the social realms of children and the connectedness of their cognitive growth with their social and emotional states of being. Ann Dyson’s (1993) work with pre-literate children emphasizes the interrelatedness of children’s social worlds and their progress towards literacy. By defining who they were vis-a-vis the changing social landscapes of the moment, Mara, Jerrod, David and Joey were essentially sharing themselves. The exchange of ideas, the
revelation of their thinking around an issue could be regarded as another dimension of this collaborative endeavor.

**Half Truths and Myths: Revising Old Ideas**

Before conducting this study I subscribed to several assumptions that I would now like to revise: One is that curiosity about an issue generates enough interest to drive a collaborative investigation. The water play session is a case in point. While David’s, Jerrod’s and Joey’s curiosity brought them together and sustained their interest in investigating their personal agendas, it did not provide them with the skills to define a focus and negotiate an agreement to pursue a common goal. Curiosity doesn’t in itself command collaboration. In fact, in some instances, as evidenced by David’s participation in the water play activity, it can sometimes detract from the collaborative effort if the drive is strong enough and if the participants cannot come to an agreement about the focus of the investigation because of competing interests.

Another is the assumption that collaborative talk arises from an opportunity to discuss a topic of mutual interest. Scardemalia and Bereiter (1985) have shown that reflecting on one’s learning process is not an inherent skill. It is one which has to be deliberately taught. The art of collaborative talk seems also to be such a skill, one that needs to be directly
cultivated. These children, in spite of having had much experience working together on various types of tasks, did not always engage in collaborative talk. Jerrod and Mara both need to expand the ways in which they use language and although David had some moments of being able to listen to others and respond in meaningful and relevant ways, he was for much of the time, preoccupied by his own agenda and impeded by his lack of skill at using talk to build shared understandings. Only Joey was skillfully able to negotiate his way into groups, respond contingently to others' comments, work at making himself understood, as well as understanding others and commit fully to the common goals of the group. That these children were unskilled at initiating and sustaining episodes of collaborative talk is due in part to the fact that this variety of discourse has not been deliberately emphasized or fostered.

Collaborative talk is a specific type of discourse where each participant commits to building a mutual understanding of perspectives and responds contingently to others in order to achieve a common goal. Children are not always likely to have experienced this way of using language. I am now aware of the need to develop actively this type of talk. In the past I had assumed that if children met under conditions where talk was likely to occur, where they had a common interest in
investigating or discussing particular issues, then talk of the type that would promote some shift in their thinking or some reconnecting of new ideas with prior knowledge would happen naturally. I now see that this is not always the case and that collaborative talk where children intentionally seek to understand and be understood, where they respond to each other in relevant, meaningful ways needs to be actively developed and refined.

A third idea I reshaped was the notion that as teachers we can isolate one aspect of a child’s development and in medical fashion, target it with strategies and experiences or activities that will hasten and enhance its development. The interconnectedness of all aspects of being grows more and more evident for me as I listen and watch children talking and learning. Just as language and thought are so intricately tied as to be different parts of the same whole, cognitive development cannot be separated from its social and emotional dimensions. What this implies is a different view of children’s learning. Rather than assuming a diagnostic perspective where treatment is administered to rectify a deficiency, I intend to use observations as information leading to one of many routes that students might explore.
Cooperative learning has been in vogue for several years now and one would be hard pressed to find an elementary classroom in B.C. who doesn’t in one way or another incorporate some aspect of this type of teaching. From the earlier influences of the Johnsons to my more recent experiences working with Gordon Wells, I have valued collaborative strategies as important ways to foster growth in the social, emotional and cognitive realms. However, it is only very recently and through observations of children in this study that I can truly appreciate the power that collaboration has in promoting cognition. Joey’s experience of crafting an argument through the process of collaborative talk illustrates some of the benefits of using this particular language structure to develop thinking skills. The repetitions and rehearsals he engaged in, the scaffolding that Carla and David provided him, the opportunities to articulate succinctly his perspectives and repair any ambiguities allowed Joey a forum for developing his ability to reason. In many ways, this is similar to the prewriting and early drafting stages of the writing process where ideas in incubation begin to evolve. Even in the musical composition episode where the incidence of collaborative talk was somewhat limited by the participants’ ability to use these skills expertly, children were still able to
achieve the goal of creating a musical composition by listening to each other carefully and responding relevantly, by integrating new ideas and explicitly clarifying suggestions for both others and themselves.

Wells and Chang (1988) point out that the characteristics of written discourse: explicitness, connectivity, justification and relevance are very similar in nature to the attributes of collaborative talk: goal attainment, a striving for intersubjective, mutual understanding and contingent responsiveness. They suggest that the process of becoming literate can potentially occur through speech as well as through the experience of writing. Dixon and Stratta (1986) concur with Wells and Chang and feel that young learners develop a proficiency for logical thinking first through talk, then later, through writing. "...it is at least possible, if not highly likely, that for many young students certain forms of dialogue help them to develop a line of argument well before they are able to sustain it at the same level in written form." (p.11)

Wells and Chang also believe that it is the way in which language is used that defines literate thinking. This involves using language to make one's point of view explicit and relevant to the position that is adopted by the other. It concerns an awareness of alternative solutions or arguments and a recognition of the ways that one can justify these
perspectives by appealing to one's knowledge base. Literate thinking also entails conscious reflection about one's efforts and about the outcome of the exchange. Obviously, not all kinds of talk promote literate thinking. Because of its reflective aspect, where the speakers are consciously aware of the need to construct intelligible arguments, and because of the participants' commitment to inter subjectivity and relevance, collaborative talk offers the most potential for the development of literate thinking (Wells & Chang, 1988).

**Implications For Practice**

Incorporating into my practice, a more Vygotskyan approach that emphasizes the socio-cultural and discursive bases of knowledge will require a reframing of the notion of knowledge as socially constructed phenomena and necessitate a reevaluation of effective strategies that support these beliefs. Foremost in that shift will be a new approach to developing cognition in young learners. True to child-centered ideology, I have tended to focus on the individual's needs without considering the socio-cultural contributions that contextualized the child's learning. I have undervalued the potential of teacher-pupil discourse as an important medium through which thinking develops, and have been reluctant on many occasions to make knowledge explicit in the belief that children would be deprived of the power of discovery.
I now see that the role of facilitator necessitates a more intensive engagement with the learner that exploits language to further cognitive growth. Specifically, this would entail a more active participation on my part through genuine, relevant questioning, reflecting, challenging, verifying and clarifying during conversations with students. Through talk, I need to be working with children to contextualize their experiences, to help them make explicit connections between prior knowledge and new learning. Piagetian ideology has led us to believe that experience and discovery were the route in the pursuit of knowledge. But experience that is not situated in a context and activities that are conducted in settings where the ground rules are implied and not a part of the shared understanding or common knowledge of the community of learners do little to facilitate conscious and intentional cognitive growth. Making all aspects of the learning process explicit to students and continuing to foster metacognition are vital.

Recognizing collaborative talk as a strategy to improve literate thinking is another new idea for me. In reviewing the tapes and transcriptions, I see the potential of this approach but also wonder about the pragmatics of daily classroom life and wrestle with the logistics of spending enough quality talk time with each student. In considering the role of the expert
however, I have noticed how children who appreciated group processes were themselves able to play a facilitative role. Both Rob and Joey encouraged and supported their group members by modeling appropriate behavior or by issuing directives to their peers that demanded their focus on group activities. Teaching the skills needed for collaborative talk explicitly, modeling this form of discourse in my conversations with children and encouraging students to support each other seem to be necessary aspects of helping children learn to use collaborative settings effectively.

For my part, using collaborative talk to foster literate thinking would necessitate more attention to the debriefing component of experiential tasks. As children are involved in process and discovery, intermediary, scaffolding steps need to be emphasized. In these steps peers, adults and personal reflection help children contextualize their experiences. Previously, in my classroom, this part of the lesson played an essentially summative role that served as a descriptive record of the activity. Now, articulating the connections between old and new ideas, justifying perspectives by appealing to one’s knowledge base, identifying ambiguities and consciously illustrating the repairs made to these inconsistencies in reasoning, describing alternative solutions or arguments will all be encouraged as part of the reflective process.
In talking with children I will be more conscious about modeling the moves towards mutual understanding and contingent responding. I will encourage students to describe explicitly their ideas, to justify their reasoning, to explore alternative solutions and perspectives, to identify ambiguities and begin to repair these collaboratively if necessary. In this way, I will begin to work with students to develop a shared understanding and lay down the foundations for developing literate thinking skills.

In view of these new ideas and in retrospect of the lessons recorded and transcribed for this study, here is how I might have participated, had I known then, what I know now.

In the water play activity I would have intervened and helped the children move towards setting a common goal for the group. I would have acknowledged that Jerrod, Joey and David had different tasks in mind before guiding them towards coming to a consensus about which task to focus on: the building of a water channel? The use of a siphon to transfer water from one container to another? Or the initiation of a transfer of water by making one container overflow into another? Once the children had agreed to a common goal, I would have continued to scaffold the learning by inviting them to describe what they were doing and explain any theories that they had, challenged them to search for loopholes and
inconsistencies in those theories, and made explicit this process of using talk to foster cognitive growth. I would have also built in more time for reflection after the activity. As well, an opportunity to share findings with other small groups or with the whole class would have provided them with yet another situation for the repetition or rehearsal of their developing theories. Eventually, a written piece, modeled on the discursive nature of their collaborative experience might have added a third dimension to their learning. Aimed at an audience of peers, this article could include a statement of beliefs, a justification for their reasoning, a presentation of contradictory evidence if any, comments regarding ambiguities noticed or challenges proposed by others and their responses to those as well as a summative reflection on how their prior knowledge shifted or grew as a result of these experiences.

Further Reflections on Process

Writing this paper has provided me with the opportunity to witness my own ideas change and grow in collaborative contexts. Through discussions, both of the more immediate (oral) and extended (written) variety, I’ve had to use language explicitly to make my point of view clear and relevant to the position that is adopted by the other. I’ve had to develop an
awareness of alternative solutions or arguments and search for ways to justify these perspectives.

Conscious reflection of my efforts and of the outcome of the exchanges has also been a critical part of the process. As new insights unfolded, I became more aware of the ever changing nature of coming to know. Knowledge is not static. Our linguistic tradition of classifying knowledge in the "noun" realm, defies its transitory, dynamic, creative, interconnectedness. Much like a living organism, knowledge is always in flux, sensitive and responsive to the context in which it exists. The naturalistic approach I have taken in conducting this study has affirmed my beliefs about learning even further. Naturalistic studies emphasize the close relationship between context and meaning. This accentuates the personal nature of learning and encourages the researcher to form connections beyond cause and effect.

In my practice this affirmation of knowledge as an active meaning making process manifests itself in the form of more tolerance for the diversity of learners' experiences, where they come from and how they come to know; more acceptance for the wide range of representations of knowledge; less attention to the rigidity of expected learning outcomes and more respect for what learners do with the knowledge they create.
Action research is a powerful tool for the reflective practitioner. Whether it confirms or contradicts our underlying assumptions, action research ultimately invites us to consider and rethink. Stenhouse (1975) was right. As teachers we need to see for ourselves in order to understand. I believed in the value of collaboration because of what the "experts" said. I have now seen and understand for myself why that is so.
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Appendix A

This is a sample of the letter of consent that was sent out to parents requesting their permission to video tape their child in class.

Dear Parents,

As some of you are aware, I am presently a part-time student working on a Masters of Arts in Language Education at the University of British Columbia. As part of this programme, I am required to conduct an original piece of research and to report these findings in a thesis. Because of my interest in children's language development, I have decided to investigate the nature of children's talk in collaborative settings. Several theorists (Vygotsky, Wells, Halliday) believe that one of the ways children is through talk. I am curious about how children use these conversations to make connections between new ideas and what they already know and so in my study, I will be looking at the types of talk children engage in when working with their peers. The study is entitled: Children's Talk in Collaborative Settings.

This study is a descriptive one which focuses on what is already happening in the classroom situation. I do not intend to alter any of my classroom routines or procedures, rather, I am looking to record what is already happening in order that I might more closely analyze the nature of talk that children engage in when they work with others. I plan to use a video camera and an audio recorder to tape regular lessons. This procedure will allow me to look back at those lessons. As I view the tapes, I will be listening to the student's talk and I will be looking for patterns in the types of talk, in how connections are made and on how children build on each others' ideas. This is valuable information for me as a classroom teacher as well as a graduate student because it offers me an opportunity to look more closely at my practice.

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I have spoken with the children and have explained that I will be taping some of our lessons so that I can learn more about how they learn. A colleague, Mrs. English, who is a consultant in our district, has volunteered to help with the video taping and will of course, maintain strict confidentiality. In my thesis, all students' names will be altered to protect their privacy and the tapes will be viewed only by myself, Mrs. English, the students who have participated in the study and the graduate review committee. Upon completion of the thesis, the tapes will be destroyed.

This study will involve approximately three hours of video tape. Three routine lessons, a Language Arts, a Math and a Science lesson will be recorded for analysis. Children will not be required to do or say anything that is not already part of our regular classroom routine. In fact, the more ordinary the lesson, the better, since what I am aiming to capture is the essence of children's conversations during these regular learning episodes. The only difference that the students will experience will be the presence of the video camera, the audio tape recorder and the cinematographer, Mrs. English. After the sessions, the participants will view all or part of the tapes and will be invited to comment on them. This discussion will also be recorded. As well, I will be collecting some samples of students' writing from their learning logs to use as data. This will provide me with one more source of children's talk.

The children themselves will also benefit from the study. As they view the video tapes and comment on their participation in the lessons, they will be reflecting on their learning. This metacognitive skill, thinking about how you learn, is something we routinely work on in class after each lesson. Having video tapes to review will actually enhance this activity of thinking about one's personal learning process.
This study is supervised by Dr. Patrick Verriour of the Department of Language Education, University of British Columbia. He can be reached at 822-8319. It has also been approved by our principal, Mrs. Ramos and the KP School District.

Parents and children may at any time refuse to participate or withdraw from the study and this refusal to participate or withdraw from the study will not jeopardize any future treatment of the child or his/her class standing. Children whose parents refuse participation will be excluded from all video and audio taping. These children will be supervised in another area of the classroom, but will be expected to continue to participate in the regular lessons.

If you have any question regarding this study, or any parts of it, please contact me at the school or in person. Please complete the form whether or not you choose to participate. There is a separate form for your child, which he or she should also complete. Please read the letter attached and discuss it with your child before completing it. I would also appreciate it if you could return this as soon as possible.

Thank you for taking the time to read this lengthy letter. I know how busy you all are!
Sincerely,
Rosamar Garcia

Parent’s Consent Form
I do/ I do not give permission for my child ___________ to participate in the study entitled: Children’s Talk in Collaborative Settings that is being conducted by Rosamar Garcia, a graduate student at the University of British Columbia. __________________________

Signature

146 Collaborative Talk
Appendix B

This is a sample of the student's consent form that was sent to all children in the classroom.

Dear ________________,

Did you know that your teacher is a learner too? Like you, I'm curious about a lot of things and enjoy challenges. One thing I'm wondering about these days is how kids learn from each other and how they talk about what they are learning. I know how much you like working in groups because you always ask me, "Can I work with friends?" I would like to find out more about what happens when you work with friends. What do you talk about? How does talking help you learn? One strategy I plan to use to find out more about this idea is to video tape some of our lessons. When I watch the tapes later on, I will get to see and hear how talking helps you learn.

I would like to know if you are interested in being a part of my research study? You would not have to do anything special, just be yourself. I would video tape you working with your group and then ask you a few questions about what you think you've learned. We would also watch some of the tapes together and I would record your comments as you are watching. I would also like to quote some of your writing.

Some things you need to know are:
• that another teacher, Mrs. English will be helping me video tape the lessons.
• that the tapes will be viewed only by the students who take part, by myself and by Mrs. English.
• that your identity will be private: I will not use your name when I write my article. You can choose one for yourself.
• that you can change your mind at any time.

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• if you do not wish to participate in the study, you will still have to participate in the activity, because it is a part of our school programme, but you will not be video taped.

I hope you will agree to participate, because by being a part of this study, you will be helping me become a better teacher.

Please complete the appropriate form attached and return as soon as possible. Thank you!

Sincerely,
Ms. Garcia

Student’s Consent Form
I, ______________ agree to participate in the study about children’s talk that my teacher, Ms. Garcia is conducting. __________________________

Signature

I, ______________ do not agree to participate in the study about children’s talk that my teacher, Ms. Garcia is conducting.
Appendix C
A guide to reading the transcriptions

• Original utterances have been transcribed in normal style print.

• Descriptions of actions are in brackets. ex. (He pulls the mallets away.)

• Analysis of the talk in written in bold italics. Ex. David offers an idea.

• Talk that overlaps when children speak at the same time is underlined. Ex.
  Rob: Why don’t I...
  David: As soon as I hit this note...
  Jerrod: No, as long as you go like this...

• Talk that was indecipherable is indicated by ***. A few **** indicate a word or short phrase. Several *********** indicate longer phrases or sentences.
Appendix J1

In this excerpt, Joey matches his thinking with Carla’s.

Carla: So this guy’s equal to these two which is um...

*Having received that confirmation, Carla continues trying to find a equivalence in strength between the players.*

Joey: A quarter of her.

*Joey again supports Carla by completing her sentence and the dialogue continues with Carla offering her ideas and Joey building on them.*

Carla continues the rest of the conversation trying to figure out a satisfactory equivalence in strength between the characters.

Mara: ***

Carla: Which is like... like this, this is granny, a granny and a bit and a granny and a bit.

David: Huh?

Joey: We’re trying to figure out..

*Joey defines his alliance with Carla more clearly by using “we” and tries to clarify the task for David.*

150 Collaborative Talk
David: I know but if you
David now joins in by trying to follow Carla's thinking.

Carla: I know!

David: So Ivan the Terrible and one of these...

Carla: And the other..

Mara: You have to cut him up too!

David: Equals a granny and a bit, right?
David asks Carla for clarification. He wants to make sure that he has understood her.

Carla: Ivan the Terrible...
(Laughter)

Carla: Equals one of these guys and two of these guys.

Mara: You have to cut up..

David: Yeah
Carla: And him.. and three of these guys is, **and against four**

Joey: **Part of an acrobat**

Carla: Four of these guys its like let’s see..

Mara: They’re just gona tie, Carla.

Carla: One and a bit, one and a bit, one and a bit, right?
One and a bit right? And then Ivan the Terrible?

Joey: That’s what I was...
Appendix J2

In this excerpt, Joey attempts to clarify the argument for David and in doing so, makes it even more clear for himself.

Mara: So you have, one two three four

Mara: Then four on this side

Joey: You add this guy, that's three. would mean
That would be six

: eight

David: Six!
David tries to follow the argument.

Joey: And these guys would be four, so

Mara: So you have one, two, three, four

Joey: So the grannies might win.
Joey has listened to his own argument and now senses that this is the logical outcome, but he is not completely sure, indicated by his use of the term, "might".
David: But that means these guys are a little bit stronger so I think it's going to be a tie.

Carla: I think the grannies are gona win. *Carla gives her opinion.*

Joey: No but when the grannies had five against two it was a tie. *Joey is still trying to match equivalent strengths, but has his information mixed-up. In the first tug of war, five grannies pulling against four acrobats, not two, ended in a tie.*

David: Ya, grannies, grannies, it's gona be the grannies.

Joey: Now the grannies have another acrobat. *Joey continues to try to explain to David the rest of his argument.*

Carla: The little grannies have a bonus! *Carla tries to restate this understanding in a different way to clarify for David.*

David: cause like, cause like, cause three
Its only three grannies!
David is making his own sense of the information.

Joey: I know but this guy (Ivan the Terrible, the dog) is worth
to one

Carla: I know but watch...

Joey: acrobat and two grannies.

Carla: and two grannies. Right? And so now this guy
Both Carla and Joey are now becoming more clear about the
equivalence in strength between the players in the story-
problem.

Joey: so it would be three.

Joey is clarifying for David that Ivan the Terrible would be
worth three people.

Carla: is on a team with three of these grannies which makes
him worth three grannies plus two and an acrobat.

Carla supports Joey's thinking by describing the composition of
the team in a different way.

Joey: So it would be six.
Joey counts the characters in the diagram based on his understanding of their agreed on definition of equivalents.

David: That would be six.
David echoes Joey’s statement.

Joey: Six against four
Now that the group, mainly Carla and Joey have established the strength ratios, Joey defines the problem: In the tug of way there will be six persons against four.

Carla: Well, so that the grannies are gona win
Carla summarizes the actual outcome of the problem.
Appendix D1

In this excerpt, David tries to contribute to the discussion by reflecting back his understanding of Joey's point of view. He doesn't fully understand Joey's argument or agree with it, but in the end he concedes that Joey might be right. His commitment however, is tentative.

Mara: It IS gonna be a tie.

Carla: Ya. If this guy...

David: **** It is. It HAS to be. These guys are awful strong. 
David is implying that even if there are only four of them, they can still beat the other team with three "grannies" and Ivan the Terrible
If they got macho men like this guy...big big muscles (He draws on the pictures of the acrobats.)

Mara: Oh David!
Mara objects to David's antics with the cut out pictures of the characters which he is using as paper dolls.

Joey: Stop it David!
Joey also thinks this is silly and disruptive. And he issues a directive at David.

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Joey: You see how though... that was a tie because two grannies and an acrobat are as strong as this guy and and you have three grannies who are really strong so this guy with that would equal like up to five grannies. 

*Joey tries to explain his argument to David and to show why David's prediction isn't a plausible one.*

Mara: Everything up there is a tie.

: I know but....***

Carla: Which means that if the five grannies fight these guys AGAIN!!, then they would be a tie.

Joey: It would be a tie. 

*Joey confirms Carla's repetition of a given premise upon which the logic of the solution is based.*

David: So you're saying Joey that if that and that, that would just wipe out those so that, this and that would just equal five? 

*David attempts to reflect back to Joey his understanding of Joey's argument. He continues to want to be a part of the group, and his way of participating is to try to show that he*
has been listening carefully and following along with what Joey has been saying.

Joey: No, NO!

Joey is frustrated with David's lack of understanding of his argument.

Carla: No this guy is equal to two grannies...

Carla attempts to clarify how the characters equate in strength with each other. She understands Joey’s argument.

Joey: And one, and an acrobat.

Joey is finishing Carla’s sentence for her, a sign that they are beginning to think alike and build the argument together. He is in essence saying that the dog is equal to two grannies and an acrobat.

Joey: So you have this guy,

Joey continues to try to clarify for David.

Mara: So you have, one two three four

Mara: Then four on this side

Joey: You add this guy, that’s three... would mean
That would be six

*Joey is calculating the strength of one team.*

: eight

David: Six!

*David tries to follow the argument.*

Joey: And these guys would be four, so

*Joey describes Team 1, trying to help David understand the equivalence of strength between the teams.*

Mara: So you have one, two, three, four

Joey: So the grannies might win.

*Joey intuitively senses that this is the logical outcome but he is not completely sure.*

David: But that means these guys are a little bit stronger so I think it's going to be a tie.

*David participates here by giving his opinion.*

Carla: I think the grannies are gonna win.

*Carla gives her opinion.*
Joey: No but when the grannies had five against two it was a tie

Joey is still trying to match equivalent strengths, but has his information mixed-up. In the first tug of war, five grannies pulling against four acrobats, not two, ended in a tie. This misinformation confuses David even more.

David: Ya, grannies, grannies, it's gonna be the grannies.

David changes his mind. He agrees with Joey, not because he has understood the argument, but because he is tired of the discussion and wants to find a solution to the problem. This one seems as good as any to him. He may also feel that by signaling his agreement, the discussion will end once and for all.

Joey: Now the grannies have another acrobat.

Joey continues to try to explain to David the rest of his argument.

Carla: The little grannies have a bonus!

Carla tries to restate this understanding in a different way to help clarify for David.

David: cause like, cause like, cause three
Its only three grannies!

David is trying to make his own sense of the information.

Joey: I know but this guy (Ivan the Terrible, the dog) is worth to one

Joey tries to define the strength ratio between the characters.

Carla: I know but watch...

Carla is trying to convince David.

Joey: acrobat and two grannies.

Carla: and two grannies. Right? And so now this guy

Both Carla and Joey are now becoming more clear about the equivalence in strength between the players in the story-problem.

Joey: so it would be three.

Joey is clarifying for David that Ivan the Terrible would be worth three people.

Carla: is on a team with three of these grannies which makes him worth three grannies plus two and an acrobat.

Carla supports Joey's thinking by describing the composition of the team in a different way.
Joey: So it would be six.

Joey counts the characters in the diagram based on his understanding of their agreed on definition of equivalents.

David: That would be six.

David echoes Joey’s statement.

Joey: Six against four

Now that Carla and Joey have established the strength ratios, Joey defines the problem: In round three of the tug of way there will be six persons against four, or five grannies and a acrobat against four acrobats.

Carla: Well, so that the grannies are gonna win

Carla restates the outcome.

Joey: That would be...

Carla: Well that gives the grannies a better chance

Joey: Ya, so they'd win because...

Now Joey, after having engaged in this discussion with Carla in order to clarify for David, has clarified the argument even more for himself. He feels more confident about this solution.
David: They MIGHT. They MIGHT WIN Joey.

David is not convinced. He doesn't want to disagree outright, because he probably recognizes that he can't substantiate his own conclusions. Nevertheless, he remains dubious about the predictions that Joey and Carla have made.
Appendix D2

After David has committed the ultimate act of betrayal, disagreeing with his group in public, he now attempts to reestablish his membership by defending his group, even going so far as to change his own mind about the outcome of the problem. Here, David's need to belong to the group outweigh his need to have his own opinion.

Joey: Well the grannies have another player, that's a quarter of a granny another granny too so that'll be six against four. So the grannies will probably win cause they have

*Joey tries to explain his understanding of how the teams equate in strength.*

David: Ya!

*Here David makes a big shift and agrees with Joey's conclusion.*

Joey: Cause at round one it was a tie it was five grannies and four acrobats but um when you add one more granny it would... change it because the grannies would have a extra player so they'd be able to beat the acrobats.

*Joey continues explaining his argument calmly and describes the equivalence in strength more and more clearly each time.*

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He is finding more and more precise language to describe these ratios.

Carla: Sort of like you know when we're trading and you have to go to the bank to trade. Its sort of like trading Ivan the Terrible in for two grandmothers and an acrobat. And that's what they have now. Carla rephrases it with a new analogy, trading. This is a new concept, a new word to describe the notion of equivalence.

David: Well its sorta like, its sorta like um Ivan the Terrible were worth 100 and the rest of the acrobats are only worth about fifty. Or fifty and maybe ninety. But like the ones aren't a people they're like strength. So I think that the grannies have a slight possibility of winning. David understands this idea of trading, so he grabs onto it and now uses his own analogy to explains the group's argument as he understands it. He has changed his mind about who might win and in this instance, he is in agreement though not entirely wholeheartedly, with his group's conclusion. In this way, David aligns himself with his group and defines his membership in it by agreeing with their solution to the problem. He may also have convinced himself as he argues Joey's and Carla's stance.
(A hand from the audience goes up requesting to be recognized.)

David: Kaitlin?

David recognizes Kaitlin and gives her permission to speak. This establishes his control of the floor and asserts his membership in the small group.

Kaitlin: Well how do you know that um, the dog***?

David: Well we were just predicting...

In using the term we, David solidifies his membership with his group.

Carla: That the dog is um......

Carla tries to finish the question for Kaitlin.

David: stronger?

David interrupts and assumes that Kaitlin wants to know how they know that the dog is stronger than the other players.

Carla: equals these three people?

Carla finishes the question for Kaitlin.
Carla: ... because they had a tug of war, the dog had a tug of war, they all had a tug of war against these two people right. Well they tied! ** so that means this dog IS equal to these three because they tied.

*Carla explains the reason they feel the dog is equivalent to two grannies and an acrobat. Here, she is using new vocabulary. She uses the word equal. She also is more expert at ordering her premises logically so that one statement leads up logically to the next and the outcome follows naturally in syllogistic form.*

Joey: They tied, so they're worth the same

*Joey has an other opportunity to rephrase his thinking and in this round of describing equivalents, he too uses the word worth in a new way, he equates it with the concept of tying. In his mind, tying indicates the worth of something.*

Kaitlin: Ya but that's..

*Kaitlin puts up an objection.*

David: What, what, if you had a dog, the dog beat the acrobats that would..

*David jumps right in and answers her objection. He is supporting Carla and Joey by trying to clarify for Kaitlin what*
they have just said. He does this by offering his own analogy. At the same time, by agreeing with Joey and Carla, he reconfirms his membership in the group.

Kaitlin: I know, I know but, the problem is, Kaitlin complains that that wasn’t really what her objection was about. She attempts to put forward her concerns.

David: Why do they have to tie? Why do they have a tie? David is now refuting his own original argument. He assumes that Kaitlin believes that the outcome of the tug of war will be a tie. Although he hasn’t heard her objection, he presupposes that is what she means. In refuting his own solution and by arguing with Kaitlin, he aligns himself with Joey and Carla and defines his allegiance to the group. By doing this, he may also be clarifying for himself, Joey’s and Carla’s argument.

Kaitlin: I know but how many are, I know but how many are.. do you think those three are worth? Kaitlin tries to find the language to describe her problem. She starts of with how many, then she uses the word “worth” to more clearly describe her wondering.

: ***

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They were tied ***

This response doesn’t provide Kaitlin’s with the information she requires.

Kaitlin: Ya but

Here, Kaitlin signals that the response doesn’t provide her with the information she was looking for.

Mara: They make Ivan the Terrible

Mara offers a response that suggests that Ivan the Terrible is worth about the same as the three people: two grannies and an acrobat.

Kaitlin: I know but how ma, like how much do you think, like, like how many points *** they’re like they’re all worth?

Finally, Kaitlin is able to put forward her concerns, “how many points are these characters all worth? She is interested in having the group place a numerical value on the characters. She too, like the others, struggles with finding the precise vocabulary to explain her thinking. As she repeatedly attempts to state her questions, her thinking is clarified.

Carla: Three people?
Carla asks for clarification about which characters? The three people? (two grannies and an acrobat which are the equivalent of one Ivan the Terrible dog.)

: Well..

Carla: ** Ivan the Terrible !

Carla states that the three people, two grannies and an acrobat are worth one Ivan the Terrible dog. She has misunderstood Kaitlin's request for a numerical value of worth.

Mara: We TOLD you that!

Mara is impatient that Kaitlin keeps requesting what seems to her as the same information. Her use of the word "we", like David's use, defines her alliance with her group.

Kaitlin: No like....

Kaitlin tries to rephrase her question one more time.

Carla: We don't know how many, how much, how much strength they have like because they didn't TELL us like how much strength each one of these people had.
Carla seems to now have a sense of what Kaitlin might be asking. She explains the extent of what the group knows, suggesting that they have inferred their knowledge because the problem has not explicitly, given them any literal, direct information about the strength of the characters in terms of numerical values which Kaitlin is requesting.

David: And besides this is just a fake problem.
David supports Carla and even Mara and tries to justify their arguments by claiming they are simply predicting. He is solidly behind his group.
Appendix D3

The first part of this transcription is presented in the body of this paper. It illustrates David’s use of directives as a means of maintaining his power and control in the group.

David: 'Kay we could go like this.. (sounds)  
*He then offers his own idea.*

Jerrod: No that’s too high. I, I...  
*Jerrod rejects David’s idea.*

Rob: That's not too high a pitch. Let's make it a low pitch, like this  
*Rob takes sides with David, then with Jerrod, then declares his own idea. He is also using the collective” lets” for the first time. Maybe he thinks including everyone as Jerrod did will result in his idea being recognized or accepted.*

Jerrod: Maybe, maybe... like this (He pulls the mallets from David's hand. David doesn't let go.) You have to have 2 like this, (refers to mallets) emm where's the tote tray?  
*And we're we're. (He gets up top look for the tote tray.)*

Rob: *or we, or we....*
Beginning to offer a suggesting, making sure that everyone is included by using "we." In this way, the chances of his idea being accepted are better than if he stated his own wants or if he issued directives. Since he hasn't had much success with that over the past few tries, this may be seen a switch in his strategy to get recognition and elevate his status in the group, particularly after David's put down.

David: Jerrod, if you didn't rip this up it would've been a lot better.
**David expresses his annoyance at Jerrod.**

Rob: Let's see, guys, know what we COULD do..., David. We could, we could make a sort of thundery little beat. (sounds) **Rob continues to use this strategy of using "we" to suggest his ideas. Also, by referring to the other two as "guys" he puts himself on equal footing with the other two without overtly declaring a battle to gain status. In using "guys" he becomes one of them. No argument has been necessary, they may not have even noticed his intention to equalize the power, which he has for the moment, by this choice of words.**

Jerrod: (to David)These ones, look, see? Look. (shows him some instruments)
David: (To Rob) No.  
With one word, David rejects Rob's idea and asserts his authority.

Rob: Like a thunder. Right?  
Rob persists, asking for agreement and compliance.

Jerrod: Too high. (He is referring to the cymbals that David is playing.)  
Jerrod rejects David's idea.

David: (To Rob) Wrong. Mallets. I don't like these mallets, I like these mallets. (He switches pairs of mallets. Drums and cymbals continue throughout)  
David asserts his opinion and authority even more forcefully again using only one word. This word, "wrong" is even more powerful than "no", because it has the connotation of a put down as well as rejection. "Mallets" is another way David states his needs. He is also thinking out loud here, when he says, "I don't like these mallets, I like these."

Jerrod: Here lemme use this.  
Jerrod asserts his wants.

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(Drum sounds) (Cymbal clashing)

Jerrod: No that's too high. (Referring to the cymbals. Jerrod has been moving around the two boys, first standing then sitting behind them and now sitting in front of them.) It's a high pitch. Jerrod rejects the other ideas and asserts his.

Rob: Ya, those, those are high pitch David. Rob agrees with Jerrod, maybe hoping to gain some clout by doing so. Rob also uses the music vocabulary which Jerrod initiated. It may be his way of staying out of the arguments.

David: Let's do the Haida song. 'kay.... hold on (drums) (David is drumming. Jerrod has the guiro and mallet, Rob, the bells.) David expresses an idea by using a directive.

Rob: Is this sorta like a Haida little ***? (Plays the inside of the guiro with a mallet) Rob wants very much to be accepted. He shows that he has accepted David's ideas and by doing so, hopes David will accept his.
(Jerrod starts to take the drum from David who is playing it.)

David: (To Jerrod) I'm doing the drum!  
*Asserting his intention and his authority.*

(Jerrod then turns to Rob and takes the guiro from him. Rob lets him have it and picks up the sandblocks and the bells.)
Appendix D4

Once the power issues between Rob, David and Jerrod had been ironed out, the three were able to collaborate by accepting suggestions and by building on each others' ideas. The disagreements they had were minor.

David: One instrument per person. (To Jerrod) 'kay do your dripping one.
(To Rob) 'Kay do yours (sandblocks). No do a little softer, like this, Ya. ya ya! Ok. Hold on. As soon as, as soon as.

Rob: Why don't.. I'll..

David: As soon as I hit this note (plays it) you start. No as soon as I hit this note (plays a different, lower one). No as soon as I hit this note (plays an even lower one).

Jerrod: No as long as you go like this.
As soon as you hit three beats, three notes

David: Notes.. As soon as I hit this... (plays a note), I mean this.. 'kay?

Rob: And one, and a two, and a one ,two, three four... (He starts to play the glocks.)

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David: Hold on... Hold on AGHRHHH! (Frustrated tone) I don't know what's going on again! Hold on.

Jerrod: Try and hit the wood. Like move the C and hit the wood.
(Jerrod goes over to the tone blocks and adjusts them for David).
David: But I like the C. I'm suppose to have the C, Jerrod.

Jerrod: O.K.

David: O.K, ok. (Starts playing tone blocks again. Jerrod is now sitting beside Rob and is drumming very quietly. Rob also plays the sandblocks quietly.)

David: I like this sound part.. (plays) Hold on... that sorta sounds rainy, right?

Jerrod: Faster and faster

(David plays the scale piece again then speeds up the note sequence at the end, trilling it. Jerrod has moved to the chair behind David.)
Rob: We could make a rain little tune.

David: We could call this Dancing in the Rain?

Rob: Ya.

Rob: Jerrod, you have a perfect *** (Jerrod continues quiet drumming. He is now standing behind David.)

Rob: I wonder what this could be good for? (plays sandblocks) David, this could be good for*****

Jerrod: No, I don't really like that sound (referring to the sandblocks that Rob is playing). It sounds too like uh ***

David: Rainy

Jerrod: It sounds too like, fuzzy.

Rob: It sounds too wet?
Appendix JR1

Joey, Jerrod and David are involved in a water play activity. They are trying to negotiate a common task that they can all participate in. However, individual needs seem to intrude and coming to consensus is difficult.

David: I'll start siphoning with my mouth

*Explanation/description of his intent.*

Jerrod: ******

Jerrod: We're gona make a .....  

*Jerrod declares an intention.*

Joey: Let's make, let's make kinda of a....  

*Joey offers an idea.*

David: Jerrod, I'll start siphoning in my mouth  

*David informs Jerrod of his intent. He knows this activity was Jerrod's idea in the first place.*

Jerrod: No. No, cause we're gona make it flow over here. (The container which Jerrod is filling is sitting above a second container and a tote tray is on one side of these ready to receive...
any overflow of water from the container which Jerrod is filling via a plastic tube and water pump.)

*Jerrod contradicts David and states his own intentions.*

David: Did you watch this?

Request to focus

Joey: Yeah

Jerrod: No.

Joey: Yes

Joey: Let's kind of make it so umm...

*Joey begins to offer his suggestion again.*

Jerrod: Don't make it siphon cause I'm gona make it flow over.

*Jerrod issues a directive to David and restates his intent.*

(Jerrod continues to pump water into the plastic container that is sitting beside a tote tray. T.J. is at the taps monitoring the water flow and holding the long tubing.)
David: And I'm also going to make it siphon.... (David wants to test his idea of using a shorter plastic tube to siphon water from Jerrod's container into the tote tray. He puts the tube in his mouth and prepares to suck air up into it to start the flow of water.)

David is asserting himself; declaring his intent.

Joey: Guys Let's make it, let's make a log kind of thing. Joey offers his idea and this time completes it.

Jerrod: No. (To David) I wanna watch it go over. Jerrod contradicts David's suggestion and asserts his power, stating his own intentions. He has not responded to Joey's suggestion.

Joey: See, David, I mean Jerrod. (Re-addressing who he perceives has the control.) Let's make it kind of a thing that's airtight so the water can go through it. Joey is requesting acceptance of his idea.

Voices ***

Jerrod: Keep on doing it even if it goes over.
**Jerrod issues a directive to T.J. who is monitoring the tap.**  
**Jerrod still does not respond to Joey.**

T. J.: Watch the crack, watch the crack! (The container has cracks in it and water is likely to spill onto the floor instead of into the tote tray as intended.)

**T.J. issues a directive.**

(Joey comes over and holds onto the plastic container that is receiving the water from the pump.)

Jerrod: I know, we're gonna make it go over, I want it to go over.

**Jerrod asserts his authority, his control of the situation by restating intentions.**

David: I wanna make a siphon just in case.

**David asserts his own intentions, without directly confronting Jerrod's clear control of the situation.**

Jerrod: No not yet.

**Jerrod asserts his authority.**
Appendix JR2

While attempting to promote their individual agendas in a non-confrontational way, Jerrod, David and Joey use a clever tactic, the language of cooperation. “We, let’s and we’ll” indicate an intention towards collaboration, even though the boys were not prepared to sacrifice their own needs and continued working independently of each other.

Joey: Ok, you guys, we're gona make sort of a passage way thing that.... (Joey stands up and moves away out of camera range. David takes over his spot.)

*Joey makes a suggestion about the group’s next task.*

Jerrod: Hey, you guys, you guys now let's um..

*He has not responded to Joey’s comment although he does include Joey in the collective term “we”. He instead begins to suggest his own idea.*

(Sitting on the floor beside the containers, David begins to siphon. Using a plastic tubing he has in his mouth, he sucks up the water from the almost full plastic container that Jerrod has been filling and attempts to get the water to flow from this container, through the tube and into the tote tray which is positioned beside the container ready to catch any overflow of water. He is now sitting facing Jerrod who is also on the floor.

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and continues to fill the plastic container using the long plastic tube and pump which are attached to the taps and sink above him.)

Joey: I'm just gona move this one.

*Joey is referring to the equipment that is in his way.*

David: ** Come on.....Go! Darn I lost it! (Referring to the connection. He is hoping to get the water flowing.)

T.J.: Its going by drops.

*T.J. refers to the way that the water is flowing out the plastic tubing.*

Jerrod: M'kay. Now I got an idea. If it goes over... AW. Turn it on.

T.J. turn it on. (Jerrod holding and squeezing the pump. He wants T.J. to turn the tap on. Joey has left.)

*Jerrod makes a suggestion, apparently about what they should do next, if the container overflows. He has ignored David's siphoning activity and is very focused on his own plans.*

David: I've got a siphon! Jerrod I've got the connection!
David is so focused on his activity that he doesn't respond to Jerrod's comment. Jerrod in turn ignores David's comments. (To the camera) I've got the connection, ha ha! Keep going. Oh darn it. I lost it.

David seems to be aware of the camera as audience. He addresses his comments to them.

Jerrod: We'll try and fill... both of them. But by doing this... and then we'll make THIS fill in this. (Jerrod wants to fill one tote tray with water from the hose connected to the tap. He wants the water to overflow into a second tote, situated a bit lower that the first one.)

Jerrod continues to suggest what the group will do. He doesn't seem to care that no one in the group has acknowledged or even responded to his suggestions.

David: Gotta get this higher. Crap!

(David continues to try to get the siphon going.)

David takes no notice of Jerrod's comments. His comment refers to his own task. He is apparently not talking to Jerrod, he seems to be narrating for the audience behind the camera.

Jerrod: Ah, we're not getting some pumps here.
Jerrod is speaking to anyone in his group who cares to listen. His comment refers to his task, of filling the container so that the water will overflow into the tote tray below it.
Appendix JR3

Once having sorted their differences, the group can now continue to develop their musical composition. Here they offer ideas in non-confrontational ways, listen to each other’s suggestions and attempt to incorporate these into the musical piece.

Jerrod: and it gets faster.. (Jerrod is drumming. Rob plays on the sandblocks and on the guiro.) *Jerrod describes what’s happening.*

David: Let me***

David: One instrument per person. (To Jerrod) 'kay do your dripping one. (To Rob) 'Kay do yours (sandblocks). No do a little softer, like this, Ya. ya ya! Ok. Hold on. *As soon as, as soon as.*

Rob: *Why don't.. I'll.*

*Rob tries to offer a suggestion.*

David: As soon as I hit this note (plays it) you start. No as soon as I hit this note (plays a different, lower one). *No as soon as I hit this note* (plays an even lower one)

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David ignores Rob's attempt to offer an idea and directs that the starting signal will be a note that he plays. He is also thinking out loud in trying to find the notes for the signal.

Jerrod: No as long as you go like this.
As soon as you hit three beats, three notes
*Jerrod contributes his ideas to David's plan. He does this through a directive, "you go like this" and a demonstration.*

David: Notes. As soon as I hit this... (plays a note), I mean this.. 'kay?
*David signals the other two and is also thinking out loud here. With his question "kay?" he is asking for agreement.*

Rob: And one, and a two, and a one, two, three four... (He starts to play the glocks.)

David: Hold on... Hold on AGHRHHH ! (Frustrated tone) I don't know what's going on again! Hold on.
*David expresses frustration and admits his confusion. In his own mind, he still is not clear about which three notes he will play to signal the group to join in with their own instruments.*

*This display of openness, of vulnerability is met by Jerrod’s next turn with a sympathetic offer.*
Jerrod: Try and hit the wood. Like move the C and hit the wood.

Jerrod makes a suggestion. By using the word "try", he offers David a suggestion that admittedly may or make not work. In the second sentence he is more directive. He follows this up with physical actions by moving into David's space and demonstrating.

(Jerrod goes over to the tone blocks and adjusts them for David)

David: But I like the C.
I'm suppose to have the C, Jerrod.

David opposes this suggestion and gives his reason, "I like the C." In case this reason isn't strong enough, he follows up with, "I'm suppose to", as if a higher authority has declared that the C must be in the piece. This is a clever strategy to persuade Jerrod to accept his idea.

Jerrod: O.K.

The tactic worked. Jerrod accepts that David has been mandated to include the "C." note He doesn't question or challenge him.
David: O.K, O.K. (Starts playing tone blocks again. Jerrod is now sitting beside Rob and is drumming very quietly. Rob also plays the sandblocks quietly.)

David: I like this sound part.. (plays) Hold on... that sorta sounds rainy, right?

Jerrod: Faster and faster

*Jerrod makes a suggestion using a directive.*

(David plays the scale piece again then speeds up the note sequence at the end, trilling it. Jerrod has moved to the chair behind David.)

*David accepts Jerrod's suggestion. The fact that Jerrod accepted his earlier one has probably encouraged David to reciprocate and in this case, accept Jerrod's suggestion of speeding up the music.*