Exploratory Talk - A Framework for Building a Community of Inquiry

by

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Abstract

This study examined the effectiveness of the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000) to develop Grade 6 students' talking skills and explored the program's impact on students' attitudes towards group work. Of the 26 students who participated in the program implementation from October 2009 to June 2010, 19 completed the pre- and post-program questionnaires rating their attitudes towards group work. Data sources included audio recordings, transcribed conversations, and pre- and post-program questionnaire ratings and written comments. Data were analyzed to explore the participants' perceived value of participating in small group discussions and to determine changes in the indicators of exploratory talk of four focus students.

With respect to the 19 participants who completed both pre- and post-program questionnaires, the findings indicated an improved attitude toward the value of group discussions, particularly in the areas of challenge, inclusion, justification and collaboration. Many student comments on the questionnaires focused on the positive effects of collaboration. Both group composition and topic selection were also identified as contributing factors in influencing group discussion participation. Data analysis also revealed that after the implementation of the program, students in the group of four increased their use of reasoning words within exploratory talk, particularly with words associated with positioning and claiming, and increased their participation in the number of talking turns and in the length of student utterances. However, data analysis also revealed that equitability of participation improved only for the two male members of the

group. In addition, analysis of the data showed an increase in the number of inclusionary comments directed at individual group members in an effort to build consensus.

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Dedication

To the Fuzzy Llamas

CHAPTER 1

INTRODUCTION

Contextual Considerations of the Study

As an elementary school teacher, I returned to university after 23 years of teaching to understand how I could better facilitate the learning of my students. It has been my experience that within the context of the classroom, busy teachers have little opportunity to investigate and develop alternative approaches for teaching or to recognize and address potential weaknesses in their teaching practice. Consequently, established instructional practices continue to flourish. The privilege of attending the University of Victoria allowed me the opportunity to engage with my peers in classroom conversations and to seek out personal areas of interest for inquiry. Through discussions with others and the topics presented for consideration, I was challenged to think and to reflect on my role as a teacher and as a result, my learning evolved. What I came to appreciate is the value of learning with and from others. From this experience, my interest in how knowledge can be constructed through engagement and social interaction inspired my research project.

Background

For the past five years, I have taught at a fine-arts focused elementary school as a classroom teacher as well as a visual arts specialist for intermediate children. Within this existing framework, the various fine arts subjects are taught in isolation, often segregated from the other concepts/themes/topics/subjects studied in the classroom. Time is in short supply and there is often a sense of urgency underpinning teaching and curricular

learning. Within this school's structural routines, students are shuttled from one room to the next, singing, dancing, painting, reading, while the curriculum is taught betwixt and between. Although the children can be stimulated by the flurry of activity and enthusiastically engaged with their work on many levels, I often wonder if their learning reflects any depth of understanding.

Within this fragmented system, good-hearted attempts by teachers to remedy the disintegration of curriculum often result in connections that seem forced and trivial, "revealing an unsatisfying lack of attention and care to anything in particular" (Clifford, Friesen, & Jardine, 2003, p. 199). However, despite these short comings, there are reasons why teachers continue to try to integrate curriculum. Not only are we told that this approach is what/how we should teach by educational researchers and curriculum theorists, teachers also intuitively understand the potential benefits for integration (Drake & Burns, 2004; Hart, Burts, & Charlesworth, 1997). Unfortunately, what is not revealed or understood is how to treat integration with the attention and integrity it deserves. Integrity in this sense should honor the needs of the students, the beliefs of the teacher, and the topics under inquiry.

While many teachers may well believe in the benefits of curriculum integration, many current modes of practice promote a "random surface skittering over topics" (Clifford, Friesen, & Jardine, 2003, p. 122) that serve only to further disconnect the very situation integration is meant to improve. Integration in this traditional sense is thought of as taking a concept or theme and connecting/integrating it through several strands of the curriculum. Jardine (1995) believes that such activities are the efforts of

well meaning teachers who are seeking to "make curricular fragments whole by surrounding them with other equally isolated, unexamined fragments" (p. 264). He argues that topics of inquiry should be explored in a manner that allows for slowing down and opening up, therefore providing more time for dwelling on the topic and supporting deeper thinking. Jardine (2003) believes that what is lost in many efforts of curriculum integration is "the topography – the ecos, the place – of any particular thing" (p. 124) and what is needed is "keeping things in place, nested in the deep communities of relations that make them whole, healthy, and sane" (p. 122). In other words, curriculum integration should rely on relationships that already exist and not force connections in the name of integration. The challenge is to find the means to not only engage students in activities within and across specific subject areas, but to support them in their exploration of personal areas of interest along with their peers.

Harste (2003) argues that subject disciplines are important but only in relation to the questions students ask for inquiry and suggests that rather than frame curriculum in terms of the content areas, learners' inquiry questions should become the organizational device for individual and class exploration. Integration in this sense occurs in the head of the learner rather than externally imposed through the teachers' lesson plans. Wells (2001) argues that inquiry-based learning is a philosophical approach that influences the teacher/student relationship across all curriculum areas. It cannot be a suggestion for program delivery embedded within the IRP that teachers apply piecemeal from time to time. Nor can it be constrained by a prescribed curriculum framework which imposes

segregated subject areas that are not sensitive to an emergent curriculum evolving from students' needs and interests.

Ray (2006) suggests that an inquiry-based approach to learning "repositions curriculum as the outcome of instruction rather than the starting point" (p. 239). The concept of an emergent curriculum through inquiry is not new (Harste, 1992; Short & Harste, with Burke 1996; Short, Schroeder, Laird, Kauffman, Ferguson, & Crawford, 1996; Wells, 2001; Whitin & Whitin, 1997). However, it has more commonly been adopted as a teaching stance for integration across specific content areas rather than a philosophical approach to teaching across the curriculum as a whole.

What also appears to be particularly absent in teachers' attempts at integration in an inquiry-based sense is the use of collaborative talk. An inquiry-based learning approach is based on an emergent curriculum that evolves out of conversations and discussions arising from the topics and topographies under investigation. Students work together to carry out inquiries on sub-topics they wish to investigate that connect to an overarching theme or topic. The importance of progressive dialogue in the construction of meaning is stressed wherein students contribute to the development of a deeper collective understanding than could have been achieved individually. However, Lyle (2008) states that research has revealed consistent findings: schools and classrooms are full of talk, but little collaborative talk between learners. Lyle further argues that what is most often found in traditional classroom settings is the teacher speaking first and last in what are typical three part exchanges (teacher initiates, student responds, teacher follows up). This genre of classroom discourse is frequently referred to as the IRE/F (Initiation-Response-

Evaluation/Follow-up) sequence and in several studies it has been found to be a fundamental feature of the talk in classrooms, taking up as much as 60% of the teaching/ learning process (Cazden, 1988; Lemke, 1990; Sinclair & Coulthard, 1975). This interaction pattern, known as 'recitation', plays a central part in the direction and control of student learning, allowing little opportunity for collaborative interactions (Cazden & Beck, 2003). During recitations, the teacher's role is often to mediate every student's turn, where students generally raise their hands and wait for the teacher to call on them before speaking (Reninger & Rehark, 2009). As a result, children can become passive, letting a few classmates raise their hands to speak for the whole group (Nystrand, 1997; Worthy & Beck, 1995). Reninger and Rehark (2009) describe this typical classroom discourse structure as resembling the following pattern: t-c-t-c-t-c-t-c-t-c-t-c-t. Unfortunately, efforts to promote more collaborative talk in classrooms have to compete against this dominant form of classroom interaction.

There are many reasons why teachers may not consider collaborative talk as central to the teaching and learning process. Teachers may be influenced by their own experiences as learners and unaccustomed to dialogic talk (discussed in Chapter 2) being conducive to thinking and learning; the noise level and apparent 'lack of discipline' can be construed as evidence of poor classroom management; silent classrooms have been traditionally associated with thinking and productivity; some teachers believe they are under pressure to teach towards the expectations of standardized tests and may use additional classroom time to prepare their students through instruction rather than discussion (e.g., Foundation Skills Assessment, District Assessment of Reading Test);

many teachers lack the skills necessary for planning effective group work; collaborative group work is often viewed as time-consuming and distracting from the 'real' academic work; and, the number of students with attention and behavioural challenges may influence the teacher's ability to monitor and support collaborative interactions (Lyle, 2008).

In addition, some observers of group activity in classrooms have reported that the majority of talk is often off-task, uncooperative and of little educational value (Bennett & Cass, 1989; Galton, Simon, & Croll, 1980). Teachers also report that discussions often begin well, but after several minutes the conversations tend to lose their focus or stray from the content of the text (Reninger & Rehark, 2009). Some researchers suggest that the poor quality of collaborative talk in elementary classroom contexts can be attributed to students not being taught how to effectively talk together (Mercer & Littleton, 2007; Rojas-Drummond & Mercer, 2003; Wegerif, Rojas-Drummond, & Mercer, 1999). Further research evidence supports the assertion that the educational value of any classroom talk between children is dependent upon how well the teacher has structured activities (Galton & Williamson, 1992). Observational research suggests that teachers often group students for the purpose of classroom management and that such grouping does not necessarily result in collaboration (Kutnick & Rogers, 1994). Children in classroom groups may talk with one another, but not in ways that engage them in sustained thinking about the topics under inquiry (Fisher, 1993; Mercer, 1996). In contrast, some studies support the claim that the quality of children's collaborative talk will improve when they have been explicitly taught the guidelines for Exploratory Talk, a dialogic framework of using

language for reasoning (Barnes & Todd, 1995). The utility of effective integration, inquiry-based learning and dialogic discourse in engaging and deepening students' thinking cannot be denied. However, teachers' conceptions of these practices and how they are manifested in their classrooms can be very different.

Inquiry-Based Learning and the British Columbia Curriculum.

The British Columbia English Language Arts Integrated Resource Package (BCIRP), (British Columbia Ministry of Education, 2006) supports and promotes many of the research findings reported in this project. The BCIRP states that the broad aim of the curriculum is "to provide students with opportunities for personal and intellectual growth through speaking, listening, reading, viewing, writing, and representing to make meaning of the world and to prepare them to participate effectively in all aspects of society" (p. 2). Goals for each literacy strand (speaking and listening, reading and viewing, writing and representing) are individually set in terms of a) purposes, b) strategies, c) thinking, and d) features, and a variety of useful teaching suggestions are offered within each category. Although presented separately, the interconnectedness of each of the literacy strands is also emphasized as well as the increased value placed on the development and utility of oral language. The following components, among others, are included as considerations for program delivery: the link between language (literacy) and thinking; the connections among oral language, reading and writing; oral language to support learning; literacy learning across the curriculum; and classroom diversity and differentiated instruction (p. 16). The British Columbia Language Arts Integrated

Resource Package specifically recommends an inquiry-based approach to learning as a viable method of program delivery.

> The inquiry approach is one way to provide students with opportunities to apply a wide range of reading, writing, listening, speaking, and thinking strategies in all curriculum subjects. The foundation of inquiry is the asking of thoughtful questions. Teachers help students pose questions and design tasks for seeking answers to their questions. This builds literacy skills in action and simultaneously deepens a student's thinking process and ability to find solutions. A number of learning outcomes can be addressed in an inquiry task. By designing learning tasks that are not routine but have a degree of open-endedness, uncertainty, and challenge, teachers encourage students to make deep, personal meaning, and to arrive at a variety of solutions with increasing independence. (p. 18)

I suggest that the difficulty teachers encounter in their efforts to use inquiry-based learning is in their struggle to move from theory to practice. While teachers may understand and believe in the concept of inquiry-based learning and attempt to use inquiry as a teaching approach or strategy, Short and Burke (1996) believe that what is needed is a major shift in thinking. What often happens is teachers may make initial changes in their actions in the classroom, but neglect to make the effort to change the fundamental belief system that guides their teaching. Inquiry-based learning is not meant to be one of many ways to provide students with learning opportunities as a suggestion for program delivery, rather it is meant as a stance for teaching and learning across the

curriculum. It is a philosophical attitude or perspective that is invested in the establishment of a community of collaborative inquiry.

Purpose of the Study

> We know now that the way human beings learn has nothing to do with being kept quiet. It has to do with our desire to make sense of our experience, to join with others, to become a part of a community. It has to do with developing our expressive abilities and participating in everything that interests us, with being able to benefit from the insight and experiences of others as we work at making the world take on meaning for ourselves, with living and learning in a place outfitted with opportunities to learn, a place where we can fumble and make mistakes without being scorned or laughed at. And it has to do with being responsible for our own learning. In short, it has to mean something to us. (Peterson, 1992, pp. 2-3)

My goal was to support the development of a community of inquiry within my Grade 6 class in which all students were encouraged to ask questions of personal significance and collaborate with one another in the co-construction of knowledge. Similar studies have been undertaken and described within the research literature (Norton-Meier, Drake, & Tidwell, 2009; Watkins, 2005; Wells & Arauz, 2006). A growing body of research on classroom discourse has focused on students achieving personal understanding of information rather than simply being able to recall it on demand, and on co-construction rather than transmission as the means by which this understanding is achieved (Barnes, 1976; Harste 1994; Mercer, 1995; Nystrand, 1997;

Rojas-Drummond, Velez, & Villagran, 1998; Mercer, Wegerif, & Dawes, 1999; Wells, & Arauz, 2006). In addition, rather than assuming that all classrooms and their members are essentially equivalent and that, therefore, one curriculum fits all, it is recognized that classroom communities are each unique, always situated in particular times and places and made up of diverse participants.

For the purpose of this research study, I evaluated the effectiveness of implementing the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000) to teach the guidelines for exploratory talk. Mercer (2002) defines exploratory talk as discourse where "speakers follow ground rules which help them share knowledge, evaluate evidence, and consider options in a reasonable and equitable way" (p. 150). It was my assumption that the quality of group work would improve and that the students would engage more effectively with collaborative tasks for longer periods of time by following the use of ground rules for exploratory talk. In addition, I hoped that all of the students would participate more in classroom discussions and that these dialogues would include more features of exploratory talk. Specific dialogue descriptors taught within the *Thinking Together* program were used throughout the project as points of reference for consideration of the quality of talk within the evolving classroom setting. It was my intention that in teaching the components of this program, my students would be provided with a framework to engage in meaningful discourse and it would also promote the establishment of a community of inquiry within my classroom. Several contributing factors were considered as potential influences on the outcome of the study, including the

characteristics of the program, the strategies used by me, and the diverse individual student personalities that constituted the classroom composition.

The Thinking Together *Program*

Research supports the effectiveness of the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000) and the transfer of the guidelines for exploratory talk into small group and whole class discussions (Mercer & Sams, 2006; Wegerif, Mercer, Littleton, Rowe, & Dawes, 2004). As is described in Chapter 2, several experimental implementations and evaluations of the *Thinking Together* approach have occurred in the United Kingdom. The first systematically evaluated and published study was part of the doctoral research of Rupert Wegerif, who was supervised by Neil Mercer and worked in collaboration with teacher/researcher, Lynn Dawes (Wegerif, 1996; Wegerif, Mercer, & Dawes 1999). This work served as a pilot study for the larger United Kingdom government funded study called the Talk, Reasoning and Computers (TRAC) project which ran from 1996 to 1998. Since the end of the project several more funded studies such as, Raising Achievement Through Thinking with Language Skills (RATTLS) from 1998 to 2000, Thinking Together in Maths and Science at Key Stage 2 from 2000-2002, and Thinking Together at Key Stage 3 from 2002-2004, have shown similar positive results. In addition to these evaluated projects the *Thinking Together* program has been brought into classrooms through a book of classroom materials.

The *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000) has also been implemented effectively in other cultural settings. As an example, in 1995, the British Council agreed to support a research link between Neil Mercer in the United Kingdom

and Sylvia Rojas-Drummond in Mexico. To support this, the *Thinking Together* program materials were translated into Spanish and adapted to the cultural and educational context.

The *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000) promotes children's awareness and use of talk as a tool for thinking and connects the formulation of thinking skills to the development of communication skills and curriculum learning. Through the program, students are explicitly taught the ground rules for exploratory talk. Each lesson consists of the following three phases: teacher led discussion, small group work, and whole class sharing. The early lessons in the series are designed to raise awareness of different ways of talking together and to develop and teach the pre-conditions of exploratory talk such as listening effectively, giving information explicitly, and cooperating as a group.

The ground rules for exploratory talk taught in each lesson are introduced at the beginning of the lesson and reinforced again at the end. Each lesson begins with explicit modeling by the teacher in the use of the ground rule that the lesson is to focus on and potential language strategies associated with it. The ground rule being taught is clarified at the beginning of each lesson and reviewed at the end of each session. Each lesson includes small group work in mixed-ability and mixed-gender groupings. The teacher visits each of the groups to support its use of the ground rules and language strategies. At the end of the lesson the groups report back to the class and the teacher once again emphasizes the objectives of the lesson. Later lessons encourage the use of all the ground rules in group discussions within specific topics of inquiry**.**

I chose the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000) as an approach to implement and study because it makes the importance of group work explicit for the students (i.e. the students are taught specific ground rules for talk) and has shown to be effective in promoting reasoning and thinking skills. What was of particular interest for my study was not only whether similar improvements in the use of exploratory talk could be achieved, but whether individual students showed improved awareness of the value of group work. The findings of the literature review indicate how the co-construction of knowledge (Wells, 2001) is based on the experience of the individual student within a group context. Therefore, asking the students themselves about that experience seemed like a worthy undertaking.

As a classroom teacher, the relevance of this project was how to use collaborative inquiry to help students learn. Of particular interest was whether this approach to the facilitation of learning would provide a means to integrate the subject areas within the interests of the child, rather than integrating the child into separate and fragmented subject areas. Throughout and after the implementation of the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000), students worked collaboratively on an inquiry-based learning project on the overarching theme of global citizenship. This process of developing a community of inquiry involved the co-construction of improvable objects (Wells, 2001), which is described in Chapter 4 and 5.

Research Questions

The main objective of the study was to implement a program of lessons for teaching language and thinking skills in a Grade 6 classroom. In order to guide my research, I developed the following research questions:

1) Do students use more features of exploratory talk in their classroom discussion groups following the implementation of the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000) and, if so, in what ways?
2) How does the implementation of the *Thinking Together* program effect student participation in discussions?
3) What is the change, if any, in the students' perceived value of participation in group discussions?

Organization of the Project

This chapter provided an introduction to the research project and identified the research questions and rationale for conducting the project. It began with a discussion of curriculum integration and an inquiry-based learning approach to learning. I later outlined exploratory talk as a vehicle for developing a community of inquiry within that approach and provided information about the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000).

The second chapter reviews the literature that informed the study. Included in the review is a discussion of the theoretical foundations underpinning my area of study. Research is also discussed on the following topic areas: inquiry based learning, dialogic teaching, models of inquiry-based learning, community of inquiry, and exploratory talk.

Chapter 3 describes the methodology used to conduct this research. I begin by situating my study under the umbrella of qualitative research and explain how elements fall under the tradition of case study, as well as explain the verification procedures that were undertaken. I then describe the research context, review my research questions, and provide a detailed description of the unit of instruction that was the basis for the study. The sections on data collection and data analysis procedures are followed by a discussion of the limitations and strengths of the study.

In Chapter 4 the data from the questionnaire and the small group discussions are analyzed and grouped in order to examine various aspects of student participation and attitudes. Student comments are also categorized into themes to help further assist in the analysis of the student questionnaire rating changes.

Included in the discussion of the findings of the study in Chapter 5 are my personal reflections and connections to some of the literature reviewed in Chapter 2. I also describe some of the implications the study has for my teaching practice, as well as offer suggestions for further research in this area. The chapter concludes with my closing thoughts on the study and on exploratory talk as a means for building a community of inquiry.

CHAPTER 2

REVIEW OF THE LITERATURE

This chapter describes the theoretical and conceptual frameworks for the project and reviews the research and literature on exploratory talk and inquiry-based learning. It is organized into the following sections: theoretical foundations; inquiry based learning; dialogic teaching; models of inquiry-based learning; community of inquiry; and exploratory talk.

Theoretical Foundations

Earlier in the last century, many theorists considered knowledge to be close to what Plato described as justified true belief. Such positivist beliefs were thought to be objective and independent of individualistic perceptions and the cultural conditions in which they were established. However, over the past half century several significant theories of learning developed in response to this positivist mindset. They have contributed to a new understanding of knowledge and knowledge acquisition and form the theoretical foundations on which this study was based.

Constructivist theory argues that humans generate knowledge and meaning from their own experiences. This theory draws considerably from the work of Jean Piaget (1970) who emphasized the learner's active, exploratory transactions with the environment as a basis for intellectual development. Piaget's conception of learners, actively constructing knowledge based on what they developmentally bring to encounters with new information and experience, has had a significant impact on today's theories of learning and teaching methods in education. Inquiry-based learning offers a constructivist

framework in which students are encouraged to build on their personal experiences in relation to broad themes generated within the classroom environment.

Similar to Piaget, John Dewey also believed that students learn as a result of a combination of forces, both biological and environmental. Dewey was an advocate for student-centered education. His conception of the classroom included a description of the teacher and learner engaged in the learning process as 'co-inquirers' (Wells, 2001). According to Dewey (1938),

> The teacher is not in the school to impose certain ideas or to form certain habits in the child, but is there as a member of the community to select the influences which shall affect the child and to assist him in properly responding to these influences. (p. 9)

In this way, the teacher becomes a partner in the learning process, guiding students to independently discover meaning within each subject area. One of Dewey's most significant contributions to the facilitation of learning is the belief that education must engage with and enlarge personal experience. He argued that content must be presented in a way that allows the student to relate the information to prior experiences and as a result, deepen his/her connection with new information. Dewey argued that in order for students to engage with a topic, it must be of interest to them and it must present problems or inspire questions that will motivate them to explore further. This conception led Dewey to place great emphasis on inquiry, both as the motivation for engaging in, and as the organizing principle for the selection of, learning activities. He believed that the

topics for inquiry should grow out of first-hand experience and be largely determined by the students themselves.

Dewey founded the University of Chicago Laboratory School on the principle that education and learning are social and interactive processes. He believed that the school itself should be a social institution through which social reform can and should take place and a place where education would integrate learning with experience. As an example, the students who attended the Laboratory School learned about food and nutrition from experiencing the complete process of cultivating, cooking and eating food from beginning to end (Duster & Waters, 2006). This approach to teaching illustrates the value he placed on curricular integration and its potential for increasing student engagement. Inquiry-based learning incorporates Dewey's argument that personal meaning for the student is at the center of the learning process.

Social constructivist theory extends constructivist theory into social settings wherein groups construct knowledge for and with one another, collaboratively creating a culture of shared meanings (Palincsar, 1998; Prawat & Floden, 1994). Its origins are largely attributed to the work of Lev Vygotsky who placed strong emphasis on the importance of culture and social interaction in accounting for individual development and suggested that using language to communicate helps in the development of new ways of thinking. Vygotsky (1978) believed that curriculum needed to be re-conceptualized in terms of a negotiated selection of activities that challenge students to go beyond themselves towards goals that have personal significance for them. Vygotsky's theory for conceptualizing the relationship between knowledge, coming to know, and educational

practice has also been highly influential in recent research in learning and development. Vygotsky's ideas about the importance of language and communication are fundamental to the views of inquiry-based learning. Specifically, the value placed upon expressing one's thinking through oral discourse is recognized as deepening not only the speaker's learning but also enhancing the learning of others.

In addition to the two theoretical frameworks of constructivism and social constructivism, this study was also situated within the theoretical framework of dialogic discourse. A contemporary of Vygotsky, Mikhail Bakhtin's work also had a similar emphasis on the social origins of language development and learning. Bakhtin (1981) argued that dialogue is central to educational discourse and learning because of the need to consider alternative frames of reference. In other words, in order for students to develop their knowledge further, the classroom experience should provide opportunities to engage in an exchange of ideas through dialogue. Bakhtin argued that the combined action of listening to others' perspectives and responding to those perspectives is the primary mechanism that provokes new understanding. This view of the importance of dialogue is referred to as dialogic discourse. The term dialogic implies that participants negotiate, construct and express meaning, which ultimately shapes thinking (Wertsch, 1991). As such, some researchers have used this theoretical stance to explain how learning and thinking take place in the context of discussions (e.g., Langer, 1995; Lyle, 2008; Nystrand, 1997; Wegerif, 2006; Wells & Arauz, 2006).

Two of Bakhtin's (1986) ideas are of particular importance for education and both are concerned with the dialogicality of discourse. The first draws attention to the

principle of "responsivity" which means that every utterance is "a link in a very complexly organized chain of other utterances" (p. 69). The second involves the principle of "multi-voicedness" (p. 69) which recognizes that in any utterance more than one 'voice' is speaking. In other words, an individual's dialogue is influenced by his/her previous experiences with others, as well as the anticipated interactions yet to come. Within a classroom context, Bakhtin's recognition of the importance of constructing knowledge through shared discourse emphasizes the necessity for collaborative talk. In other words, students need opportunities to develop communication skills that enable them to participate together in the learning process.

Further developing Bakhtin's work on dialogue, Yuri Lotman (1988) argued that a 'text', spoken as well as written, serves the following two functions: a monologic function (the listener or reader receives information) where the text aims to transmit information; and a dialogic function (the listener or reader elicits a response) where the text serves to generate new meanings. These two language functions can be useful for looking at classroom talk along a continuum, with monologic discourse at one end and dialogic discourse at the other. For instance, transmission style teaching, where the teacher mainly asks closed-ended questions and where predetermined answers are expected and evaluated, is a discourse found at the monologic end of the continuum. At the dialogic end the classroom discourse could involve the teacher asking more open-ended questions, students offering their own questions and ideas, as well as interacting with one another in an effort to clarify, extend, and challenge what has been said.

In Gee's (1989) theory of D/discourses, he proposed that a Discourse can be thought of as an "identity kit which comes complete with the appropriate costume and instructions on how to act, talk, and often write, so as to talk on a particular role that others will recognize" (p. 7). In this sense, a Discourse incorporates, words, acts, values, beliefs, attitudes, and social markers such as gestures, glances, body positions, and clothes. The use and meaning of language within a specific Discourse is referred to as 'discourse'. Gee described how Discourses for students could include a Discourse of their social life among their peers, of academic subject areas and school life, and of shopping, sports, entertainment and family life. He observed that primary Discourses are those that individuals are initially socialized into in their homes. Secondary Discourses are acquired when individuals attend school, clubs, or sports activities. Gee argued that a Discourse cannot be learned by overt instruction. Rather, Discourses are acquired through socialization and enculturation into the social practices of a particular social network. Essentially, a classroom could be described as developing its own Discourse. Gee recognized that while some form of modeling and instructional guidance is important, Discourses are generally acquired through immersion in meaningful practice.

Within any given day, classroom teachers involve their students in a wide range of discourse genres depending on a variety of factors. Gordon Wells (2001) argues that the most influential factor that determines the type of discourse selected is the goal of the activity. For example, the introduction of a concept could take the form of a lecture (monologic), the presentation of the results of an experiment could take the form of a collaborative discussion (dialogic), and a review of previously learned material could be

a question and answer (monologic) discourse. Wells believes that while there are occasions where monologic discourse is warranted (i.e. safety, behavior management), it is the frequency of dialogic interaction that provides the best opportunities for students to learn language, deepen thinking and generate new meanings. As a result, students' opportunities for learning and knowing are crucially dependent on the nature of the activities in which they engage and on the functions that language performs in these activities. When individuals are given opportunities to explore their own interests and share their experiences with others, as in an inquiry-based learning environment, learning is enhanced for the collective whole.

Finally, this proposed project is also situated within the framework of Howard Gardner's (2006) Theory of Multiple Intelligences. Gardner's theory argues that individuals have a variety of intelligences and strengths and these inform the way they learn. Traditional education focuses on linguistic, logical-mathematical, and intrapersonal intelligences, but there are five other intelligences that Gardner believes should be incorporated in order for children to perform better (musical, spatial, bodily-kinesthetic, naturalistic, and interpersonal). Each learner's intelligence profile consists of a combination of strengths and weaknesses in these areas that interact with one another. According to Gardner (1993), although students tend to be stronger in some intelligence areas than in others, it is important for them to be exposed to all types of intelligences. The multiple intelligences approach suggests teachers should create rich experiences in which students with different intelligence profiles can learn in their own ways and from each other. Moran, Kornhaber, and Gardner (2006) propose designing engaging group

learning experiences that offer multiple points of entry rather than the more traditional creation of several different individualized lesson plans. Rich learning experiences, within community based inquiry, can be used to assist students to learn along several dimensions at once – socially, spatially, kinesthetically, etc. In addition, by structuring lessons to encourage collaboration, students can learn more by accessing each other's strengths.

Literature Review

The literature review moves from a general description of a desired learning environment towards specific strategies and programs that support its development. The following sections review the research and literature on inquiry-based learning, dialogic teaching, models of inquiry-based learning, communities of inquiry, and exploratory talk.

Inquiry-Based Learning

Inquiry-based learning is an approach based on Dewey's philosophy that education begins with the curiosity of the learner. The focus is on students achieving personal understanding of information rather than simply being able to recall it on demand, and to co-construction rather than transmission as the means by which understanding is achieved. As described previously, it is a learning process organized through questions generated from the interests, curiosities, perspectives and experiences of the learner (Harste, 2003; Short, Harste, with Burke, 1996; Wells, 2001). Research on inquiry-based learning supports its effectiveness as an approach to teaching and learning, particularly when it is considered as a stance toward teaching and learning that crosses the curriculum and not as a specific method or activity confined to a particular project or

subject (Avery, 1993; Calkins, 1994; Graves, 1983; Harste, 2003; Harste, Short, & Burke, 1988; Peck, 2010; Wells, 2001; Wells & Aruaz, 2006).

This approach is based on an emergent curriculum that evolves out of conversations and discussions arising from topics of interest. Within inquiry-based learning, teachers trust themselves to bring topics forward that are rich and large enough to provide interest and engagement for all learners, and students are trusted to be interested in things worth knowing about. The types of questions asked, whether they be formed by the student, teacher or text, motivate genuine inquiry and begin with the students' lived experiences. Students work together to carry out inquiries on sub-topics they wish to investigate that connect to an overarching theme or topic. This approach provides the freedom for students to pursue their own individual interests and bring back their discoveries to the larger classroom group. The importance of progressive dialogue in the construction of meaning is stressed wherein students contribute to the development of a deeper collective understanding than could have been achieved individually.

Wells (2001) believes that a key feature in making this approach meaningful for students is the construction of a tangible artifact or 'improvable object' that serves as a record of what has been collectively explored. The artifact can be a material object (such as a collage, written report), an explanatory demonstration (PowerPoint presentation or speech to the class), or a theoretical formulation. When the student's interests and questions are brought together with the construction of a tangible or improvable object (topic goal, i.e. questions directing his/her inquiry and action goal, i.e. building a model) this process can provoke deeper understanding.

Within this approach to learning, the teacher's role is viewed as co-inquirer. This shift in perspective positions the teacher as a learning participant rather than a knowledge dispenser. In order to promote a community of inquiry, equal and respectful inclusion of all classroom members is valued, as much as the focus on intellectual development. As a result, the objective of this learning experience not only moves beyond specific academic tasks but also towards the development of necessary and meaningful life skills. In this way, Everest, Jardine, and LaGrange (2003) believe, "integration and wholeness have more to do with the *way* one knows, the *way* one is, the *way* one hopes children will become and how we and they will carry ourselves" (p. 205).

Short and Burke (1996) describe inquiry as a process that encompasses the following three knowledge sources:

1) personal and social knowing - the knowledge that learners bring from their personal experience
2) knowledge systems - shared systems that humans use to structure knowledge to make sense of the world, and
3) sign systems - alternative ways of creating and communicating meaning, such as language, mathematics, music, art, movement, and drama (Eisner, 1982; Leland & Harste, 1994).

Inquiry involves having all sign systems available at any point in time so that students can use the ones that best meet their purposes (Berghoff, 1993; Clyde, 1994).

Short and Burke (1996) argue that instead of using a topic or theme as a reason for teaching particular subjects, knowledge systems and sign systems are thought of as

tools for exploring and researching students' own questions. In this way, the major focus is inquiry itself, not the specific content areas. When students inquire through the perspectives of various knowledge systems and sign systems, their questions steer the curriculum (Eisner, 1994; Gardner, 1983; Harste, 1994).

Wells (2001) investigated inquiry-based approaches to curriculum instruction through the use of dialogic discourse genres. His collaborative action research project DICEP (1991-1998) (Developing Inquiring Communities in Education Project), conducted at the University of Toronto, investigated the relationship between inquiry and dialogue. Over the seven year duration of the project, 12 teachers from both elementary and middle school settings were involved in the DICEP group over varying intervals of time. Central to the success of each inquiry was the teachers' commitment to plan overarching themes that were not only connected to the mandated curriculum, but also opened up possibilities for students to select their own topics or questions for inquiry. In addition, building a classroom community in which inquiry could take place was key for the projects' successes. This community of inquiry involved students frequently working together in groups on the same or related investigations, and participating in whole class meetings that were a regular feature for review and reflection on what was planned, in progress, or had been achieved. All teachers involved in the project submitted video-recorded data of whole class and small group interactions which were later transcribed and included in the project database. The discourse data were used to illustrate ways in which students were becoming more engaged in their learning and more adept at carrying out group inquiries in the process. A quantitative comparison between observations made

early and late in the teachers' involvement in the project showed a number of significant changes in the characteristics of teacher-whole class discourse, with a shift toward a more dialogic mode of interaction. The DICEP group found that for true dialogue to occur, students must be interested in the topic, have personal beliefs and opinions which they care enough to talk about, and believe that the group conclusion will take all contributions into account.

Another more recent study that supports similar findings is Peck's (2010) longitudinal ethnographic and phenomenological study of an inquiry-based learning project. His study documented the process of one elementary school's growth from marginal student achievement to one of the highest achieving schools in its school district. The school is located in one of the top 15 highest poverty cities in the United States and has an approximate population of 300, with two classes at each grade level. In 2001, the school chose the Expeditionary Learning Schools (ELS) design to instigate reform. In ELS, instruction is structured through curricular initiatives that include time for exploration and practice, development of quality writing, fieldwork where students leave the classroom to explore community resources, and authentic products that demonstrate student learning and community service. Data were collected over a six year period and included phenomenological interviews, classroom observations, interactions with parents and community members, artifacts and field notes from participants, and attendance at school events. Peck identified the following three components as being central to the school's reformation: inquiry-based learning, assessment-based literacy instruction, and curricular alignment.

The research by Wells and Peck is relevant for the purpose of my project because their work emphasized the importance of establishing a whole classroom environment that supports the individual interests of each student.

Dialogic Teaching

My study was influenced by socio-cultural theory as well as by recent research in dialogic approaches to learning and teaching in classroom settings (Alexander, 2004, 2008; Lyle, 2008; Skidmore, 2006).

> Dialogic teaching...explores the learner's thought processes. It treats students' contributions, and especially their answers to teachers' questions, as stages in an ongoing cognitive quest rather than as terminal points. And it nurtures the student's engagement, confidence, independence and responsibility. (Alexander 2006, p. 35)

A dialogic approach to teaching proposes that intellectual development is enhanced through discourse with others (Bakhtin, 1981: Rogoff, 1990; Vygotsky, 1978). Educational experiences involve interactions between and among individuals and therefore reflect the cultural values and social practices of these individuals. Education and cognitive development are seen as cultural processes where knowledge is not only possessed individually but shared among members of communities. Within this social constructivist perspective, research has supported the view that knowledge is co-constructed when people engage in activities together and meanings are negotiated through talk (Cole, Engestrom, & Vasquez, 1997; Rogoff, Turkanis, & Bartlett, 2001; Wells, 1986, 1999; Wertsch, 1985, 1991).

Alexander (2001, 2004, 2006) has conducted extensive research over the past decade in the area of structuring curriculum to encourage dialogic discourse genres. Like Wells, Alexander relates his work on dialogic talk and dialogic teaching to an inquiry-based learning approach that influences all learning across the curriculum. Alexander uses the term dialogic teaching to describe what happens when teachers and students work together to build on their own and each other's knowledge and ideas to develop sound thinking. He describes dialogic interactions as occurring when students ask questions, state points of view and comment on ideas emerging from lessons. Teachers take students' ideas into account when developing the topics/topographies for lessons and use talk to provide a "cumulative, continuing, contextual frame to enable students' involvement with the new knowledge that they are creating and encountering" (Lyle, 2008, p. 230).

Alexander's (2001) study of classroom practice in England, France, India, Russia, and the United States identified very different culturally determined opportunities for structured talk and the associated deep learning. The data collected included videotapes, still photographs, lesson transcripts, pre- and post-lesson interviews with teachers, and lesson artifacts (i.e. teachers' lesson plans, lesson texts/worksheets, students' written work). His findings suggested that if teachers are to move classroom interactions from monologic to dialogic, they need to develop specific strategy repertoires. The following set of guidelines to effectively mediate dialogic talk in classrooms is adapted from Alexander's (2006) list of over 60 potential strategies:

- use structured questions to guide and limit questions which cue a specific response;

- prompt and narrow choice to help students focus on concepts;
- ensure a safe and non-threatening learning environment;
- help students to look for contradictions between what is observed and what was anticipated;
- record observations on the blackboard (students are more likely to challenge a written statement than the spoken word);
- redirect off-topic or displaced talk toward "how" and "what if" questions;
- direct students' discussion towards each other rather than the teacher;
- arrange student seating to promote interaction;
- model question-asking by prompting students to explain their observations and their perceptions (i.e. "Why do you think that happened?" "I wonder what would happen if?"); and,
- model techniques for organizing students' comments (i.e. categorizing similar responses, eliminating redundancy).

In addition, research supports the belief that dialogic classroom environments promote more participation, where students who normally do not speak in class gain the necessary confidence to make contributions (Alexander, 2006; Wells & Arauz, 2006). Dialogic teaching is valued as a process that can promote inclusion of all pupils and has much to contribute to the establishment of communities of learners. The following essential features of a dialogic classroom are identified by Alexander (2006):

- Collective: teachers and students address the learning task together;

- Reciprocal: teachers and students listen to each other to share ideas and consider alternative viewpoints;
- Supportive: students articulate their ideas freely without fear of embarrassment over 'wrong' answers and support each other to reach common understandings;
- Cumulative: teachers and students build on their own and each other's ideas to chain them into coherent lines of thinking and inquiry; and
- Purposeful: teachers plan and facilitate dialogic teaching with educational goals in mind. (cited in Mercer & Hodgkinson, 2008, p. 105)

Models of Inquiry-Based Learning Approaches

The strategies described by Alexander (2006) are particularly helpful for teachers wishing to create a more inclusive environment for learning, as is a closer look at specific educational programs developed from a social constructivist perspective.

The Reggio Emilia approach is a program philosophy focused on preschool and primary education. With this approach, learning is not based on age or biological stage, but on the child's experience with and exposure to language, literacy, art, and other sign systems (Harste, Woodward & Burke, 1984). It is guided by the strong belief that children learn through interaction with others within friendly and safe learning environments. Projects begin with teachers observing and questioning children about a topic of interest. Based on children's responses, teachers introduce materials, questions, and opportunities that provoke further exploration of the topic. As children proceed in an investigation, they work together toward the resolution of problems that arise. The result can be an atmosphere of community and collaboration that is developmentally

appropriate for adults and children alike. Research shows that children as young as infants and toddlers actively inquire throughout their daily lives and are able to understand complex thought, even prior to school (Edwards, Gandini, & Forman, 1998; Harste, Woodward, & Burke, 1984; Kim & Darling, 2009; Weaver, 1990;).

The Reggio Emilia approach is based on the following principles: an emergent curriculum; project work; representational development; collaboration; teachers and researchers as learners and resource guides; documentation that involves keeping a record of children's work in progress; and an environment that is considered the "third teacher." Within this approach, children, teachers and parents are interactive and work together to build a community of inquiry between adults and children (Edwards, Gandini, & Forman, 1998, p. 3).

Kim and Darling (2009) studied the Reggio Emilia method of teaching and explored how 4- year-old children constructed knowledge using art as a learning and knowledge representation tool. The study was conducted in a Reggio-focused child care classroom located in the lower mainland of British Columbia, Canada. Qualitative case study methodology was used to investigate how social interaction plays a role in young children's learning processes. The study focused on an in-depth study of six children's activities during a "Shade of Pink" project where the children faced conflict due to different opinions while talking about the details of Monet's painting, but also worked together to build common understandings. Through small group work, Kim and Landry found that negotiations and cooperative problem solving played a primary role in the children's learning processes.

The Mantle of the Expert is another approach specifically developed from a social constructivist perspective. It is an imaginative-inquiry approach to learning created by Dorothy Heathcote in the 1980's that uses inquiry and dramatic imagination to create authentic contexts for learning. In role, the students assume the specific point of view of an expert in the field of their inquiry (i.e. scientists in a laboratory, archaeologists excavating a tomb, vendors running a store, or a rescue team at the scene of a disaster) as they work through specific tasks and activities. This approach offers opportunities to explore the curriculum by creating meaningful, cross-curricular contexts for collaborative learning. Through their inquiry, students work together to solve problems, meet challenges and assume responsibilities that true scientists or archaeologists would come across in the real world.

The Galileo Educational Network in Calgary also supports an inquiry-based learning approach, one very similar to the approach outlined by Gordon Wells. Inquiry is viewed as a study into a worthy question, issue, problem or idea and is the type of work that those within the actual disciplines would undertake to build knowledge. The unique contribution of the Galileo Network is the emphasis that is placed on the use of digital technologies. It is the Galileo Educational Network's belief that technology can support integrated, inquiry-based learning through the way it can engage students in exploring, thinking, reading, writing, researching, inventing, problem-solving, and experiencing the world. The following four areas developed by Bruce and Levin (1997) are highlighted as a focus for development within given projects: media for inquiry (such as data modeling, spreadsheets, online databases, online observatories and microscopes, and hypertext);

media for communication (such as word processing, e-mail, graphics software, simulations, and tutorials), media for construction (such as robotics, computer-aided design, and control systems), and media for expression (such as interactive video, animation software, and music composition) and digital technologies. It is the opinion of the researchers at the Galileo Educational Network that classroom teachers need to become better informed and skilled in the use of new technologies in order to offer their students meaningful pathways towards personal exploration of interests.

Although each of the described approaches appears to favour a particular curricular focus (Reggio Emilia - art, Mantle of the Expert - drama, Galileo Educational Network - technology), all three share the following significant commonalities: children's lived experience is the start; children's ability to pose questions worth exploring is trusted; teachers are co-inquirers who learn alongside their students; collaborative talk is what leads to the co-construction of shared knowledge; and the 'improvable object' is the tangible representation of the learning process experience.

Community of Inquiry

Inquiry-based learning programs and approaches have proved to be helpful in promoting an inclusive learning environment because they support meaningful learning for each student. The reality of a classroom setting is that each student is also situated within a social environment inclusive of the teacher and classmates. Not only is each student an unique individual, each and every classroom is made up of a different combination of personalities and variables such as, gender roles, status, individual

characteristics, and friendships that act to create a unique community. Many factors can affect students' level of participation in discussion-based group work.

In Evans's (1996) study of a 15-member literature discussion group in a Grade 5 classroom, she found that factors such as gender, cultural background, and status played a role in whose ideas were expressed. Evans found that status hierarchies apparent during teacher-led classroom discussions were replicated by the students during their small group discussions with the result that these discussions did not offer conversations in which multiple interpretations were offered and respected. Higher functioning and higher status students were found to be more engaged and involved in the conversations and seemed to learn more than their counterparts. The findings of this study reveal how individual characteristics such as confidence and ability affect the dynamics and individual participation patterns in small group discussions. In another study by Evans (2002), she investigated fifth-grade students' perceptions of their experiences of participating in peer-led literature discussion groups. Data were collected over the course of one school year and involved observing peer-led literature discussions and leading students in reflective debriefing of their discussion group experience. The findings of this study revealed that the students themselves described group composition as a factor that influenced their level of participation. In particular, the students identified strong and dominant personalities ("bossy") as well as the gender of group members as significant influences on their level of comfort.

While teachers need to be sensitive to the dynamics of individual personalities in order to support the comfort level of participants, group work offers potential benefits for

all students. A safe and inclusive classroom environment is foundational for conversations to enhance learning. Watkins (2005) suggests that dialogic practices underpin the establishment of a community of inquirers. He positions inquiry at the core of a community of learners and identifies it as the impetus that captures students' interest, promotes questioning, and fosters engagement. He argues that the concept of dialogic approaches to classroom practice require teachers to engage with their students as co-inquirers by planning lessons that generate authentic dialogue. Watkins developed a co-construction model for building a community of inquiry that includes the following key components:

- Students operate together to improve knowledge
- Students help each other to learn through dialogue
- Learning goals emerge and develop during inquiry
- Students create products for each other and for others
- Students review how the community best supports learning
- Students show understanding of how group processes promote their learning
- Classroom social structures promote interdependence
- Students display communal responsibility including in the governance of the classroom and
- Assessment tasks are community products that demonstrate increased complexity and a rich web of ideas. (p. 173)

Within this model, Watkins argues that collaborative talk is the device that encourages critical, creative and caring thinking. Other researchers have also supported Watkins's

concept of co-construction within the classroom and implemented his framework within their studies (Haworth, 1999; Lyle, 1998; Parsons, 2009; Skidmore, 2000).

Parsons's (2009) study investigated the impact of data collection, group discussion, and positioning as researcher on student empowerment. The study involved 10 Grade 4 students who developed a community of inquiry for the purpose of reflecting about reading. The researcher noted the importance of group discussions and discussed stance, interpretive authority, control of turn taking, topic selection, and focus. Parsons found that in discussions, the students repeated each other's thoughts, built upon and contested ideas, and moved toward consensus. Parsons also found that disagreement and respect for differing viewpoints were essential in her students' construction of knowledge.

An example of a program designed to assist teachers in the utilization of conversations to support learning is the Philosophy for Children program developed by Matthew Lipman (1980). It provides good practice in dialogic teaching and learning and promotes thinking skills by building on students' natural curiosity about ideas that are important to them. The guiding ideal of Philosophy for Children is building a community of inquiry where students work together to generate and answer their own questions about philosophical issues. It is an approach that sees development and understanding best achieved in dialogue between peers, facilitated by their teacher. Grounded in Socratic tradition, Philosophy for Children views the teacher's role as one of challenging students to think for themselves. Success with this program therefore depends upon the

quality of teacher questioning, which seeks to promote higher order contributions from learners (e.g., exposition, explanation, justification, speculation and hypothesizing).

Research findings support the claim that Philosophy for Children has the potential to increase cognitive skills, raise the quality of student discourse, and provide a more inclusive approach to classroom practice (Lipman, 2003; Trickey & Topping, 2004, 2006; Topping & Trickey, 2007). Within this approach students learn to respect, listen to and understand a diverse range of views. The program establishes guidelines whereby students speak and listen to each other and space is created for all voices to speak and be heard. Differences are valued and alternative interpretations welcomed. A typical session consists of a group reading of a source text, followed by the gathering of students' questions that have arisen out of the reading which then form the agenda for discussion. Examples of potential topics for inquiry include truth, reality, knowledge, evidence, freedom, justice, goodness, rights, mind, identity, love, friendship, rules, responsibility, action, logic, language, fairness, reason, existence, possibility, beauty, meaning, self, time, God, infinity, human nature and thought. The philosophy-based lessons encourage a community approach to inquiry in the classroom, with children sharing their views on Socratic questions posed by the teacher. Discussions are more than a process of exchanging opinions as they are aimed at the construction of the best collective answer to the questions raised. Answers are not provided or validated by the teacher but rather the class has the responsibility for both constructing and evaluating the range of possible responses to a question. The atmosphere of care and safety generated in a good

community of inquiry provides a space for all students to try out ideas with the understanding that they will be listened to.

In 2004, Trickey and Topping carried out a systematic review of research on the Philosophy for Children program. All the selected studies showed some positive outcomes in students' development of cognitive ability, critical reasoning skills and dialogue in the classroom, and emotional and social development. Trickey and Topping (2006) also carried out their own research on the socio-emotional effects of collaborative philosophical inquiry. They studied 11- year-old children in five experimental and three control elementary school classrooms in Clackmannanshire, Scotland. In a pre- and post-controlled design, intervention students used collaborative inquiry (Philosophy for Children) one hour each week over a seven month inter-test period. Control students followed a regular curriculum. On a test of self-esteem the researchers found significant evidence of reduction in dependency and anxiety and of greater self-confidence among the intervention students and few gains with the control group. Topping and Trickey (2007) also conducted a study investigating the long term effects of collaborative philosophical inquiry two years after the program ended. This group of students did not receive any further philosophical inquiry for the following two years. Topping and Trickey found that of the 71 philosophy-taught children, the original gains had been maintained. By contrast, the 44 control children showed a trend towards deterioration in their lower scores from two years earlier. The research by Trickey and Topping is relevant to my project because they demonstrated the many individual benefits for children who collaborate together through the encouragement of conversational guidelines.

Exploratory Talk

The use of talk within classrooms between students and teachers has been the focus of research studies. Douglas Barnes (1976) was one of the first researchers to use detailed classroom observation and the transcribed talk of children engaged in classroom activities to explore the role of talk in learning. Through his research, he identified two types of classroom discourse: exploratory talk and presentational talk. Exploratory talk is described as being hesitant and incomplete because it offers the speaker an opportunity to organize his or her own thoughts by trying out new ideas as well as receiving feedback from others. With presentational talk, the speaker's attention is primarily focused on adjusting the language, content and manner to the needs of the audience. Presentational talk frequently occurs in response to teachers' questions when they are checking students' understanding or when giving a speech to a large or unfamiliar audience. Barnes found that presentational talk was dominant in most classrooms even though this type of talk does not provide students with opportunities to generate new thinking. He stated that exploratory talk is important for learning because of its potential to promote the use of language for reasoning.

Although exploratory talk is defined in many ways by different researchers, it is generally agreed that a central premise is the sharing and co-construction of knowledge in classroom discourse. Exploratory talk, according to Mercer (1995), is where individuals engage "critically but constructively with each other's ideas" making claims and proposals that can be challenged and giving reasons for their decisions (p. 104). In a research project in the early 1990's, Mercer collected more than 50 hours of video

recordings of children engaging in group discussions to solve problems around computers. He analyzed this collected data and characterized students' conversations into the following three types of classroom talk or what Mercer terms, 'social modes of thinking': disputational talk, cumulative talk and exploratory talk. Disputational talk is characterized by disagreement and individualized decision making which often consists of short exchanges with assertions and counter-assertions. Cumulative talk occurs when speakers build positively on what others say with little critical challenge. This type of discourse is characterized by repetitions, confirmations and elaborations. Exploratory talk is when speakers engage critically but constructively with each other's ideas, and suggestions are offered for joint consideration. As with dialogic talk, individuals work together toward the construction of the best collective response. Wegerif, Mercer and Dawes (1999) believe that of the three types of talk, exploratory talk is the closest to reasoning as a social practice.

For the purpose of my investigation, I used exploratory talk to refer to the discourse of classroom discussions and Exploratory Talk (capitalized) to describe a specific framework for co-reasoning that encourages students to follow ground rules that help them to build and share knowledge, evaluate evidence, and consider options in a reasonable and equitable way. Mercer (1995) developed the following set of ground rules for exploratory talk based on a survey of literature on effective collaborative learning (see review in Mercer, 1995, pp. 90-95):

1. State proposals.

2. Evaluate proposals.

3. Challenge ideas.

4. Consider each other's views.

5. Provide reasons to back up claims and opinions.

6. Give alternative opinions and ideas.

7. If appropriate, have participants ask each other for reasons.

8. Seek agreement.

The study by Reninger and Rehark (2009) of fourth-grade students' discussions found that exploratory talk became a means to promote and sustain children's discussions of texts. Within this study, the students' small group discussions were analyzed by a discourse-coding scheme created by Soter, Wilkinson, Murphy, Rudge, and Reninger (2008). The students developed the following exploratory talk guidelines to promote dialogic identities:

1. Share your thinking (use words such as "I think," "because," "maybe," "what if").

2. Back-up your opinions with reasons and/or evidence from the text.

3. Feel free to challenge ideas or to disagree with an idea.

4. Change your mind, if new ideas change your thinking.

5. Ask each other questions.

6. Listen to each other so you can build on (each other's thinking).

7. Look at the people in the group.

8. "Jump in" the conversation, if there is space.

9. Invite others into the conversation.

Reninger and Rehark found that the guidelines helped the students see themselves as active participants in discussions who ask questions, give reasons, challenge and build on each other's ideas. They also found that when children make inquiries about text using dialogic discourse, they are more likely to engage in the process of reflection on the content of the material.

Mercer and Littleton (2007) believe that by encouraging exploratory talk in group activities, individuals develop a particular method of social thinking or interthinking. They describe students as developing a structured framework with particular conversational rules, enabling the sharing of individual knowledge that is openly critiqued and questioned with alternative views in a reasonable and equitable way.

A review of the research literature supports the effectiveness of the use of the framework of Exploratory Talk in elementary school settings in encouraging dialogic discourse and in promoting group and individual reasoning. For example, Mercer, Wegerif, and Dawes (1999) and Wegerif, Mercer, and Dawes (1999) found that exploratory talk could be enhanced in British elementary school children through the explicit teaching of an Exploratory Talk framework. The purpose of these studies was to evaluate the effectiveness of the teaching program TRAC (Talk, Reasoning, and Computers), a program used for scaffolding children's effective use of language as a tool for reasoning and collaborative activity. Studies were conducted with control and target groups in Grade 5 classrooms in three British middle schools. Each target class was matched with a control class of the same age. The control classes had no part in the intervention program but were observed and tested in the same ways as the target classes.

In the study, children were taught to use an Exploratory Talk framework and the effects of this experience, on their joint activity and their ability to solve the problems, were assessed through the Raven's psychological test of non-verbal reasoning (in groups and as individuals). Qualitative and quantitative analyses of discourse showed a marked shift in the children's use of language in accord with the aims of the teaching program. This research was later replicated in other age groups and subject areas in Britain and in Mexico. The studies demonstrated the positive influence of exploratory talk on children's understanding of science concepts and mathematical reasoning, understanding and problem solving (Mercer & Sams, 2006; Mercer, Dawes, Wegerif, & Sams, 2004; Rojas-Drummond & Mercer, 2003). Subsequent studies using computers have also shown how specially designed software was effective in integrating reasoning through talk with curriculum learning (Mercer, Fernandez, Dawes, Wegerif, & Sams, 2003; Rojas-Drummond, Perez, Velez Gomez, & Mendoza, 2002). All of these studies followed a similar format of teaching an Exploratory Talk framework and comparing target and control classrooms.

In 2004, Wegerif, Mercer, Littleton, Rowe and Dawes explored changes in the way that groups talk and reason together and the impact of collective reasoning on individual development in Grade 2 classrooms. This project provided similar evidence to the previous studies. However, its most significant contribution was to show how the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000) can significantly improve the inclusion of potentially marginalized children into the mainstream of classroom activity.

An additional important aspect of Mercer's (1995) research is his description of the teacher as a discourse guide. He views the teacher as someone who scaffolds the development of children's effective use of language for reasoning through instruction, modeling and the strategic design and provision of group-based activities for children (Rojas-Drummond & Mercer, 2004).

The research in Mexico by Rojas-Drummond et al. (2003; Wegerif, Mercer, & Rojas-Drummond, 1999) also confirmed that exploratory talk can be very effective in promoting children's capacity for collaboration, for group and individual reasoning and problem solving. Wegerif, Linares, Perez, and Rojas-Drummond (2005) compared the implementation of the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000) in Mexico to the implementation of the program in the United Kingdom. The researchers concluded that despite the fact that the relationship between teachers' practice and the approach was much closer in the United Kingdom than in Mexico, the program appeared to have very similar positive effects on individual reasoning and on the capacity of children to collaborate effectively in groups. The teachers involved in the Mexican study were found to be more comfortable with a transmission style instruction and therefore relied on the researchers themselves to implement the program. The comparison of the data gathered during the research conducted in the United Kingdom and Mexico led to the following conclusions: both quantitative results and the results of the discourse analysis were remarkably similar despite the differences in social and cultural context; and the relationship between teachers' practices and the proposed intervention was closer in the United Kingdom than in Mexico which impacted on the implementation and the

sustainability of the project. Further, some data indicated that the program may have empowered girls in mixed-gender group work in Mexico in a way that was not noticed in the studies in the United Kingdom. The study has promoted further interest in exploring how cultural and gender differences effect the use of exploratory talk in the classroom.

Webb (2006) conducted a six month study of exploratory talk in 24, Grade 7, second-language science classrooms in South Africa. The research was carried out using two complementary studies (six months for the first 12 classes, and six months for the second 12 classes). Both quantitative testing and qualitative classroom observations and interviews were used to generate and analyze the data generated. The findings revealed a clear and significant improvement in the problem solving and reasoning skills of students who participated in the study over the control group students.

Finally, Wheeldon (2006) conducted a study on how the explicit teaching and modeling of exploratory talk in Mathematics class would improve the quality of Grade 1 students' mathematical talk. By teaching the students specific guidelines for discussion, Wheeldon found throughout the study that the students increased their use of exploratory talk and decreased their use of disputational talk.

Chapter Summary

As is evident by the literature review, a growing amount of research exists on the benefits of exploratory talk. Overall researchers have found that providing students with a framework to engage in meaningful discourse can improve group and individual reasoning, cognition and problem solving, and promote the establishment of a community of inquiry that is inclusive of all students within a classroom setting.

Chapter 3 describes my investigation into the areas of exploratory talk and inquiry-based learning and includes the following sections: the methodology for the research project, the verification procedures, the setting of the study, the unit of study that was the basis for my project, the data collection, and the data analysis procedures. Finally, I discuss the limitations and strengths of the study.

CHAPTER 3

METHODOLOGY

In this chapter I position my study within qualitative research, review my research questions, and describe the research context and the unit of instruction that was delivered during the research study. I explain how data were collected during and then analyzed after the unit of instruction, as well as identify the strengths and limitations of the study.

Research Methods

As described previously, my study involved the implementation and evaluation of the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000) for developing students' use of talk as a tool for reasoning and carrying out collaborative interactions. Specifically, this investigation explored how teaching an Exploratory Talk framework would effect student participation in group discussions as well as students' perceived value of talk in group discussions.

In order to answer the questions posed for this study, I used investigative procedures consistent with qualitative research. The main goal of qualitative studies involves the researcher developing an understanding of why people act the way they do (Creswell, 1998). Patton (1990) argues that there are no "absolute characteristics of qualitative inquiry, but rather strategic ideals that provide a direction and a framework for developing specific designs and concrete data collection tactics" (p. 59). According to Eisner (1998), several features constitute a qualitative research study. First, qualitative research tends to be field focused and uses the natural setting as a source of data. The researcher attempts to observe, describe, and interpret settings as they are. Second, the

researcher is viewed as a human instrument of data collection. “The ‘self’ is the instrument that engages the situation and makes sense of it” (p. 34). Third, qualitative research has an interpretive quality where the researcher attempts to make sense of or interpret phenomena in terms of the meanings people bring to them. Fourth, in qualitative studies the use of expressive language and the “presence of voice in the text” is evident (p. 36). Fifth, qualitative researchers pay attention to early and on-going inductive data analysis. Sixth, and finally, qualitative research pertains to specific criteria for trustworthiness used to judge the research success.

Within this overarching research paradigm, Creswell (1998) identifies the following five main types of qualitative research: biography, grounded theory, phenomenology, ethnography and case study. There are also many forms of qualitative data collection, which include interview, observation, written documents, photographs, audio tapes and videotapes. The particular design of a qualitative study depends on the purpose of the inquiry, and the information that will be most useful and have the most credibility (Patton, 1990).

My investigation was qualitative in nature. The setting of the study was naturalistic because it took place in the students’ school and in the students’ classroom. My classroom-based research was descriptive in that a) it focused on current events in a natural setting, b) its purpose was to describe and interpret, c) the data were collected primarily through observation and analysis, and d) it relied on student-produced documents (i.e. questionnaire responses, journal reflections) and verbal data (discussion group discourse).

My research was a case study in one classroom community that was unique, situated in a particular time and place and made up of diverse participants. Cresswell (1998) defines case study as "an exploration of a 'bounded system' or a case over time through detailed, in-depth data collection involving multiple sources of information rich in context" (p. 61). Under the more generalized category of case study, Stake (1995) identifies the following three types of case studies: intrinsic, instrumental, and collective. The intrinsic case study is undertaken to gain a deeper understanding of the case. The instrumental case study is used to provide insight into an issue. The collective case study is used to provide a general understanding of a phenomenon through inquiry into a number of cases. This investigation was an instrumental case study as it explored how teaching an Exploratory Talk framework effected students' participation as well as their perceived value of talk in group discussions.

Trustworthiness

As the teacher/researcher involved in the development and implementation of this study, I realized that my personal and professional views might bias the research. My belief was that through teaching a framework for Exploratory Talk, the quality of group work would improve and students would engage more effectively with collaborative tasks for longer periods of time. In addition, I hoped that all of the students would participate more in classroom discussions and that these dialogues would include more features of exploratory talk.

In addition to acknowledging my personal and professional biases, I also used several verification procedures recognized by qualitative researchers to show that my

study was trustworthy (Anfara, Brown, & Mangione, 2002). One of the verification procedures I used for this study was triangulation (Cresswell, 1998). During the study, a variety of data (including pre- and post-program questionnaire ratings, written responses, audio recordings, and small group discussion transcripts) from my students were collected. I also used different methods of analysis (quantitative and qualitative) for the data that demonstrated triangulation (Greene, Kreider, & Mayer, 2005). A second verification procedure was peer debriefing (Anfara, Brown, & Mangione, 2002). While respecting the confidentiality and identity of the participants, I discussed aspects of the project with a colleague at the school who recently completed her graduate degree at the University of Victoria.

The Research Context

As previously stated, the purpose of this research project was to examine the effectiveness of the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000) to develop talking skills and also to explore its impact on the attitudes of the student participants towards group work. My research aimed to answer the following three questions:

1) Do students use more features of exploratory talk in their classroom discussion groups following the implementation of the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000) and, if so, in what ways?
2) How does the implementation of the *Thinking Together* program effect student participation in discussions?

3) What is the change, if any, in the students' perceived value of participation in group discussions?

The naturalistic setting for this study was my Grade 6 class in a public fine arts elementary school in a town located on Southern Vancouver Island. At the time of the study, the school population was approximately 225 students from Kindergarten to Grade 6. Most students at the school are from white, English-speaking homes, although a variety of family types including same sex, blended, and single parent families, and a range of socioeconomic statuses are represented within the school community. As this school offers a specific fine arts program, many families at the school come from other neighborhoods and school catchment areas. I conducted this study from October, 2009 to June, 2010 as part of the language arts and social studies curricula in my classroom.

Students in my Grade 6 class represented a range of academic, physical, and social abilities. Six students in the class were on individualized education plans, with four of the students supported throughout the day by two full time education assistants. In addition, four students were identified with a gifted designation throughout the course of the year, and two more students were assessed with significant learning disabilities with pending individualized education plans. The makeup of the class consisted of 14 boys and 12 girls. All 26 students in the class were invited to participate in the study. Midway through the year, two exchange students from Korea, and one transfer student from Alberta joined the class but these three students did not participate in the study.

Before commencing the unit of instruction at the beginning of October, I applied for and received ethical approval to conduct the study within my own classroom from the

University of Victoria's Human Ethics Committee (see Appendix A). I also applied for and received approval from my School District (see Appendix B). In addition, I wrote a letter to my Principal to provide her with the details of my study and inform her that I had sought ethical approval from both the University and the School District (see Appendix C).

In order to avoid a "power over" situation, in which my students and/or their parents felt obligated to participate in the study, I read a script to them which described the study and the option of consent (see Appendix D). Signed consent forms to participate in the project were submitted to the school secretary and left in her care until final report cards were issued on June 29th, 2010 (see Appendix E and Appendix F). Although all students participated in the small group activities as part of the curriculum, I had no knowledge of which students had given consent to participate in the research project until the school year ended. However, at the end of September, 2010, the Principal was asked to confirm that there was at least one group with four individuals who had given consent thereby ensuring a source for data collection. Neither the school nor any of the participants are identified by name in my report of this study, thus ensuring confidentiality of each child's data. In the last week of school, before summer break, students were given an end of study follow-up letter, reminding them that if they had chosen to participate in the study, and they wished to withdraw they could do so, without explanation, by returning the letter to the school secretary (see Appendix G).

All of the students participated in this unit of instruction including all of the lessons, activities, assignments, and evaluations as part of their regular language arts and

social studies programs. Of the 26 Grade 6 students in the class, 22 students chose to participate in the study. However, only 19 completed both pre- and post-program questionnaires. Upon completion of the program implementation, the transcribed pre- and post-program conversations of one randomly selected group of four students, based on participants with consent, were also used for the data analysis. All student names are pseudonyms and examples of student written work or verbal comments have been conventionalized (i.e. I have corrected the spelling and grammar).

Design of the Study

As stated previously, my study involved the implementation and evaluation of the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000) for developing students' use of talk as a tool for reasoning and carrying out collaborative interactions. Specifically, the investigation explored how teaching an Exploratory Talk framework would affect student participation and attitude towards group discussions.

The main goals of the *Thinking Together* (Dawes, Mercer, & Wegerif, 2000) program in this study were:

(i) to raise students' awareness of the use of spoken language as a means for thinking together,

(ii) to enable students to develop their abilities to use language as a tool for thinking, both collectively and alone, and

(iii) to enable students to apply the tool of language effectively to their inquiry of global citizenship.

The Grade 6 class was taught 16 lessons based on the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000). These lessons all had the same format which began with a teacher-led-whole-class introduction, followed by a small group discussion activity and then a final, whole-class session in which ideas were shared and reflected upon. The aim of each lesson included both the teaching and learning of explicit dialogue skills such as critical questioning, sharing information and negotiating a decision. The first six lessons were largely concerned with raising students' awareness of how talk can be used for working together and establishing a specific set of 'ground rules' for discussion. The six lessons that followed were designed to enable students to apply their developing discussion skills to various topics. The final lessons were specifically focused on the topic of global citizenship and the students' inquiry into a local/global issue of personal significance. Each lesson applied a particular skill and targeted a specific concept. I regularly reinforced the importance of effective discussion in group activities by encouraging the ground rules which were established in the first six lessons.

Following the suggestions outlined in the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000) the groups for these lessons were made up of three children with respect to ability and gender. This process of selecting individuals for groups was intended to provide a balance of students who could encourage reluctant participants and also avoid possible personality clashes. This same process of group selection was used to establish the pre- and post-program groups of four. It was my intention to complete the 16 lessons of the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000) within the first three months of the school year. However, the realities of the class and school

community dynamics influenced the length of time for this study. While the discussion in Chapter 5 elaborates further on the situation, the first 10 lessons were taught from October to December and the final 6 lessons were taught from March to June.

Table 1 provides the scope and sequence of this unit of instruction. Worksheets for lessons and activities used during the unit can be found in the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000).

Table 1

Unit of Instruction for the Thinking Together *Program*

Learning Outcomes	**Resources**	**Whole Class Introduction**	**Small Group Work**	**Whole Class Discussion**
Lesson #1 Talk About Talk Raise awareness of how people talk with one another Understand vocabulary that describes ways of talking Practice using 'talk' words	Dictionary Thesaurus Large sheets of white paper Felt pens Worksheets: Talk words Sorting talk Speech bubbles	Introduce the topic 'talk about talk' and facilitate a discussion about talk using questions to elicit students' ideas.	Students work together in small groups on two activities, 'sorting talk' and 'speech bubbles'. Small groups create a 'life-sized talking head' and a speech bubble (for display) with one of the agreed upon talk words in it.	The teacher facilitates a discussion using questions to elicit reflections on the group work activities *(i.e. How well did your group work together? Did you use talk to get the work done?).*
Lesson #2 Talking in Groups Working together in 'talk groups' and establishing cohesion Practice taking turns to talk	Paper and pens, stopwatch and timer Worksheet: Starter questions	Introduce the topic, "talking in groups" to the students and explain the criteria used to organize the groups (groups of three, combination of strengths, etc.) Group composition is non-negotiable	In small groups, the students work together on an interviewing activity. Afterward, in a class discussion, a member of each group is appointed as a speaker and briefly describes the hobbies for each member of the group.	The teacher facilitates a discussion using questions to elicit reflections on the lesson and the quality of their talk together (*i.e. Please give an example of how your group took turns to talk. Who have you talked to that is a good listener? How do you know?).* **audio-taped lesson*

Learning Outcomes	Resources	Whole Class Introduction	Small Group Work	Whole Class Discussion
Lesson #3 Building Copies Practice giving accurate instructions and asking relevant questions Raise awareness of how individuals talk with one another	Two matching sets of construction material for each group (i.e. Lego pieces)	Introduce the topic 'building copies' and explain activity. Two students will sit back to back, each with a set of lego. The third student will act as an observer/ facilitator.	One student makes a model or pattern with the construction material. Once complete, the other student must replicate the model by asking for instructions. Instructions can only be given in response to questions asked. Once complete, partners change tasks.	The teacher facilitates a discussion on the sorts of questions that provided useful information and the kinds of descriptions that were the most accurate *(Did listeners ask relevant questions?)*.
Lesson #4 Deciding on Ground Rules Raise awareness of the value of talk Clarify relevant vocabulary Decide on a set of ground rules	Dictionary Thesaurus Worksheets: Are these rules useful? Talking words Our ground rules for talk	Introduce the topic 'ground rules' for social behavior (i.e. cel phones, running, standing in line-ups etc.). Discuss the Worksheet, Are these rules useful?	The students work together on two activities, 'talking words' and 'creating a set of ground rules.' The groups share their rules and reasons for them and the teacher records them on the board.	The list is revised as more rules are added. The final list should reflect the ground rules for Exploratory Talk (see attached). The session ends with student reflections on the lesson content *(i.e. How well did your group work together?)*.

Learning Outcomes	Resources	Whole Class Introduction	Small Group Work	Whole Class Discussion
Lesson #5 Using the Ground Rules Practice using the ground rules for talk in a structured context Develop an understanding of personal morality	Short story: Finding things Worksheet: Taking turns to speak and listen	Introduce the topic 'using the ground rules' and review the ground rules set in the previous lesson.	In small groups, the students appoint a group member to read the passage entitled 'Finding Things'. Afterwards, they work through the 'taking turns to speak and listen' activity.	The teacher facilitates a discussion by asking the students to reflect on the content of the session *(i.e. Did your group use the ground rules for talk? Did you need to remind one another?).*
Lesson #6 Reasoning with Ground Rules Apply all the ground rules for talk to reasoning problems Practice asking relevant questions	Worksheets: Visitors to the dog's home Dogs in the dogs' home	Introduce the topic 'reasoning with ground rules' and review the classroom ground rules. Set up the 'stray dog' scenario and assign the small group activity.	In small groups the students work together on the 'stray dog' activity by matching the descriptions for each stray dog with the descriptions of the owners. Emphasis is on supporting each decision with reasons.	The teacher facilitates a discussion by asking the students to reflect on the content of the session *(i.e. How well did your group talk together to solve the problems? Do you find it easy to agree on what to do? Do the ground rules help?).*

Learning Outcomes	Resources	Whole Class Introduction	Small Group Work	Whole Class Discussion
Lesson #7 Rainforest Photographer Practice in using all the ground rules to reach decisions and accept joint responsibility	2 sheets of 1 cm grid paper for each group (pair) pencils, rulers, felt pens	Introduce the activity, 'rainforest photographer', as a modified version of 'Battleship.' Instead of sinking boats, the students will be collecting 'photographs of animals."	The students are paired for this activity. The pairs must talk together to decide the positioning of their animals, both as photographers and as rainforest landlords. Emphasis is on problem solving and reasoning skills to guess the position of the animals.	The teacher facilitates a discussion by asking the students to reflect on the content of the session *(i.e. What strategies did you use in order to find the animals?)*.
Lesson #8 Persuasion Understand how language is used to persuade others Practice the skills of persuasive talking and writing	Worksheets: Persuasive phrases Making a letter more persuasive	Introduce the topic 'persuasion' and check for understanding of the word's meaning. Discuss the Persuasive phrases worksheet and ask students to choose a phrase and use it in a sentence (offer a context if necessary).	In small groups the students work on two activities. Letter writing - rewrite a letter in a more persuasive manner. Role-play - enact a scene in which a child is trying to convince a parent of something. Present skits	The teacher facilitates a discussion by asking the students to reflect on the content of the session *(i.e. How well did your group work together? Can you give an example of the way you shared your ideas through talk?)*.

Learning Outcomes	Resources	Whole Class Introduction	Small Group Work	Whole Class Discussion
Lesson #9 Who Pays? Use the ground rules to make joint decisions about social and moral dilemmas Increase awareness about victims of crime	Short story: Who Pays? Worksheet: Discussion format Drama Cards	Introduce the outcomes of the lesson. Remind the students of the ground rules. Read the short story, *Who pays?* Reinforce the idea that a good discussion means that people do disagree, but listen to one another's reasons and are prepared to compromise.	In small groups, students use the worksheet, Discussion format to respond to the short story. Whole class discussion about any issues raised. Drama cards - groups create a 3-minute theatre play. Present plays	The teacher facilitates a discussion by asking the students to reflect on the content of the session *(i.e. How did you manage to come to a group agreement? Can you give an example of how talk helped you to put your play together?).*
Lesson #10 Town Plan Increase awareness of planning and environmental issues Practice joint decision-making, using all the ground rules for talk Practice giving clear instructions	Worksheets: Town Plan Facilities Information items	Introduce the outcomes of the lesson and explain that the task is to develop and plan the best possible new town. Each group is given two information items for the positioning of facilities that must be shared with others.	In small groups, students plan their towns by considering and deciding where they think each facility should go. Visitors to other groups for facility information must listen, remember, and repeat it to their own group upon return.	The teacher facilitates a discussion by asking the students to reflect on the content of the session *(i.e. Can you give an example of people in your group thinking of different ideas? Do you think your group talked well together?).*

Learning Outcomes	Resources	Whole Class Introduction	Small Group Work	Whole Class Discussion
Lesson #11 Staying Friends Using the ground rules to discuss social and moral issues Deepen understanding of two citizenship issues: personal morality and bullying	Short story: *Staying Friends* Worksheet: Thinking together about staying friends	Introduce the outcomes of the lesson. Ask for volunteer readers to read the short story aloud.	In small groups, students discuss a story ending together using their agreed upon rules for talk. Each group shares their story ending, giving reasons for their choices.	The teacher facilitates a discussion by asking the students to reflect on the content of the session *(i.e. Did you remember to use the ground rules for talk? If you worked with different people, would you still be able to use the ground rules?).* **audio-taped lesson*
Lesson #12 Ideal Futures Demonstrate an understanding of global citizenship Demonstrate an understanding of issues affecting our lives Using the ground rules to discuss social and moral issues	Chart paper, felt pens	Introduce the outcomes of the lesson. Ask students to think about how they would like themselves/their school/local area/country/ world to look in 10 years time.	In small groups students record their ideas on chart paper in writing or drawings. Discuss which of these things is the most important and most realistic, and how each could be achieved. Present to the class.	The teacher facilitates a discussion by asking the students to reflect on the content of the session *(i.e. How did your group decide which idea was the most important?).*

Learning Outcomes	Resources	Whole Class Introduction	Small Group Work	Whole Class Discussion
Lesson #15 Action Plan Explore the solutions for an issue and decide on an action plan Demonstrate an understanding of issues affecting our lives Using the ground rules to discuss social and moral issues	Worksheets: Action plan Outlooks 6: Global Citizens textbook	Introduce the outcomes of the lesson. Ask students to consider which actions would have the biggest impact in school, the local area, country and world. Which actions are the most practical to do?	In newly formed small groups, students cut up and discuss the action cards on the Action card game worksheet. Complete Action Plan worksheet Present	The teacher facilitates a discussion by asking the students to reflect on the content of the session.
Lesson #16 Awareness Poster Design a poster that reflects the courses of action decided upon to address an issue Demonstrate an understanding of issues affecting our lives Using the ground rules to discuss social and moral issues	Poster paper, felt pens Worksheets: Recording the Action activity sheet Reflect	Introduce the outcomes of the lesson. Make posters to raise awareness of the issue and display around school.	In small groups, students work on their posters. Complete recording the action activity Reflect	The teacher facilitates a discussion by asking the students to reflect on the content of the session.

Data Collection Procedures

All data for this study were gathered within the context of the unit of instruction described previously. The effects of the program on students' talk, reasoning and learning were studied through qualitative and quantitative research methods. Ongoing data collection provided information on how lessons were supporting students' use of exploratory talk. Data sources included pre- and post-program questionnaire ratings, written responses, audio recordings, and transcribed conversations. The collection of a variety of types of data enabled triangulation and helped to build an in-depth look at the case study. Each form of data collection is explained in detail below.

1) student pre-program and post-program questionnaire (see Appendix H). I developed the questionnaire for the purpose of exploring student attitude change toward group work. This method of data collection was chosen for the following reasons: the responses could be gathered in a standardized way and therefore provide some degree of objectivity, the questionnaire was quick to administer, and information could be collected from all students at the same time. The following disadvantages of using the questionnaire format were recognized: questions can be misinterpreted, students may answer superficially especially if the questionnaire takes a long time to complete, students may interpret descriptors on rating scales differently, and students may not wish to answer truthfully, particularly if they believe they will be penalized by giving their real opinion. While there was a space for additional comments for each item on the questionnaire, I recognize the limitations to the information that can be gained from questions and rated responses.

2) written responses - Students wrote in their reflection journals on a regular basis and their work was collected periodically throughout the study. Students were often given writing prompts (see Table 1 under whole class discussion prompts) and at other times they were asked to reflect on their group discussions in general. The reflections provided each student the space to share his/her concerns or insights about the group process. I offered the students verbal and/or written feedback in response to their comments. The journal entries were not analyzed but information gained from the students' journals was used to further facilitate the ongoing implementation of the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000).

3) audio recordings of all Grade 6 students while engaged in discussions a) prior to the *Thinking Together* lesson implementation in pre-program groups of 4; b) at Lesson 2, and Lesson 10 in *Thinking Together* groups of 3; and c) upon completion of the *Thinking Together* lesson implementation in initial pre-program groups of 4. Groups of 4 were used for the pre- and post-program discussions for a number of reasons. First, the number of groups was reduced which made it more manageable for audio taping and monitoring. Second, the group dynamic was changed by altering membership and by increasing the number of participants by one student. These changes were made to explore whether or not there was a transfer of the indicators of exploratory talk from the program implementation groups to a different group population.

4) student conversations of one randomly selected pre-and post-program group of 4 were transcribed upon completion of the *Thinking Together* lesson implementation. One group was selected to ensure the data collection and analysis was manageable.

Table 2 depicts how the research study questions were related to the sources of data collection and the data analysis methods.

Table 2

Research Questions in Relation to Data Collection and Analysis

Research Questions	**Data Collection and Analysis**
1. Do students use more features of Exploratory Talk in their classroom discussion groups following the implementation of the *Thinking Together* program and, if so, in what ways (Dawes, Mercer, & Wegerif, 2000)?	Discourse analysis of the pre- and post-discussion groups. The discussions were transcribed and coded based on the following indicators of Exploratory Talk: • use of 'would', 'could', 'should','maybe', 'might', and 'if' • use of 'I agree', 'I think', 'I disagree' • use of 'because', 'so', 'how'' and 'why'
2. What is the change, if any, in the students' perceived value of participation in group discussions?	Questionnaire Questions S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, S11, S12, S13, S14, S15 The students' pre-and post-program questionnaire ratings were tabulated and compared individually and collectively. A differential score was noted to indicate the direction of the change, if any, that occurred between the pre- and post-program ratings. Written comments on the students' pre- and post-program questionnaires were analyzed for common themes and tendencies in the students' thinking.
3. How does the implementation of the *Thinking Together* program effect student participation in discussions?	1) Discourse analysis of the pre- and post-discussions of one focus group of students. The discussions were transcribed and coded based on the use of the following indicators of Exploratory Talk: • frequency of student participation • equitability of participation of group members • duration of student responses (length of utterances) • actions that extend inclusion of others

Data Analysis

With respect to the study's guiding questions, the following data were analyzed: the student comments on the pre- and post-program questionnaire were analyzed for common themes and tendencies in the students' thinking; the student pre- and post-program questionnaire ratings were compared to reveal any changes in students' perceptions toward the value of participation in group work; and the transcribed pre- and post-program focus group discussions were assessed through discourse analysis to determine whether or not students used more features of the Exploratory Talk framework, and were analyzed through comparative measures for indicators of increased and equitable participation.

Students' Comments

As described previously, space was provided on the questionnaire for students to offer comments to support their rating choices. In order to gain further insight into students' attitudes toward the value of talk in small group discussions, I analyzed the written comments that were offered on the pre- and post-program questionnaires. I began my analysis by removing students' comments from their corresponding items and combining the students' comments on the pre-and post-program questionnaires in an effort to identify shared themes. This method of analysis was chosen in an effort to be more objective and take a fresh look at the data for additional or new information.

The comments were read and re-read for common themes and tendencies in the students' thinking. I used coloured highlighter pens to code individual initial themes that I identified in the data. The techniques of word repetitions and key-words-in-context

(KWIC) were used to help identify categories in the data. Word repetitions were found by using the search function in the Microsoft Word program to generate word-frequency lists from the questionnaire comments. As an example, the word "depends" occurred 37 times in the students' written comments, which led to the emergence of two themes - group composition (depends on who) and topic selection (depends on what). Key-words-in-context were located by identifying specific words and then searching the text for all instances of the word within a phrase or a group of words. For example, the word "brain" was found in phrases such as, "I like to be with a group because I think you think better when all of the brains of the people are working together." and "Because more brains work better." The identification of this word contributed to the identification of collaboration as a theme. The following 10 categories or themes were identified from the collapsed pre- and post-program questionnaire comments: group composition, topic selection, social discomfort, equality, inequality, collaboration, affective positions, challenge, justification, and ambivalence. Three outlier comments were not included in any of the categories (i.e. 'Huh? What does that mean?"). A description of each of the identified themes is provided in Chapter 4. Table 3 is an example of the tabulation of data for the type and number of themes for each item from the pre- and post-program questionnaires. A complete presentation of identified themes and the entire list of student comments is found in Appendix I. See Table 14 in its entirety in Chapter 4 for a complete presentation of data for each questionnaire item.

Table 3

Number of Comments/Theme from the Pre- and Post-Program Questionnaires

Item	Pre-Program Questionnaire Comments (Theme and Number)	Number of Pre-Program Questionnaire Comments	Post-Program Questionnaire Comments (Theme and Number)	Number of Post-Program Questionnaire Comments
1. I think better on my own rather than with others in a group.	Group Composition (8) Topic Selection (3) Personal Autonomy (1) Social Discomfort (2) Collaboration (3) Affective Positions (2) Ambivalence (2)	21	Group Composition (1) Personal Autonomy (1) Collaboration (5) Ambivalence (1)	8

When analyzing the questionnaire comments, I also looked at how the students' responses may or may not have provided additional information about the pre-and post-program questionnaire ratings. A decision was made to further analyze the items where the rating change was two levels or higher by four or more students. Consideration was also given to items where a significant number of students (eight or more) made a change in their thinking. The themes within each item were also used to further compare pre- and post-program questionnaire rating changes. For example, the difference in the number of responses can be seen in item #1, "I think better on my own rather than with others in a group." where 21 comments were offered by students to support their individual ratings on the pre-program questionnaire and only eight comments were offered on the post-program questionnaire. A change in themes can be seen in item #4," In small group discussions, if I think someone is wrong I believe it is important to challenge that person's opinion." where the theme of social discomfort was present three times in the

pre-program questionnaire and one time in the post-program questionnaire. The data analysis of the questionnaires was important in order to understand how rating changes were related to students' attitudes and their experiences in small group discussions. It was also especially relevant when considering where changes and improvements could be made when implementing the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000) in the future.

Questionnaire Data

Ratings.

After the study was completed, the 19 participants' pre- and post-program questionnaire ratings and responses were compared to determine any change in their perceived value of participation in group discussions. Table 4 is an example of the questionnaire data compiled for each student who had given consent to participate in the study. A complete presentation of each student's ratings on the pre- and post-program questionnaires as well as a calculated differential is found in Appendix J.

Table 4

A Comparison of Carl's Pre- and Post-Program Questionnaire Ratings

Item	Pre-Program Questionnaire	Post-Program Questionnaire	Differential
#1	3	5	+2

The questionnaire rating scale was constructed so that the desired direction was towards the lower scores (i.e. 1 = Strongly Agree and 5 = Strongly Disagree) with the exception of Questions #1, #6, and #15 where the desired direction was towards the higher scores. For the purpose of describing the results, a re-representation of the rating

system was needed to make sense of the data. Since each of the questions has a more desirable response, in relation to the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000), the most desirable response was given a +5. See Table 5 for the re-representation of the question ratings.

Table 5

Re-Representation of Rating Scores

	Strongly Agree	**Agree**	**Neither Agree nor Disagree**	**Disagree**	**Strongly Disagree**
Original Rating Scale	1	2	3	4	5
Re-Representation of Rating Scores	5	4	3	2	1

In the analysis of the student ratings, the description of the results are referred to as positive when the responses move in the desired direction. Further analysis of the questionnaire involved the assignment of a positive or negative value, or neither, depending on the change in the student's rating direction. Table 6 presents an example of the organization of the distribution of student ratings on the pre- and post-program questionnaire. Table 7 provides an example of how the data on the number of students who made positive or negative rating changes were organized. See Table 15 and 16 in their entirety in Chapter 4 for the complete analysis of the data on questionnaire ratings.

Table 6

Student Ratings on the Pre- and Post-Program Questionnaire

Item	SA		A		NA		D		SD	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
#1. I think better on my own rather than with others in a group.	0	1	4	5	9	7	4	5	2	1

Table 7

Pre- and Post-Program Questionnaire Rating Differential

Rating Differential	**+3**	**+2**	**+1**	**0**	**-1**	**-2**	**-3**	**-4**	**# + total**	**# - total**	**# > +1**	**# > -1**
Item #												
#1	0	2	2	7	6	2	0	0	4	8	2	2

The pre- and post-program questionnaires of the focus group of four students were also analyzed for their individual attitudes toward participation during group discussions.

The Group of Four Participants

A description of each student in the pre- and post-program discussion group of four is provided below offered to give insight into the individual personalities. The students' Grade 6 report cards were referred to to confirm an accurate description of their profile.

Carl.

Carl is a highly motivated student who excels in most curricular areas. He is a strong, independent worker who grasps concepts quickly and accurately. Carl used class time productively, often finishing his work well within the time provided. Achievement is important to Carl and he is willing to set goals and work toward them. During the course

of the school year, Carl demonstrated leadership qualities in many different situations (in small group work, in sports, in school service). He is a talented athlete as well as a student who excels in academics. Carl was recommended for gifted testing during the fall and received a gifted designation during the spring. An individualized educational plan is pending. In respect to oral language, Carl was an enthusiastic participant in whole class as well as small group discussions.

Tony.

Tony is a friendly student who enjoys the social aspect of school. Although his social nature is one of his strengths it could at times impact his learning. He is easily distracted, impulsive, and frequently off-task. Tony often missed instructions and did not always use external cues. However he responded well to redirection when reminded about getting back on task and when he was focused, he could complete assigned work independently. Tony struggled with organization and often needed assistance with completing assignments (i.e., reviewing instructions, finding materials) and submitting his work on time. Tony has received learning assistance for both reading and math periodically throughout his elementary school education. He was tested for potential learning disabilities in Grade 4. In respect to oral language, Tony rarely offered input to whole class discussions, other than to ask questions for clarification, but participated more in small group conversations.

Barb.

Barb was new to the school at the beginning of the year. She is a capable student who is a strong independent worker. She has very good organizational skills that enabled

her to plan for long term assignment completion as well as meet daily assignment deadlines. Barb values achievement and is willing to set goals and work toward them. Outside the classroom, Barb was reluctant to participate in extra-curricular activities and had a very small peer group. She had the support of one best friend who she spent all of her free time with at school. In respect to oral language, Barb rarely offered input to whole class discussions and participated slightly more in small group conversations. At the first term student conference, Barb expressed her discomfort with speaking in front of others and wrote the following goal for herself, "I would like to increase my comfort level with public speaking. I will work on sharing my ideas more in small group discussions as well as prepare for public speaking opportunities (well organized, rehearsed, cue cards)."

Ellie.

Academically, Ellie is an average student and achievement is important to her. She has good organizational skills and worked hard to actualize her goals. Ellie was involved in school life outside the classroom as a member of the students' council, a classroom and office monitor, a peer helper, and a player on the girls' basketball and volleyball teams. Socially, Ellie had a very small peer group with the support of one good friend. In respect to oral language, she was very quiet and rarely participated in whole class or small group discussions. One exception was oral presentations where Ellie seemed comfortable in front of the class delivering a rehearsed speech.

Analysis of Focus Group's Talk

Using the audio-recorded data, discourse analysis was used to investigate changes in the quality of the four students' talk over the course of the study. The aim of the analysis was to determine if the students' joint engagement with the project changed following the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000). In other words, to what extent, if any, did the students use more features of the Exploratory Talk framework in their classroom discussion groups following the implementation of the program and to what extent, if any, did student participation change? 'Indicators' were selected based on Wegerif and Mercer's (1997) and Soter, Wilkinson, and Murphy's (2008) research that identified specific 'reasoning words' associated with exploratory talk. These 'reasoning words' are commonly used conjunctions, modals, and adverbials that are found within the following three areas:

Speculating/Proposing - would, could, maybe, might, if

Positioning/Claiming - I agree, I think, I disagree

Analyzing/Generalizing - because, so, how, why

In addition, the following discourse characteristics were analyzed for the quantity of students' talk over the course of the study. The frequency and equitability of student participation was investigated because the findings would give an indication of individual and shared involvement. The length of student utterances was explored to gain a more definitive measure of individual engagement. Finally, actions that extended inclusion of others were assessed as indicators of a more deliberate attempt to collaborate.

Upon completion of the implementation of the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000), the transcribed pre- and post-program conversations of one randomly selected group of four students, based on participants with consent, were read over and coded for the characteristics described above.

Reasoning words.

The search function in Microsoft Word was used to call attention to the targeted words. In addition, the transcripts were checked to ensure each identified targeted word was also used in a way that was consistent with reasoning. As an example, 'so' used in "... an SOs with the radio ..." was not included, while 'so' used in "... so if you run out of water ..." was analyzed in the data. Table 8 is an example of the tabulation of data for the reasoning words associated with speculating and proposing and compares the pre- and post-program conversations. See Table 17 in its entirety in Chapter 4 for the complete list of reasoning words.

Table 8

Comparison of Reasoning Words Associated with Exploratory Talk

Reasoning Words	Group of Four in Pre-Program Discussion	Group of Four in Post-Program Discussion
would	28	12
could	33	4
maybe	8	2
might	0	1

Frequency of student participation.

The frequency of student participation was also analyzed by using the search function in Microsoft Word to call attention to each student's name. In addition, transcripts were checked to ensure the identified targeted name indicated a talking turn in the conversation and not a reference to that student made by another member of the group. In the following example, 'Tony' on page 3 in " Carl: O.K. ... and then I think, uh, Tony's idea of the shaving mirror is pretty ..." was not used as data as he was being referred to by another student. However, 'Tony' on page 4 in "Tony: Unless helicopters pick you up or something" was counted as a talking turn because he was contributing to the conversation. The number of talking turns individually was compared to the total number of talking turns for each group and the percent of individual participation was calculated. For example, if there were 180 talking turns in the pre-program discussion group, and one student had 70 talking turns, his/her equitability of turn taking would be 38.5%. The data for the frequency of student participation was tabulated in a table format that compared the pre- and post-program conversations. Table 9 is an example of how the information in the table is presented. See Table 18 in its entirety in Chapter 4 for the complete presentation of the analyzed data on frequency of student participation.

Table 9

Frequency of Student Participation and Equitability of Turn Taking

Name of Student	Number of Talking Turns in Pre-Program Discussion	Number of Talking Turns in Post-Program Discussion
Carl	180 talking turns = 70/180 = 38.5%	218 talking turns = 80/218 = 36.8%

Equitability of student participation.

A measure of equitability of participation of group members was obtained by comparing the number of words spoken individually to the total number of words spoken for each group and calculated the percent. For example, if there were 1440 words spoken in the pre-program discussion group, and one student said 671 words, his/her participation would be 46.6%. The range of participation scores for each individual from the pre-program discussion group were contrasted with the range of participation scores for the post-program discussion group and tabulated in a table format (see Table 10 below). See Table 19 in its entirety in Chapter 4 for the complete presentation of the analyzed data for equitability of student participation.

Table 10

Equitability of Student Participation

Name of Student	Percentage of Equitability in Pre-Program Discussion	Percentage of Equitability in Post-Program Discussion
Carl	1440 words = 671/1440 = 46.6%	1996 words = 859/1996 = 42.9%

Length of student responses.

The length of student responses, or utterances, were also analyzed by using the 'show statistics' function in Microsoft Word. Each student's dialogue was first copied and pasted from the original transcript into a blank document. Paragraphing spaces were placed between talking turns as the 'show statistics' function would indicate each utterance as such. Incidences of "umm", "urr" and syllable duplication (i.e. ca-can-candy) were removed prior to the word count analysis. In order to calculate the mean length of

utterance for potential increase of individual participation, the total word count was divided by the number of talking turns (Parker & Brorson, 2005). The data for the length of student responses was tabulated and presented in a table format which compared the pre- and post-program conversations (see Table 11 below). See Table 20 in its entirety in Chapter 4 for the complete presentation of the analyzed data on length of student responses.

Table 11

Mean Length of Student Utterance in Pre- and Post-Program Discussion

Name of Student	Mean Length of Utterance (MLU) in Pre-Program Discussion	Mean Length of Utterance (MLU) in Post-Program Discussion
Carl	671 words / 70 utterances = 9.58 words per utterances	859 words / 80 utterances = 10.73 words per utterance

Actions that extend inclusion of others.

Actions that extend inclusion to others involves a perceived invitation offered from a student to the group or an individual to join the conversation. A measure for actions that extend inclusion to others was achieved by colour coding the transcripts from both the pre- and post-program discussion groups for questions and statements that invited the participation of others. A distinction was made between questions that sought clarification of information previously discussed and statements of opinions versus questions or statements seeking new information, deeper reasoning, and the generation of consensus. The latter criteria for inclusionary comments were considered as data and chosen based on the context of the conversation. The former examples were not. The following is an excerpt of one selected comment included in the data. “Ah Tony, you can

go next." See Appendix K for a complete list of all identified inclusionary comments from both the pre- and post-program discussion groups respectively.

A further analysis differentiated invitations to the group as a whole versus invitations that were extended to the inclusion of specific individuals. Direct invitations to specific individuals may more likely result in increased responses and participation of group members. As an example, "OK, so who agrees?" was directed to the group whereas, "Ellie, do you agree?" was directed at one individual group member. A summary of the data for actions that extend inclusion to others was tabulated and presented in a table format which compared the pre- and post-program conversations. Table 12 shows the comparison of the pre-program and post-program discussion group's inclusionary comments and Table 13 provides an example of an individual student's change in the use of inclusionary comments. See Table 21 and 22 in their entirety in Chapter 4 for the complete presentation on actions that extend inclusion of others.

Table 12

Group Change of Actions that Extend Inclusion of Others

Actions that Extend Inclusion	**Pre-Program Discussion**	**To the Group**	**To a Student**	**Post-Program Discussion**	**To the Group**	**To a Student**
Number of Comments	15	13	2	25	12	13

Table 13

Individual Change of Actions that Extend Inclusion of Others

Student	Pre-Program Group Discussion	To the Group	To the Student	Post-Program Group Discussion	To the Group	To the Student
Carl	9	8	1	10	4	6

Limitations and Strengths of the Study

This case study explored how teaching an Exploratory Talk framework would effect student participation in and attitude towards group discussions. However, the findings in relation to participation in group discussion are based on one group of four students and the information revealed about attitude is limited to the 19 children who gave consent and completed both pre- and post-program questionnaires.. The goal of this research was to provide me, as the teacher-researcher, with valuable information to inform my own practice about how to better use the classroom experience to help students learn, and not to make generalizations about the findings.

This study was also limited by my role as a teacher-researcher. Within the study, I planned the unit of instruction, provided the instruction and conducted the research. The data collection and subsequent analysis were therefore informed by my beliefs and bias that through teaching a framework for Exploratory Talk, the quality of group work would improve and students would engage more effectively with collaborative tasks for longer periods of time. In addition, some of the criteria for analysis were based on subjective interpretation. For example, the selection of inclusionary comments was less objective because it was necessary for me to interpret students' intentions based on their comments.

This positive expectation may have influenced the students' attitude and behaviour and affected the results. In light of these personal views, I strived for a transparent research process by explicitly stating my beliefs about the topic throughout the research process. In addition, as I was one teacher, with eight small groups engaged in discussions at one time, it was very difficult to monitor and encourage each group's progress. The physical location of the research project also proved to be a challenge, as there were not enough quiet spaces in the school and the proximity of the groups meant that they were often distracted by each other. However, the situation did reflect the reality of classroom life.

A further limitation to the study was the unexpected lack of continuity within the implementation of the *Thinking Together* program (Dawes, Mercer, & Wegeif, 2000) and unit of instruction. As mentioned earlier, the first 10 lessons were carried out during the Fall term, and the last 6 lessons were not completed until the third term. This lack of consistency may have affected the results in respect to learning and applying the ground rules.

A final limitation to the study was in the use of audio-taped transcripts. Often times the nuances of non-verbal communication are missed with an audio recording as opposed to a video-taped record, which was the method of data collection used by other researchers such as Dawes, Mercer and Wegerif. In addition, there were several occasions where the students may have misused the tape recorder functions and consequently data were lost. Tapes were collected and analyzed upon completion of the study and were not monitored throughout to ensure the quality of the data recordings.

While there were limitations inherent in the dual role of teacher/researcher as discussed above, there were also many advantages to conducting research in one's own classroom. First of all, the opportunity afforded the flexibility to follow the interests and needs of the students and implement the program as it fit into the context of the classroom. As an example, conversations were supported to follow their natural course of completion and not cut off prematurely. While the lack of teacher monitoring may have been a limitation, students were trusted to engage in the process of collaboration and to join in the construction of personal and shared meaning.

A second strength is that the study was situated within a school community that offered unconditional support. Not only did the school principal and other staff members express interest in the project, they also offered encouragement, and demonstrated their belief in it by purchasing school copies of both the primary and intermediate *Thinking Together* programs (Dawes, Mercer, Wegerif, 2000). A final strength is acknowledgement of the *Thinking Together* program itself as it provides a package of clearly laid out lessons that effectively bridge theory into practice.

Further reflections on the contributing influences that affected the outcome of the study are presented in the discussion section of Chapter 5.

Chapter Summary

In this chapter, I outlined the research methodology of this project. I described the methods I used to explore how teaching a framework for Exploratory Talk would effect student participation in group discussions as well as students' perceived value of talk in group discussions. I described the setting in which I conducted the study and how I

secured the students' participation. I included information about the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000) in which the unit of instruction was based. I discussed how data were collected and analyzed, and I addressed the limitations and strengths of the study. Chapter 4 provides an overview of the findings.

CHAPTER 4

FINDINGS

This study explored how teaching an Exploratory Talk framework would affect student participation and attitude toward group discussions. This chapter presents the findings of the analysis of the data collected from October 2009 to June 2010 throughout the implementation of the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000) in my classroom. As described in Chapter 3, students were organized into groups of three and participated in a series of lessons designed to encourage exploratory talk in small group discussions. Audio recordings were made of small group conversations in pre- and post-program groups of four to determine any changes in students' use of exploratory talk, as well as in their attitude toward valuing the effectiveness of talking to learn. Data sources included audio recordings, transcribed conversations and pre- and post-program questionnaire ratings and written comments. These sources were analyzed in order to determine changes in the indicators of exploratory talk and in the students' perceived value of participation during group discussions.

As explained in Chapter 3, the first area of student learning, perceptions of the value of small group conversations, was examined in order to investigate whether students' attitudes about small group discussions changed over the course of the *Thinking Together* program implementation (Dawes, Mercer, & Wegerif, 2000). The primary data source for assessing this area of learning was the 19 students' ratings and comments on the pre- and post-program questionnaires. The questionnaires were analyzed to determine the degree to which post-program ratings changed for each item, whether positive or

negative, when compared with the pre-program ratings, and to identify common themes within the students' written comments. The second area of student learning, participation within an Exploratory Talk framework, was examined in order to investigate whether it would affect the way students interacted with one another in small group conversations. The primary data source for assessing this area of learning was the transcriptions from the audio-recorded discussions of the pre- and post-program focus group. Transcripts were analyzed based on the following indicators of exploratory talk: reasoning words; frequency and equitability of student participation; length of student utterances; and actions that extend inclusion of others. These findings were tabulated and summarized and the types and quantity of responses were noted for each topic. The data sources and analysis procedures, which are briefly reviewed for the two areas of student learning, are followed by a discussion of the findings.

Students' Perceived Value of Participation in Small Group Discussions

In order to investigate whether the students' attitudes toward participation in small group discussions changed over the implementation of the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000), the students completed pre- and post-program questionnaires. Analysis of the questionnaire data focused on the students' written comments and the rating changes on individual questionnaire items.

Student Comment Analysis

Table 14 presents the tabulation of data for the type and number of themes for each item from the pre- and post-program questionnaire. While 99 comments were written on the pre-program questionnaire, only 46 were provided on the post-program questionnaire.

It would be difficult to speculate the reasons for this discrepancy. However, the reduced number of comments could be the result of the timing of the post-program questionnaire completion which occurred the last week of classes, before summer break. In addition, it may not be coincidental that the students offered the most comments at the beginning of the questionnaires on item #1, followed by the second most on item #2 and the third most on item #4. The number of comments was not used as a measure to compare the strength of the pre- and post-program questionnaire items for these reasons. The comments and identified themes were used to gain insight into the students' rating changes.

Data analysis revealed the following 10 themes identified from the collapsed pre- and post-questionnaire comments: group composition, topic selection, social discomfort, equality, inequality, collaboration, personal autonomy, affective positions, justification, and ambivalence. While an effort was made to separate the comments from the questionnaire items the students were responding to, the message of some of the comments was not apparent on its own. As a result, three comments were categorized as outliers that did not seem to fit under any theme.

Table 14

Number of Comments/Theme from the Pre- and Post-Program Questionnaires

Item	Pre-Program Questionnaire Comments (Theme and Number)	Number of Pre-Program Questionnaire Comments	Post-Program Questionnaire Comments (Theme and Number)	Number of Post-Program Questionnaire Comments
1. I think better on my own rather than with others in a group.	Group Composition (8) Topic Selection (3) Personal Autonomy (1) Social Discomfort (2) Collaboration (3) Affective Positions (2) Ambivalence (2)	21	Group Composition (1) Personal Autonomy (1) Collaboration (5) Ambivalence (1)	8
2. I enjoy group work.	Group Composition (4) Topic Selection (2) Social Discomfort (1) Collaboration (1) Affective Positions (4)	12	Group Composition (3) Collaboration (1) Affective Positions (1)	5
3. In small group discussions, I am comfortable sharing my opinion.	Group Composition (1) Topic Selection (2) Social Discomfort (1) Affective Positions (2) Ambivalence (1)	7	Affective Positions (1)	1
4. In small group discussions, if I think someone is wrong I believe it is important to challenge that person's opinion.	Social Discomfort(3) Equitability (2) Collaboration (2) Ambivalence (1) Personal Autonomy (2)	10	Social Discomfort (1) Collaboration (3)	4
5. In small group discussions, I often suggest ideas.	Social Discomfort (3) Affective Positions (2) Ambivalence (1)	6	Group Composition (1) Topic Selection (1)	2

Item	Pre-Program Questionnaire Comments (Theme and Number)	Number of Pre-Program Questionnaire Comments	Post-Program Questionnaire Comments (Theme and Number)	Number of Post-Program Questionnaire Comments
6. In my experiences with small group discussions, a few students do most of the talking.	Group Composition (2) Social Discomfort (2) Inequality (2) Collaboration (1)	7	Group Composition (2) Inequality (1) Ambivalence (2)	5
7. In small group discussions, it is important to change my mind if new ideas change my thinking.	Collaboration (3)	3	Collaboration (1) Ambivalence (1)	2
8. In small group discussions, if another group member has not spoken, I often ask them what they think.	Inequality (2) Equitability (1) Ambivalence (1)	4	Social Discomfort (2) Equitability (2) Inequality (1)	5
9. In small group discussions, when people state an opinion they should have to give reasons for their thinking.	Justification (3)	3	Topic Selection (2) Justification (2)	4
10. In small group discussions, it is important that everyone agree before writing down a group answer or making a group decision.	Social Discomfort (1) Inequality (2) Collaboration (1)	4		0
11. In small group discussions, my ideas are listened to and important to others.	Group Composition (2) Inequality (2) Equitability (1) Ambivalence (1)	6	Topic Selection (1)	1

Item	Pre-Program Questionnaire Comments (Theme and Number)	Number of Pre-Program Questionnaire Comments	Post-Program Questionnaire Comments (Theme and Number)	Number of Post-Program Questionnaire Comments
12. The work produced in small groups is usually better than what an individual can create on his/her own.	Personal Autonomy (2) Collaboration (5) Ambivalence (1)	8	Group Composition (2) Ambivalence (1)	3
13. Expressing my ideas out loud helps me to think better on my own.	Personal Autonomy (1) Social Discomfort (1)	2		0
14. In small group work, everyone's ideas are needed if we are going to be successful.	Collaboration (1)	1		0
15. When I am involved in small group discussions, we spend too much time talking about other things.	Group Composition (4) Topic Selection (1)	5	Group Composition (3) Topic Selection (1) Ambivalence (2)	6
Total Comments		99		46

Group composition.

Group composition referred to the individual personalities of the members who comprised a group. The pre- and post-program questionnaire comments revealed that of the 145 student comments, 33 were classified under the theme of group composition, which was the largest number of comments categorized in a theme. The following excerpt provides an example of a comment included under this theme: “Well, it depends on the group. Like, if we have people who fool around then your group will end up

probably talking about something else or just not working. But there are some groups that just get down to work and don't talk about anything else." Comments relating to group composition were written for 8 of the 15 questionnaire items. While the theme of group composition occurred in several of the statements, the largest number (9) were found in response to statement #1, "I think better on my own rather than others in a group." Analysis of the data revealed that group composition seemed to strongly affect the students' participation in small group discussions.

Collaboration.

Collaboration referred to two or more people working together toward a common goal in a small group discussion. The following excerpts provide examples of comments included under the theme of collaboration: "I learn better when I can share my ideas with a person/people who can build off of that, correct me, or give me other ideas on how to solve a problem.", "I like to be with a group because I think you think better when all of the brains of the people are working together." and "When I'm in a group we come up with stuff I would never come up with on my own." Of the 145 comments, 27 were grouped under the theme of collaboration. Although comments relating to collaboration were found in 8 of the 15 questionnaire items, the largest number (8) of comments were written in response to item #1. Based on the high number of student comments related to both collaboration and group composition in item #1, it appeared that the students were aware that effective collaboration with others is dependent on group membership. As well, a number of student comments reflected recognition that more can be accomplished working together.

Social discomfort.

Social discomfort referred to an individual's feeling of security and safety associated with talking with others in small group conversations. Of the 145 student comments, 17 were classified as social discomfort. The following excerpts provide examples of comments included under this theme: "Sometimes I feel a bit nervous to share my thoughts.", "I don't usually speak to others, I usually keep to myself in discussions." and "I might try to tell them but I would never try to argue, so I would just keep it to myself." Of the 15 questionnaire items, comments related to social discomfort were found in 9 of the questionnaire statements. The greatest number of comments related to social discomfort (4) were written in response to item #4, "In small group discussions, if I think someone is wrong I believe it is important to challenge that person's opinion." The students' comments seemed to indicate that individuals who struggle with confidence in social situations have more difficulty challenging others in small group discussions.

Ambivalence.

Ambivalence referred to a feeling of uncertainty or indecisiveness concerning some aspect of talk in small group discussions. The following excerpts provide examples of comments included under the theme of ambivalence: "I work well with either ...", "Because sometimes I like to share and sometimes I don't." and "Sometimes you will and sometimes you won't." The 15 of the 145 comments that were grouped under the theme of ambivalence were evenly distributed over 10 statements, which suggested that students were aware that their participation during group work is dependent on many factors.

Topic selection.

Topic selection referred to the task and/or topic students are discussing. Of the 145 comments, 13 were categorized as topic selection. The following excerpts provide examples of comments included under this theme: “It depends on what we’re doing or talking about.”, “Sometimes I am willing to share my opinion but it depends on what it is?” and “It all depends what we have to share.” Comments related to topic selection were evenly distributed across 7 of the 15 questionnaire items. Given the broad spectrum of these seven items, the students’ data seemed to indicate that topic selection influenced their personal interest in the topic and their subsequent participation.

Affective positions.

Affective positions referred to students’ positive social and emotional feelings toward participation in small group discussions. The following excerpts provide examples of comments included under the theme of affective positions: “I hate working by myself because sometimes I get embarrassed.”, “In small and big group discussions, I am not shy. I have lots of ideas and love to share them.” and “I love group work.” Of the 145 comments, 12 were grouped under the theme of affective positions. While comments related to this theme occurred in four of the statements, the largest amount (5) were found in response to statement #2, “I enjoy group work.” Data indicated that a small number of students showed a strong positive appreciation for working together with others.

Inequality.

The theme of inequality implied that participation among members of the group was not equal in small group discussions. The following excerpts provide examples of

comments included under the theme of inequality: “Some people are just like, full of ideas and they take charge which is good but I wish they’d let other people speak.”, “When people in my group kind of think that they know better, my ideas are not very important to them.” and “Sometimes one person doesn’t talk.” Of the 145 comments, 10 were grouped under the theme of inequality and they were evenly distributed across four statements. Based on the students’ comments, it seemed that there was a relationship between group composition and inequality. Students attributed a lack of participation to more dominant or less vocal members of the group. This theme appeared to be a description of what can happen in group work rather than a value statement of what should happen as in the theme of equitability.

Personal autonomy.

Personal autonomy described the stance of valuing the efforts of the individual over what can be achieved as a member of a group. The following excerpts provide examples of comments included under the theme of personal autonomy: “I think that I can work better by myself.”, “I think one person can come up with as good of an idea as a group.” and “I really like to work by myself.” Of the 145 comments, 7 were grouped under the theme of personal autonomy and evenly distributed over four statements. The small number of student comments may have indicated that personal autonomy may be a position important to particular individuals who value independence over group participation.

Equitability.

The theme equitability described equal participation of all members in small group discussions. The following excerpts provide examples of comments included under the theme of equitability: “Everyone can say something and everyone listens.”, “I do that most of the time because I think everyone should talk.” and “I don’t directly ask them, I ask everyone.” Six of the 145 comments were grouped under the theme of equitability, with the greatest number of comments (3) related to equitability found for item #8, “In small group discussions, if another group member has not spoken, I often ask them what they think.” The few comments may indicate that equitability was less of a concern for students than other issues. However, when the topic of inclusion of others was explicitly stated as in item #8, students were more likely to acknowledge the importance of the balance of participation.

Justification.

Justification referred to students who identify the importance of giving reasons to explain thinking during group discussions. The following excerpts provide examples of comments included under the theme of justification: “Give a couple if someone challenges your opinion.”, “Not everyone knows what you’re thinking so you should explain it to them.” and “They need a reason or they could just say it randomly.” Of the 145 comments, 5 were classified under the theme of justification and all were responses to item #9, “In small group discussions, when people state their opinion they should have to give reasons for their thinking.” Thus, few students wrote comments about the importance of providing reasons for thinking when asked explicitly on the questionnaire.

Outliers.

As mentioned earlier, a few outliers did not make sense without reference to the questionnaire items. In an effort to classify the three outlier comments, they were looked at again in relationship to their corresponding items. A closer look at the three comments revealed that one of them indicated confusion: “Huh. What does that mean?” The second and third comments appeared to offer some insight into the process of group discussions. In item #4, “In small group discussions, if I think someone is wrong I believe it is important to challenge that person’s opinion.”, one student’s response was, “It’s how you say it.” This comment reflects a form of consideration for others. This student may recognize that it is appropriate to challenge one another when one disagrees but the manner in which the feedback is offered is even more important. The final outlier example was written in response to item #15, “When I am involved in small group discussions, we spend too much time talking about other things.” One student wrote, “We are kids.” This comment reflects an accurate explanation but may also be an attempt to avoid accountability.

The theme of collaboration identified from the analysis of the students’ written comments represents the objective of the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000). The analysis of other student comments generated themes that either supported or challenged students’ abilities to effectively participate in small group discussions. As an example, social discomfort, inequality, personal autonomy, group composition and topic selection are themes that acknowledge circumstances that make group participation more difficult. The themes of equitability, affective positions,

justification, group composition and topic selection are themes associated with supporting successful group participation. The exception is the theme of ambivalence, which represents a neutral and potentially contingent position toward participation. It is interesting that the theme areas of group composition and topic selection can both negatively and positively affect collaboration. A further reflection on these relationships is discussed in Chapter 5.

Changes in Students' Rating from the Pre- and Post-Program Questionnaires

The comparison of the pre- and post-program questionnaire ratings is believed to be a measure of the effectiveness of the implementation of the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000). For the purpose of this analysis, results are discussed based on the questionnaire ratings that changed. Each specific item is introduced and then followed by a discussion of the findings. Table 15 presents the distribution of the student ratings on the pre- and post-program questionnaire. Table 16 summarizes the students' positive or negative rating changes as well as the degree of changes (rating differential).

Table 15

Student Ratings on the Pre- and Post-Program Questionnaire

Item	SA		A		NA		D		SD	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
#1. I think better on my own rather than with others in a group.	0	1	4	5	9	7	4	5	2	1
#2. I enjoy group work.	6	7	10	9	2	2	1	1	0	0
#3. In small group discussions, I am comfortable sharing my opinion.	6	2	6	13	6	1	1	3	0	0
#4. In small group discussions, if I think someone is wrong I believe it is important to challenge that person's opinion.	1	8	10	8	4	3	3	0	1	0
#5. In small group discussions, I often suggest ideas.	2	2	7	10	5	3	4	3	1	1
#6. In my experiences with small group discussions, a few students do most of the talking.	4	3	9	10	2	3	2	3	2	0
#7. In small group discussions, it is important to change my mind if new ideas change my thinking.	4	7	13	9	2	2	0	1	0	0
#8. In small group discussions, if another group member has not spoken, I often ask them what they think.	3	6	5	6	5	3	5	4	1	0
#9. In small group discussions, when people state an opinion they should have to give reasons for their thinking.	2	8	8	10	6	1	3	0	0	0
#10. In small group discussions, it is important that everyone agree before writing down a group answer or making a group decision.	12	13	6	6	0	0	1	0	0	0
#11. In small group discussions, my ideas are listened to and important to others.	2	3	9	13	6	1	2	2	0	0
#12. The work produced in small groups is usually better than what an individual can create on his/her own.	4	5	6	6	7	5	2	2	0	1
#13. Expressing my ideas out loud helps me to think better on my own.	3	4	4	12	5	0	4	3	3	0
#14. In small group work, everyone's ideas are needed if we are going to be successful.	8	7	9	12	1	0	1	0	0	0
#15. When I am involved in small group discussions, we spend too much time talking about other things.	1	0	4	7	6	6	7	6	1	0

Table 16

Pre- and Post-Program Questionnaire Rating Differential

Rating Differential	**+3**	**+2**	**+1**	**0**	**-1**	**-2**	**-3**	**-4**	**# + total**	**# - total**	**# > +1**	**# > -1**
Item #												
#1	0	2	2	7	6	2	0	0	4	8	2	2
#2	0	0	6	10	3	0	0	0	6	3	0	0
#3	0	1	4	7	5	2	0	0	5	7	1	2
#4	1	5	5	7	1	0	0	0	11	1	6	0
#5	1	0	6	8	3	1	0	0	7	4	1	1
#6	0	3	4	6	3	1	1	1	7	6	3	3
#7	1	3	4	8	2	1	0	0	8	3	4	1
#8	1	4	4	9	1	0	0	0	9	1	5	0
#9	1	2	10	6	0	0	0	0	13	0	3	0
#10	1	0	3	12	3	0	0	0	4	3	1	0
#11	0	2	6	8	2	1	0	0	8	3	2	1
#12	1	3	2	6	3	4	0	0	6	7	4	4
#13	4	3	4	4	3	1	0	0	11	4	7	1
#14	0	1	4	10	4	0	0	0	5	4	1	0
#15	0	0	5	8	3	3	0	0	5	6	0	3

Note.
+ = Number of students who moved one or more ratings in a positive direction
0 = Number of students who did not change their rating
- = Number of students who moved one or more ratings in a negative direction
 # +total = Number of students whose post-ratings moved in a positive direction
 # - total = Number of students whose post-ratings moved in a negative direction
 # > + = Number of students whose post-ratings moved two or more levels in a positive direction
 # > - = Number of students whose post-ratings moved two or more levels in a negative direction

Results are discussed for items based on the questionnaire ratings that changed in either a positive or negative direction by two levels or greater for at least four students or more. In addition, consideration is given to items where a significant number of students (eight or more) made a change in their thinking. Data analysis revealed the most positive changes in students' attitudes in responses to items #4, #7, #8, and #13. The analysis for item #12 uncovered an equally positive and negative change in the students' opinions.

4. In small group discussions, if I think someone is wrong I believe it is important to challenge that person's opinion.

The post-program questionnaire ratings indicated a positive change in thinking regarding the value of challenging others when someone is thought to be wrong. Eleven students changed their thinking in a positive direction and six of those students changed their ratings by two levels or higher. One student valued challenging others less after the implementation of the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000). As mentioned earlier, the program supports encouraging students to challenge each other when they do not agree, and to give reasons to explain their thinking. Of the 10 comments on the pre-program questionnaire, 2 related to collaboration, 3 to social discomfort, 2 to equitability, 2 to personal autonomy and 1 to ambivalence. Of the 4 comments offered on the post-program questionnaire, 3 supported the effectiveness of collaboration and 1 indicated social discomfort in this area. The comments indicating social discomfort on the pre-program questionnaire were used as an explanation for not challenging others. On the post-program questionnaire, the one comment identifying

social discomfort as a reason not to challenge others also recognized an awareness of its importance.

While the positive change in student ratings toward challenging others is evidence of the programs' encouragement to do so, this shift in thinking may be related to the negative rating change found in item #3, "In small group discussions, I am comfortable sharing my opinion." where seven students changed their thinking in a negative direction and five changed their thinking in a positive direction. While these results may be surprising, perhaps the students felt less comfortable sharing their opinions after the program implementation because of the emphasis within the program to question and challenge one another. Furthermore, students may have also learned that their opinions needed to be supported with reasons to explain their thinking. This speculation is supported by the positive results for item #9, "In small group discussions, when people state an opinion they should have to give reasons for their thinking." Thirteen students changed their thinking in a positive direction and no students indicated that one did not need to provide reasons to support his/her thinking.

7. In small group discussions, it is important to change my mind if new ideas change my thinking.

The post-program questionnaire ratings indicated a positive change in students' opinions about the value of changing their minds when new ideas change their thinking. Four of the 8 students who changed their opinion in a positive direction made a rating change two levels or higher. One student changed his/her thinking in a negative direction two levels or higher. The 3 comments on the pre-program questionnaire all supported the

effectiveness of collaboration. Of the 2 comments on the post-program questionnaire, 1 supported the importance of collaboration and 1 was ambivalent. This change in attitude seemed to indicate student recognition that effective collaboration involves learning from others and being open to changing one's mind.

8. In small group discussions, if another group member has not spoken, I often ask them what they think.

The post-program questionnaire ratings showed a positive change in students' perceptions that they were inviting less vocal students into their small group discussions. Nine students changed their thinking in a positive direction and five made a rating change of two levels or higher. One student changed his/her rating in a negative direction indicating he/she was inviting others less often to share their thinking when they were not contributing to the discussion. Of the four comments on the pre-program questionnaire, 2 were related to the theme of inequality, 1 to equitability, and 1 to ambivalence. Of the five comments on the post-program questionnaire, 2 were focused on equitability and 2 were on the theme of social discomfort, and 1 related to inequality. It is interesting to note the comments made by the students who themselves struggle with social discomfort. "Usually that person is me." and "For me, not really. I'm usually the one who hasn't spoken." These comments indicated that the two students realized that in addition to not offering inclusionary comments, they were also aware of their own lack of participation. Another point for consideration is the students' use of the words "sometimes" in both the pre-(2) and post-(3) program questionnaire comments. For example students wrote, "I do if I notice them but sometimes because they don't say anything, I almost forget that they

are there." and "Sometimes I do, sometimes I don't." Comments indicating that the inclusion of others was not important were absent from both questionnaires. The students' comments seemed to acknowledge that efforts to include others is a challenging interpersonal skill.

Comparison of the post- and the pre-program questionnaire comments revealed more explicit statements that supported the importance of consulting others who are less vocal as shown in the following post-program examples of equitability: "They need a chance to talk." and "I do that most of the time because I think that everyone should talk."

A final point for consideration is the following pre-program comment on the theme of equitability that made reference to how others are invited into a conversation: "I don't ask them, I ask everyone." I believe that an inclusionary comment directed at an individual is a more effective means of drawing he/she into the conversation than one offered to the group as a whole. This opinion is based on the observation that some students may never enter into the conversation if not explicitly invited to do so. However, it is also interesting to consider the impact that publicly addressing individuals may have on less vocal group members. This attention could potentially decrease their comfort level as they are put on the spot and may further explain the results in item #3 (referred to in the analysis of item #4 above).

13. Expressing my ideas out loud helps me to think better on my own.

The post-program questionnaire ratings indicated that one of the most positive changes in students' thinking was in regards to the value of talking with others in helping

individuals think better on their own. Seven of the 11 students who changed their thinking in a positive direction had a rating change of two levels or higher. One student changed his/her thinking in a negative direction that was two levels higher.

Of the two comments offered on the pre-program questionnaire, one was related to personal autonomy, "I don't need to talk out loud to think better." and one was related to social discomfort, "I would usually just talk about it with a friend. Not the whole class." No comments were offered on the post-program questionnaire. A point to consider when interpreting the results is the students' possible lack of understanding of item #13 on the pre-program questionnaire. An outlier comment, "Huh? What does that mean?" indicated that the item may have been confusing for at least one student. Following the implementation of the program, the students may have had a better understanding of explaining their reasoning as a means to deepening their own thinking.

12. The work produced in small groups is usually better than what an individual can create on his/her own.

The post-program questionnaire ratings revealed both positive and negative changes in valuing the work that can be produced in small groups rather than individually. Four of the 6 students who changed their thinking in a positive direction made a rating change of two levels or higher. Seven students changed their thinking in a negative direction, and of those students, four also made a rating change of two levels or higher. Of the 8 comments on the pre-program questionnaire, 5 related to collaboration, 2 to personal autonomy, and 1 was ambivalent. Of the 3 comments on the post-program questionnaire, 2 were related to group composition and 1 was ambivalent. The comments

offered on the pre-program questionnaire represented a range of positive and negative opinions as illustrated by the following examples: “When faced with something difficult, five people can generally create a more accurate solution than one person on his/her own,” and “I think one person can come up with as good of an idea as a group.” In contrast, of the three comments offered on the post-program questionnaire, two were directly focused on group composition, “Depends on the group.” and “It depends on the group members. If they don’t work together it won’t be good.” Both the increase and decrease in students’ rating changes may have been directly related to the composition of the small groups the students had been working in throughout the *Thinking Together* program implementation (Dawes, Mercer, & Wegerif, 2000). A positive change may be reflective of a group experience that was constructive and comfortable, whereas a negative change may be reflective of a group experience that lacked productivity and/or social comfort.

A further point of interest can be found in item #1, “I think better on my own rather than with others in a group.” where eight students changed their rating in a negative direction as opposed to only four students who changed in a positive direction. More than any other item on the questionnaire, item #1 generated the most comments from the students. Of the 21 pre-program comments grouped into themes, 8 related to group composition, 3 to topic selection, 3 to collaboration, 2 to affective positions, 2 to ambivalence, 2 to social discomfort, and 1 to personal autonomy. Of the 8 post-program comments, 5 related to collaboration, 1 to group composition, 1 to personal autonomy, and 1 to ambivalence. On the pre-program questionnaire, eight students used the words

"it depends who you are working with" to explain their rating. Even before the implementation of the program, the students seemed to intuitively understand that group composition can significantly affect the outcomes of the group work experience. However, it is also important to mention that the comments and ratings also reflected extreme positioning in both directions as evidenced by the following examples from the post-group questionnaire comments: "Depends who I am working with." and "I really like to work by myself, but when I'm in a group I am able to ask questions [understand]." Thus, the student rating changes on both items #1 and #12 may not provide an accurate evaluation of the effects of the implementation of the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000). The divergence in ratings may be based not only on group composition but also on the identity and personality of a student and what he/she brings as an individual to the group experience. A multitude of factors such as social confidence, academic ability, language proficiency, cultural considerations and gender roles can contribute to the experience of group work. Each individual is unique and many factors shape and determine not only individual experience but also the experience of others in the group. In order to achieve greater insight into how individual characteristics may determine the group experience and the resulting impact on questionnaire ratings, the analysis of the questionnaire ratings of the group of four is considered below.

Exploratory Talk Indicators

In order to look at the changes in the way students talked with one another in small group conversations, audio-recordings were made of students involved in small group discussions both prior to and after the implementation of the *Thinking Together*

program (Dawes, Mercer, & Wegerif, 2000). As described previously, pre- and post-program data of one randomly selected group of four students were compared with respect to the aforementioned indicators of exploratory talk in order to analyze to what extent, if any, student participation changed.

Topics for the pre- and post-program discussion groups were chosen based on the assumption that students would readily engage with the subject matter if the topics were of interest. The pre-program discussion group task and topic involved rating a list of supplies from most desirable to least desirable for survival on a deserted island. Students first devised individual lists and then met in small groups to negotiate one list they could all agree upon. The post-program discussion group task and topic involved creating a constitution for a fictional United Nations Council. Earlier on in the school year, the students had created their own unique nations and developing a constitution had been part of the class assignment. The task was to agree upon the five most important human rights to be followed by all of their nations. While the tasks for both the pre- and post-discussion groups were similar in that they involved reasoning with one another to reach a group consensus, the influence of the topics themselves on generating conversation and effecting results must be recognized. The impact of topic selection is discussed further throughout the presentation of the data.

Reasoning Words

As mentioned in Chapter 3, reasoning words were selected based on research that identified specific words associated with exploratory talk (Mercer, 1991; Soter,

Wilkinson, & Murphy, 2008). Table 17 presents the data for the occurrence of selected reasoning words from both the pre-program and post-program focus group conversations.

Table 17

Comparison of Reasoning Words Associated with Exploratory Talk

Reasoning Words	Group of Four in Pre-Program Discussion	Group of Four in Post-Program Discussion
Speculating/Proposing		
would	28	12
could	33	4
should (I added)	2	23
maybe	8	2
might	0	1
if	12	41
Positioning/Claiming		
I agree	0	27
I think	11	37
I disagree	0	2
Analyzing/Generalizing		
because	14	23
so	37	17
how	1	8
why	4	4

Analysis of the data revealed little difference in total words associated with speculating and proposing when the words were grouped collectively. Eighty-three words were used to speculate or propose in the pre-program conversation and 83 words were used in the post-program conversation. What is of interest is the decrease in the use of the

words “would” and “could” from the pre-program discussion and the post-program discussion. As the table shows, the incidence in the use of “would” decreased by 16 instances and the use of “could” decreased by 29 instances in the post-program conversation. One reason for this result could be topic related. Although both discussion topics were hypothetical in nature and involved a similar task of building consensus, the first topic lent itself more toward shared problem solving. In the following example, the students were on task and engaged in the work of forming agreements. They used “could” and “would” in an effort to clarify with group members what the different materials could be used for.

> Tony: You could put nylon rope, that could like build you stuff for shelter.
> Carl: Yeah, but you’re floating at sea Tony.
> Barb: See, with the, with the umm ... What about the 20 square feet of opaque plastic sheeting?
> Carl: Oh yeah, cause then like you could wrap, you could like cut it, you could rip it and like cut ...
> Tony: ... make shelter (in background).
> Carl: You could make shelter on the little thing and then you could also wrap your food in it so your food stays fresh.
> Barb: Exactly.. O.K. so that’s nine.
> Carl: Yeah, and then like the rope do you think it would be important?
> Barb: Yeah.
> Ellie: Or ...

There was a different quality to the interactions generated in the post-program group discussion. The students were more familiar with the topic and appeared to have more investment in their positions. As an example, the word “should” which is often used to propose and defend opinions, was used 21 more times in the post-program group discussion. In the following excerpt, Tony uses “should” to assert his position.

> Tony: O.K., I think we should have the right for our own religion.
> Barb: O.K.

Tony: Because I don't think we should get forced into one religion because that is sort of not good - racist. Do you agree?

Another word used for speculating and proposing is "if," which increased by 29 incidences in the post-program group conversation. For example, in the post-program group discussion, "if" was often used to draw others in to defend their position.

Tony: O.K., the right to vote cause if you don't get a choice ...
(laughter)
Carl: Yeah, but Tony not every country is a democracy.
Barb: So what if what if my country wasn't democratic. Then what would happen?
Tony: Well my country is democratic.
Barb: So is mine, but I'm just saying ...
Carl: Yeah, but what if, what if there is like a chief leader then they are not ...
Tony: I think the people in my COUNTRY ...
Carl: This isn't about just your country.

The data also showed a marked increase in words used for positioning and claiming. The phrases "I agree," "I think" and "I disagree" collectively increased by 55 instances in the post-group conversation. There were no instances of "I agree" in the pre-program group conversation. In the following example, one can see explicit efforts made by the students during the post-program discussion group to build consensus by ensuring each group member's position was included.

Carl: Tony, we have to all agree with this.
Tony: I agree. I think our group agrees. Do you agree?
Carl: Yes.
Tony: Do you agree?
Barb: Yes.
Tony: Do you agree?
Ellie: Yes.

Although both tasks in the pre- and post-program group conversations involved negotiating together toward a consensus, it is clear that the words used to achieve

consensus were markedly different as is highlighted in the following example from the pre-program group discussion.

> Carl: Well, the two biggest ones it looked like was the food and water.
> Tony: Food and water (spoken at the same time).
> Barb: Yeah.
> Carl: So maybe for our team ranking, what do you think is more important, the food or the water?
> Ellie: Water.
> Tony: Water.
> Barb: Water.

A closer look at the data for the words used to analyze and generalize reveals little difference collectively from the pre- and post-program conversations. What is of interest is the increase in "because" from the pre- to the post-program discussion from 14 to 23 instances. The *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000) supports encouraging students to give reasons to reinforce their points of view. In the following comment, Barb used "because" effectively to give a reason supporting her choice for the right of health care: " ... because if you're poor you can't afford it and then they [people] just like keep dying."

Frequency of Student Participation and Equitability of Turn Taking

Table 18 and Table 19 present the number of talking turns and percentage of participation for each student in both the pre-and post-program discussion groups. The frequency of student participation refers to the number of times each student initiated an incidence of talk (talking turn) during the conversation. These data provided an indication of individual involvement in the discussion and a comparison for equal distribution of conversation. Data analysis of the frequency and equitability of student participation revealed three significant qualities of the group dynamic as well as modest changes to

student contributions following the implementation of the *Thinking Together* program (Dawes, Mercer, & Wegerif 2000).

Table 18

Frequency of Student Participation and Equitability of Turn Taking

Name of Student	Number of Talking Turns in Pre-Program Discussion	Number of Talking Turns in Post-Program Discussion
Carl	180 talking turns = 70/180 = 38.5%	218 talking turns = 80/218 = 36.8%
Tony	180 talking turns = 42/180= 23%	218 talking turns = 62/218 = 28.5%
Barb	180 talking turns = 46/180 = 25.3%	218 talking turns = 50/218 = 23%
Ellie	180 talking turns = 22/180 = 12%	218 talking turns = 26/218 = 12%

Table 19

Equitability of Student Participation

Name of Student	Percentage of Equitability in Pre-Program Discussion	Percentage of Equitability in Post-Program Discussion
Carl	1440 words = 671/1440 = 46.6%	1996 words = 859/1996 = 42.9%
Tony	1440 words = 309/1440 = 21.3%	1996 words = 565/1996 = 28.25%
Barb	1440 words = 309/1440 = 21.3%	1996 words = 365/1996 = 18.25%
Ellie	1440 words = 151/1440 = 10.41%	1996 words = 207/1996 = 10.35%

The first characteristic of the group dynamic evident from the analysis was the overwhelming dominance of Carl who maintained this position in both the pre- and post-program discussion groups. Carl's percentage of talking turns minimally decreased in the post-program discussion group (38.5% to 36.8%). The transcripts revealed that Carl

assumed the position of group leader in both the pre- and post-program discussion groups, and acted as a facilitator in the process of building consensus. Carl's personality as an outspoken, gifted, high-achieving student affected the group dynamic. What was different when comparing his role from the pre-program discussion group to the post-program discussion group was the manner in which he facilitated. While he was focused on task completion in the pre-program conversation, he clearly sought agreement more explicitly in the post-program discussion group. The following excerpt from the post-program discussion illustrates his role in the conversation.

> Ellie: O.K., umm ... the ... I think we should have the right to free speech because like you don't have to believe in one thing ...
> Barb: ... so then you're not just like following one person.
> Ellie: ... yeah, you're not just following one person, you can say what you want and they can't just say like, do this, you can like say ...
> Barb: [You could] say no.
> Ellie: Yeah, yeah.
> Carl: I agree.
> Barb: I agree.
> Carl: ... cause, cause I agree, cause I don't think it's fair, like if you've ever watched any of those like old movies and its like, "Sir, write this speech," and then they talk and then ...
> Tony, Barb, and Ellie (talking in the background at the same time): ... I don't think its fair to go to war. I'll just say that. O.K., yeah ... you should have a ... Yeah (quietly and hard to hear).
> Carl: I agree.
> Tony: O.K., I finally made my ...
> Carl: Tony, do you agree?
> Tony: Yes.
> Carl: Ellie, do you agree?
> Ellie: Yeah.
> Carl: Barb, do you agree?

While others were distracted, Carl kept the group on task and facilitated a consensus.

A second quality recognized within the group dynamic was the increase in both the frequency and equitability of Tony's participation in the post-program discussion group (23% to 28.5%). Tony found his voice within the post-program discussion group and assumed some of the role of facilitation. It was apparent that he struggled to focus in the pre-program discussion often interjecting into the conversation for clarification from others. The following example from the pre-program discussion demonstrates his struggle to keep up with the conversation.

> Tony: What is eight?
> Carl: We're in the Atlantic Ocean.
> Tony: Which one is six?
> Barb: Whatever.
> Ellie: Shark repellant.
> Carl: Yeah, but we're in the Atlantic, yeah.
> Barb: Oh, never mind.
> Tony: Which one is eight?
> Barb: Eight?

Tony's comments were often distracting for and frustrating to the other group members. It is important to mention that Tony experienced some difficulties with learning and in social interactions. As noted earlier, he struggled with organization, distractibility, attention, and impulsivity. These qualities describe an academically and socially marginalized student who could potentially bring an additional challenge to the group dynamic.

The improvement in Tony's participation in the post-program discussion group may be accounted for by the absence of a paper and pencil task in the post-program discussion group. It is important to note that in the pre-program discussion, all of the group members recorded their agreed upon decisions on paper. In the post-program group

discussion, one student (Barb) was selected as the scribe. The writing task in the pre-program discussion may have prevented Tony from fully participating in the conversation and also explain his many interruptions for clarity. The following comment from the post-program discussion group illustrates how Tony privileges written over oral expression.

"Guys, let's not just have conversations. Let's write down stuff."

Perhaps Tony's dependence on this strategy (i.e., recording information on paper) compensates for his organizational difficulties and is the reason for his privileging writing over oral discourse.

Tony's improved participation in the post-program discussion however, cannot be accounted for just in the absence of a paper and pencil task. His contribution to the decision making and consensus building of the post-program group conversation indicated that he made improvements in the frequency of talking turns. The following example illustrates how Tony showed more interest in what others had to say and was more engaged in sharing his own opinion.

> Tony: O.K., I think, I think we should have the right to save animals from abuse because animal abuse is very harsh and I just think we should save them from it.
> Carl: Yeah but this is ...
> Barb: ... save the animals from the oil spills.
> Tony: Save the animals from, well save the animals from anything, the oil spill, or abuse, or the endangered species of different types of animals.
> Carl: I don't really agree.
> Barb: Why not, Carl?
> Tony: Why do you disagree, Carl?
> Carl: I just don't agree cause like, O.K. you can either, you can like save us or you can save everybody else.
> Tony: I think fine, fine, maybe ...
> Carl: Yeah, cause like if you put all your money into saving animals and like there's like some poor ...
> Tony: You don't know, you don't have to pay for it; that's why it's so right.
> Barb: Well, everybody would have to be vegetarian.

> Carl: Yeah, everybody would have to be ...
> Tony: No, I don't mean saving animals from slaughter to eat. I mean saving animals from abuse and oil spills and stuff like that ...

Of the four group members, Tony showed the greatest increase in participation during the program implementation.

The third area of interest revealed by the analysis of data was the lack of relative participation and decrease in equitability of the female members of the group. Within the culture of this particular classroom, males were the more dominant personalities and the females were often quieter and more prone to comply with others. This dynamic played out in both the pre- and post-program discussion groups. An example of how easily Barb was persuaded can be found in the following excerpt from the pre-program discussion group.

> Carl: Yeah, but your ... yeah, it's either the oil or the rum. Do you think, well, you could drink the rum?
> Ellie: Why would you drink it?
> Tony: You could. You could.
> Carl: Yeah, you could.
> Barb: I ...
> Tony: Just if you didn't have any water left or something.
> Barb: Yeah, I would do the oil, I don't know why.
> Carl: You would drink the oil?
> Barb: No, let's do the rum then.

A point of interest is that Barb assumed the role of scribe for the post-program discussion group. While this position may have relieved Tony from that responsibility, and perhaps distraction, it may account for Barb's lack of improved participation in the post-program discussion group. Through the analysis of the data, my own revelation has been the potential impact of gender differences. A further example of the difficulty that the two females had in finding their voices and talking about the issues that are important to them

can be found in Ellie's attempted assertions in the following post-group discussion excerpt.

> Ellie: Or, (pause) umm the right to have as many kids as you want, like ...
> (Barb leaves the room.)
> Carl: Yeah, but is that really, really, really, super, duper important?
> Ellie: No.
> Tony: So that one is out of the question.
> Ellie: If you're going to have eight kids or .... you're not going to .... They can't just say you're going to have kids. Like what if you don't want to have kids?
> Carl: Yeah, but is it that important? Is it going to like save the human race?
> Ellie: No, it's not but ...
> Carl: Yeah, that's what I thought.
> (Barb re-enters the room.)
> Barb: I think we should do one ...
> Ellie: It's not but they can't just say you're going to have three kids or you can have ...
> Carl: But who actually says that?
> Barb: I do. Wait, what is it?
> Carl: O.K., we're talking about, we're talking about ...
> Ellie: We're talking about how many kids you want.
> Carl: Yeah, but is it that important? Like is it gonna be a life or death decision?
> Ellie: No.
> Tony: I don't think so.
> Carl: Unless you get like some infection disease from ...
> Barb: Well, what if someone like ... actually I don't even get this. I'm confused.
> Carl: It's like some person might say you're going to have to have eight kids
> Tony: Yeah.
> Carl: But what if ...
> Tony: I actually don't think that would work really.
> Carl: Yeah, because like ...
> Tony: Cause it doesn't happen anyways.
> Carl: Yeah, it doesn't happen.
> Tony: So.
> Ellie: Yeah.

This example could be interpreted as a gender specific topic that the more dominant males did not relate to. While it may have been appropriate for Carl to challenge Ellie on her thoughts about the topic of child birth, her perceived lack of confidence and

assertiveness may have prevented her from initiating more talking turns and assuming a more active role in the discussion.

Length of Student Utterances

The length of student utterances represents the number of words within each student's talking turn. One could assume that if each student is talking more on average about a subject within a talking turn, then he/she is more engaged and invested in the conversation. Table 20 compares the average length of each student's talking turns (mean level of utterance) from the pre-program discussion group to the post-program discussion group.

Table 20

Mean Length of Student Utterance in Pre- and Post-Program Discussion

Name of Student	Mean Length of Utterance (MLU) in Pre-Program Discussion	Mean Length of Utterance (MLU) in Post-Program Discussion
Carl	671 words / 70 utterances = 9.58 words per utterances	859 words / 80 utterances = 10.73 words per utterance
Tony	309 words / 42 utterances = 7.35 words per utterance	565 words / 62 utterances = 9.11 words per utterance
Barb	309 words / 46 utterances = 6.71 words per utterance	365 words / 50 utterances = 7.3 words per utterance
Ellie	151 words / 22 utterances = 6.86 words per utterance	207 words / 26 utterances = 7.96 words per utterance

The data analysis revealed that each student increased the amount of words spoken within his/her talking turns from pre- to post-program discussion. Consistent with the trends found in the frequency and equitability of participation, the males maintained their verbal dominance. The increase in the length of student responses suggested that the students may have been more engaged in expressing their opinions,

challenging others, and explaining their own thinking. In addition, their investment in the post-program discussion topic may account for the increase in the duration of student responses. Throughout the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000) students were encouraged to give reasons for their thinking, to persuade others, and to challenge their thinking and reasoning when they did not agree. The following example from the post-program discussion presents Carl's elaboration and effective persuasion towards his position. "Also, I think what they should do is, they could have, should have something on TV, like buy some TV advertising space and be like, these are the rules and there are serious consequences ..." Students' efforts to give reasons for decisions and choices required more explanation and therefore longer talking turns.

Actions that Extend Inclusion of Others

Actions that extend inclusion of others involves a perceived invitation offered from a student to the group or an individual to join the discussion. An increase in inclusionary comments would be desirable because one would expect it would result in an increase in equitability of participation. For the purpose of identifying these gestures, a distinction was made between questions that sought clarification of information previously discussed and statements of opinion versus seeking new information, deeper reasoning, and the generation of consensus by including the input of others. While the former were excluded from the data, the latter were included. See Appendix K for the pre-program and post-program group discussion comments respectively. Table 21 shows the comparison of the students' pre-program and post-program inclusionary comments. Table 22 summarizes any individual student change in the use of inclusionary comments.

Table 21

Group Change of Actions that Extend Inclusion of Others

Actions that Extend Inclusion	Pre-Program Discussion	To the Group	To a Student	Post-Program Discussion	To the Group	To a Student
Number of Comments	15	13	2	25	12	13

Table 22

Individual Change of Actions that Extend Inclusion of Others

Student	Pre-Program Discussion	To the Group	To the Student	Post-Program Discussion	To the Group	To the Student
Carl	9	8	1	10	4	6
Tony	1	1	0	7	2	5
Barb	3	3	0	6	4	2
Ellie	2	1	1	2	2	0

Analysis of the data revealed three primary findings. Firstly, the amount of inclusionary comments collectively increased by 10 in the post-program group discussion. Interestingly, the type of comment directed at inclusion in the pre-program discussion group appeared to be focused more on information gathering and task completion rather than inclusion of others as is demonstrated in the following comment by Carl: “So maybe for our team ranking, what do you think is more important, the food or the water?”

With respect to inclusionary comments explicitly directed at specific individuals, the post-program discussion group increased these comments from 2 to 13. This result may be due to the students’ attempts to work together and ensure that the thoughts and

opinions of all group members were included. There was also further evidence of a deliberate attempt to confirm consensus through the consideration of others as is evident in the following example.

> Carl: The [most important] right is the right for free education because if you have free education then it goes, you get educated about birth control and it helps you to get a base for a job and yeah, O.K. so who agrees?
> Tony: I agree ... I think our group ...

The second finding that is noteworthy is the improvement Tony made in the number of inclusionary comments offered from the pre-program group conversation compared to the post-program group discussion. While Tony made one inclusionary comment to the group as a whole in the pre-program discussion, he made two to the whole group and five to specific individuals in the post-program discussion. This improvement may be the result of Tony's increased awareness of the importance of the process of building group consensus and ensuring the participation of all group members. Barb and Carl also increased the number of inclusionary comments articulated during the post-program discussion while Ellie showed no change from the pre-program group discussion. As stated earlier, one would assume that with an increase of inclusionary talk, more equitability of individual participation would result. While improvements were made in the number of inclusionary comments offered in the post-program discussion, the equitability of participation did not increase among the female members of the group (see Table 19). Although the number of inclusionary comments directed at seeking new information, deeper thinking, and the generation of consensus increased in the post-program discussion, it could be speculated that the types of inclusionary comments directed at the female members of the group were more focused on consensus building

and task completion rather than responses that offered them more opportunities for elaboration and deeper reasoning. In a closer analysis of inclusionary comments directed at Ellie, the following two excerpts demonstrate Carl and Tony trying to build consensus by including Ellie but the boys do not extend a real interest in her thinking.

Carl: Ellie, do you agree?
Tony: Ellie, do you agree? Just agree.

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The third point of interest is the limitation of transcribing audio recordings where many of the implied non-verbal forms of communication are missed. For instance, one cannot see if questions are posed directly to one person through eye contact and body language or to the group as a whole. Many gestures invoke a message of invitation such as a hand extended or the intentionally-timed shrug of the shoulders. Despite this limitation, it is apparent in the verbal exchange captured on the audio recordings that the students made more explicit efforts to draw individuals and/or the group into the conversations in the post-program discussions.

Thus, the data analysis of the pre- and post-program discussions of the group of four suggested that topic may have influenced the frequency of words used to speculate and propose. The findings also revealed modest changes made in the frequency of talking turns and overall equitability. Talking turns increased for all four group participants while equitability improved for only the two males. Gender roles were considered as possible contributing factors as were individual characteristics that affected the group dynamic. Data analysis for the length of student utterances indicated that all four members talked longer when they had the opportunity to share their ideas. It was speculated that students' efforts to give reasons for decisions and choices (thinking) may have affected the increase

in the amount of words used in each talking turn. Topic engagement was discussed as a potential reason for the increase in words spoken. The analysis of the data for inclusionary comments revealed an increase in the amount of questions and statements students used to draw other group members into the discussion. Efforts to build consensus by addressing specific group members increased noticeably**.**

The Group of Four Pre- and Post-Program Questionnaire Ratings

The value of looking at the individual group of four rating changes in their perceptions of group work is to investigate whether the changes made in their use of exploratory talk corresponded with any changes in attitude. For the purpose of this analysis, results are discussed based on the questionnaire ratings that changed in either a positive or negative direction two levels or greater. The individual comparison of pre- and post-questionnaires are presented in the same order as in the data analysis of exploratory talk indicators: Carl, Tony, Barb, and Ellie.

Carl.

Carl's post-program questionnaire ratings revealed a positive change in his thinking about the value of talk in small group discussions. Table 23 presents the ratings from both the pre- and post-program questionnaires as well as the rating change differential.

Table 23

A Comparison of Carl's Pre- and Post-Program Questionnaire Ratings

Item	Pre-Program Questionnaire	Post-Program Questionnaire	Differential
#1	3	5	+2
#2	1	1	0
#3	1	1	0
#4	2	1	+1
#5	2	2	0
#6	2	4	+2
#7	2	2	0
#8	3	3	0
#9	3	2	+1
#10	1	1	0
#11	2	1	+1
#12	**3**	**1**	+2
#13	1	2	-1
#14	1	1	0
#15	4	2	-2

Carl's ratings changed in a positive direction for 6 of the 15 statements, and of those, 3 were rated two levels higher after the post-program questionnaire. While Carl's ratings did not change on seven of the statements, his ratings changed in a negative direction on two of the items. For the purpose of this analysis, the statements that moved two levels or above are considered below.

Item 1, "I think better on my own rather than others in a group." as was discussed earlier, was the most controversial statement as evidenced by the high number of

comments and rating changes in both directions. For Carl, his change in attitude moved in a positive direction (from neither agree nor disagree to strongly disagree). On the pre-program questionnaire, he stated, “I think it’s even for me.” and on the post-program questionnaire, he commented, “I definitely don’t.” It seems that Carl’s experiences in the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000) increased his appreciation of learning from others. This change in attitude was evident in the way that he sought clarification from others and worked with the group to scaffold ideas. In the following example, the group members build on Ellie’s idea of the right to choose a marriage partner, which leads to a statement against racism and sexism.

> Barb: Oh, no, I don’t. What about the right to ...
> Ellie: marry who you want?
> Carl: Yeah, but is it life or death?
> Tony: The right to marry anybody? No. The right to marry any race?
> Carl: No, race ... No, race or sexism cause like that causes big wars.
> Barb: Don’t be racist.
> Carl: No or sexist because if I came up to like this black ... if I came up to an African American woman and (I said), “Women can’t do anything and you’re black,” and then like what if they started a war?
> Tony: That would start a war... that’s really harsh.

The second item where Carl made a significant shift in a positive direction (from agree to disagree) was statement #6, “In my experiences with small group discussions, a few students do most of the talking.” In the pre-program questionnaire, Carl wrote, “ .... it depends who you are working with.” and on the post-program questionnaire, he commented, “Sometimes one person doesn’t talk.” Carl’s post-program comments and ratings may have been a reflection of his experience in his group of four. He made improvements in his efforts to include others (see Table 20) and his dominance in the

conversation slightly decreased, however, he also appeared to attribute the lack of a more equitable group to the personality of others or group composition.

The final item where Carl changed his opinion, but in a negative direction, (from disagree to agree) was statement #15, "When I am involved in small group discussions, we spend too much time talking about other things." Carl wrote no comments on the pre-program questionnaire to support his rating, but on the post-program questionnaire he wrote, "In some groups this happens but in others it doesn't." Carl's change in thinking may have been affected by his group experiences during the program implementation. More than any other group member, Carl was the most focused on task completion and was committed to the work as facilitator. It is my belief that as a gifted, high achieving student, Carl understood and made efforts to apply the guidelines of exploratory talk, but at the same time faced the reality of the challenges of working with others.

Tony.

Tony's ratings are discussed for only the post-program questionnaire as he did not complete a pre-program questionnaire. The lack of a completed pre-program questionnaire is a reflection of who Tony is as a student and the reality of classroom life. While his ratings were not included in any of the earlier data there is value in looking at Tony's individual perceptions upon completion of the program. As is evident in Table 24, Tony's post-program questionnaire ratings revealed a positive attitude toward the value of talk in small group discussions.

Table 24

Tony's Post-Program Questionnaire Ratings

Item	Post-Program Questionnaire Rating
#1	4
#2	2
#3	2
#4	2
#5	3
#6	2
#7	1
#8	2
#9	2
#10	3
#11	4
#12	2
#13	-
#14	2
#15	2

Note.
- = No data reported

Tony's responses on the post-program questionnaire were positive for 12 of the 15 statements indicating recognition of the value of the process of working with others. The only rating that was in the strongly agree category (1 or 5) was item #7, "In small group discussions, it is important to change my mind if new ideas change my thinking." This behavior is evident in the following conversation and throughout the post-program discussion transcript.

> Tony: Well, I did my country on Humbyville and I think we should have the right not to kill people because ...
> Carl: But no, but that's kind of just a wants of a country, right? It's not really up there. It's more like it's about rights like the right
> Tony: O.K., the right to vote cause if you don't get a choice ...

In this interaction Tony was willing to change his mind and go on to generate other ideas for the group to consider. This behavior is an accurate reflection of his personality, where he frequently moves from thought to thought, and struggles at times to focus.

There were no ratings in the strongly disagree category, however for item # 11, "In small group discussions, my ideas are listened to and important to others.", Tony's rating was in a negative direction (disagree), indicating he believes that his ideas are not listened to. In reviewing the transcripts, Tony's perception is warranted. Tony was quick to generate many ideas but was rarely willing to assert his reasoning when faced with a challenge from another group member. It would appear that his impulsivity contributed to the lack of commitment in persuasion or deeper reasoning. An exception can be seen in the following example when Tony takes a stand to argue for the protection of animal rights. "No, I don't mean saving animals from slaughter to eat, I mean saving animals from abuse and oil spills and stuff like that ... ." It seemed that when Tony's belief in an issue appeared to be more meaningful to him, he was more willing to argue or defend his position through clarification and by persuasion. More than any other participant in the group of four, Tony was the most distracted and the most distracting group member. However, he was very engaged in the post-program conversation, contributing many ideas and being flexible to support consensus building.

Barb.

Barb's post-program questionnaire ratings also revealed a positive change in her thinking about the value of talk in small group discussions. Table 25 presents the ratings from both the pre- and post-program questionnaires as well as the rating change differential.

Table 25

A Comparison of Barb's Pre- and Post-Program Questionnaire Ratings

Item	Pre-Program Questionnaire	Post-Program Questionnaire	Differential
#1	3	3	0
#2	1	2	-1
#3	3	2	+1
#4	2	2	0
#5	4	3	+1
#6	1	2	+1
#7	1	2	-1
#8	1	1	0
#9	2	2	0
#10	1	1	0
#11	3	3	0
#12	4	2	+2
#13	4	2	+2
#14	1	2	-1
#15	3	3	0

For 5 of the 15 statements, Barb's ratings changed in a positive direction, and of those items, two were rated two levels higher after the post-program questionnaire. While Barb's ratings did not change for seven of the questions, her ratings did change in a negative direction on three of the items but none two levels or greater. For the purpose of this analysis, the two items that moved two levels are discussed further. As was described previously, statement #12, "The work produced in small groups is usually better than what an individual can create on his/her own." was the item that received an equal amount of rating changes in both directions. For Barb, her change in attitude moved in a positive direction, from disagree to agree. On her pre-program questionnaire she wrote, "I think one person can come up with as good of an idea as a group." indicating the value she placed on individual effort. Barb did not offer a written comment to support her rating choice on the post-program questionnaire.

Barb's rating on item #13, "Expressing my ideas out loud helps me to think better on my own." also changed by two levels or higher, from disagree to agree. She did not include any written comments on either questionnaire to support her rating choices for this statement. When reading the transcribed conversations, there is little evidence to support Barb talking more in the post-program discussion than in the pre-program discussion (see Tables 18 and 19). Given the positive changes on her questionnaire for this item, and the lack of evidence to support change in the indicators of exploratory talk, one could speculate that Barb's role as scribe in the post-program discussion may have limited her participation.

Ellie.

Unlike Carl and Barb, Ellie's post-program questionnaire ratings revealed a negative change in her thinking about the value of talk in small group discussions. Table 26 presents the ratings from both the pre- and post-program questionnaires as well as the rating change differential.

Table 26

A Comparison of Ellie's Pre- and Post-Program Questionnaire Ratings

Item	Pre-Program Questionnaire	Post-Program Questionnaire	Differential
#1	3	2	-1
#2	3	2	+1
#3	3	4	-1
#4	3	3	0
#5	2	4	-2
#6	2	2	0
#7	2	2	0
#8	3	4	-1
#9	4	3	+1
#10	2	2	0
#11	1	2	-1
#12	2	2	0
#13	4	4	0
#14	2	2	0
#15	4	4	0

For 2 of the 15 items, Ellie's ratings changed in a positive direction, and of those items, none were rated two levels higher after the post-program questionnaire. While

Ellie's ratings did not change on eight of the statements, her ratings changed in a negative direction on five of the statements, and of those, one rating change was two levels or higher on the post-program questionnaire. For item #5, "In small groups, I often suggest ideas.", Ellie's rating moved in a negative direction from agree to disagree. This perception accurately reflected the transcribed interactions of the post-group discussion. Of the four students, Ellie showed the least amount of participation or change in valuing the benefits of talk during group discussions (see Tables 18 and 19). Given the lack of change on her questionnaire (on eight items), as well as the absence of evidence to support change in the indicators of exploratory talk, one could speculate that Ellie's social discomfort, particularly with this group composition, may have interfered with her apparent ability to benefit from the program implementation.

Analyzing the changes in students' perceptions of group work revealed changes in their awareness of and appreciation for conversations with others. In comparing the pre- and post-program discussions, the group members' ratings and comments generally corresponded with the changes apparent in their actions and behaviours. What the questionnaire is able to confirm is that when students describe a more positive attitude towards group participation, they are more likely to engage more in the features of exploratory talk. Furthermore, if a student values group work then he/she is more likely to engage with others, and is more likely to share his/her thoughts and opinions as well as listen to and learn from other perspectives.

Chapter Summary

The data analysis of the pre- and post-program questionnaire ratings for the 19 members of the class who gave consent and completed both questionnaires indicated an improved attitude towards the value of group discussion. Particular themes were identified in the students' written comments on the questionnaires that gave further insight into their perspectives on working with others. A large number of student comments were categorized into the themes of group composition, collaboration, and topic selection. In addition, positive rating changes occurred in students' thinking towards challenging others, including others, offering reasons for opinions, and being open to change one's thinking. A focused look at the questionnaire ratings by the group of four revealed a correspondence between their attitudes and the behaviors they displayed during their discussions.

In Chapter 5 I interpret my findings and relate them to the literature discussed in Chapter 2. Further consideration is given to the relationship between the themes and the questionnaire ratings. Chapter 5 also includes implications for teaching, personal reflections, and suggestions for future research.

CHAPTER 5

CONCLUSION

Overview of the Findings

This study aimed to examine the effectiveness of the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000) to develop talking skills and explore its impact on the attitudes of students towards group work. The sources of data collected and analyzed during this study suggested that the implementation of the *Thinking Together* program was effective in assisting students' use of and appreciation for exploratory talk. A portion of the research was a case study involving a group of four Grade 6 students in my classroom who represented a sample of the class. The entire class participated in the program implementation as well as completing pre- and post-program questionnaires rating their attitudes towards group work.

This chapter provides an interpretation and discussion of the findings, suggests implications for teaching, makes recommendations for future research, and offers a final personal reflection.

Interpretation and Discussion of the Findings

Students' Perceived Value of Participation in Small Group Discussions

The data that indicated changes in the students' attitudes toward participation in small group conversations were provided by the pre- and post-program questionnaire ratings and written comments. The analysis of these data helped to answer the following question: "What is the change, if any, in the students' perceived value of participation in group discussions?" Evidence from the data analysis of the pre-and post-program

questionnaires revealed an improved attitude toward the value of participation in group discussions. The most significant positive rating changes were noted in the following four areas: challenging others, being open to changing one's thinking, including others, and offering reasons for opinions.

Table 16 revealed that students valued the importance of challenging others when they do not agree based on the high number of positive rating changes for item #4. The following student comment reflected an awareness that challenging one another is an essential component of collaboration. "Isn't that the point about group work? You can't just sit there and agree about everything." This finding is consistent with Parsons's (2009) research that found that disagreement and respect for differing viewpoints were essential in her students' construction of knowledge. Table 16 also revealed that students valued being open to changing one's thinking more after the implementation of the program, based on their positive responses for item #7. A small number of student comments on the theme of collaboration indicated an awareness of the importance of changing one's mind when new ideas change one's thinking. A third area where students changed their attitudes in a positive direction was in the area of equitability. Table 16 revealed that students valued including others in small group discussions more after the program implementation, based on the positive rating changes for item #8. The final area where students made significant positive rating changes was in offering reasons for opinions. Table 16 revealed the positive rating changes students made in response to item #9.

Evidence from the data analysis of the pre- and post-program questionnaires also indicated a marginal increase in negativity toward the value of participation in small

group discussions. The one rating change that moved two levels or more in a negative direction was noted in item #12, "The work produced in small groups is usually better than what an individual can create on his/her own." Table 16 revealed that the negative rating changes were equally matched with positive rating changes for this item. Student comments indicated that group composition and personal autonomy may be factors that affect participation in small group discussion.

As discussed in Chapter 4, the student comments were categorized into themes to gain further insight into the student ratings. The following ten themes were identified: group composition, collaboration, social discomfort, ambivalence, topic selection, affective positions, inequality, personal autonomy, equitability, and justification. Many student comments on the questionnaires focused on the positive effects of collaboration. Both topic selection and group composition were also identified as contributing factors in influencing group discussion participation.

The Development of a Community of Inquiry

The theoretical framework of this study is based on the views of social constructivism, that knowledge and meaning are socially constructed with others within a contextual environment. Vygotsky (1978) placed strong emphasis on the importance of culture and social interaction in accounting for individual development and suggested that using language to communicate helps in the development of new ways of thinking. The *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000) provided a framework to assist students to work together through conversations with one another. The analysis of their questionnaire comments and ratings revealed themes that influenced

their ability to collaborate together. Further insight into the development of a community of inquiry within our classroom is offered through a deeper reflection on the themes of collaboration, topic selection, and group composition.

Collaboration.

Bakhtin (1981) claimed that the combined action of listening to others' perspectives and responding to those perspectives is the foundation for developing new understanding and is referred to as dialogic discourse. Throughout the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000) students developed and followed a set of ground rules that encouraged exploratory talk in small group discussions. As with dialogic talk, individuals are encouraged to work together toward the construction of the best collective response. The ground rules prompted students to relate to each other as participants who listen to each other, build onto ideas, ask questions, challenge, and give reasons for their thinking. Watkins (2005) suggests that dialogic practices underpin the establishment of a community of inquirers. The ground rules laid the foundation for a community of inquiry within our classroom that encouraged effective student collaboration. Data analysis confirmed that the focus students' use of exploratory talk increased as did their participation in and appreciation for the work created collectively as a group. Wegerif (2006) suggested that children benefit when "we teach students how to engage in the dialogue through which knowledge is constantly being constructed, deconstructed, and reconstructed" (p. 59). Overall, the students understood the personal benefits of working together with others, based on the high number of comments related to the positive effects of collaboration on their pre- and post-program questionnaires.

Topic selection.

Dewey (1938) argued that in order for students to engage with a topic, it must be of interest to them and it must present problems or inspire questions that will motivate them to explore further. Topic selection was a common theme discussed throughout the findings in relation to the study's main questions. As well as putting ground rules for talk into practice, topic engagement helped to explain differences in word choice, increases in words spoken and length of utterances by students in the post-discussion group. Topic selection also emerged as a theme from the students' questionnaire comments that affected students' experiences and participation in group discussions. Engagement in this sense meant that they were more familiar with the topic and displayed more interest in listening to each other's ideas as well as expressing their own opinions. When students are interested in the subject matter they will be more inclined to participate in conversations.

As discussed in Chapter 2, inquiry-based learning is an approach based on an emergent curriculum that evolves out of conversations and discussions arising from topics under investigation (Harste, 2003; Wells, 2001). Although inquiry was not used used within the first 12 lessons of the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000), this approach to learning was supported within the final four lessons of the study and across the curriculum throughout the year. This final aspect of the program implementation was not included in the data analysis. However, it is worth describing here because of its relevance to topic selection, student engagement, group composition, and the basis for inquiry-based learning.

The influence of topic on student attitude and participation was clearly evident when students formed their own groups based on topics identified in their program groups of three. New discussion groups were created based on students' interest in topics that identified global issues of importance (poverty, environment, medical care, animal rights, education). These topics were identified by comparing the responses from all of the groups of three and distinguishing the most commonly occurring ideas. These issues were written on poster paper and taped onto the classroom walls. Students were asked to stand by the issue that was of the most interest to them and groups were formed accordingly. In essence, this process of topic selection was used to establish group composition. Two groups, medical care and animal rights, had to be divided into two as the number of students were too great for one group. Along with other activities (see Unit of Instruction in Chapter 3) students were asked to devise an action plan to address one aspect of their selected global issue. In newly formed groups, students explored solutions for their issue and devised an action plan that could realistically be implemented by the members of their group. It was believed that by moving from the exploration of global issues and themes to individual action plans, it would help to make the students' learning more personal and meaningful.

Wells (2001) believes that a key feature in making inquiry-based learning relevant for students is the construction of a tangible artifact or 'improvable object' that serves as a record of what has been collectively explored. The newly formed topic-based groups worked on their action plans over the course of several classes toward the end of the school year. The small group conversations involved taking a global issue and breaking it

down into several smaller sub-sections using the metaphor of a tree to guide their process, from the roots (causes), to the trunk (larger issue), to the branches (smaller sub-sections). From one of these sub-sections, a smaller issue was identified and used to develop an action plan. Some samples of the students' improvable objects were:

- "Iced Tea Saves Lives" - The group consisted of four female members. Their campaign involved selling iced tea at recess and lunch periods to students and staff at the school to raise funds for the S.P.C.A. animal shelter.
- "Kool-Aid for Medical Aid" - The group members consisted of two males and one female. Their campaign involved selling cookies and kool-aid at recess and lunch periods to the students and staff at the school. All funds raised were donated to the Red Cross to support relief efforts in Haiti.
- "Needy Families in Africa" - This group consisted of two girls whose campaign involved selling freezies to the students and staff at recess and lunch periods. Through World Vision, the students used their funds to purchase a goat as well as make a one time contribution to a child's education.
- "Carpools are Cool" - The three boys in this group created and wore placards that raised awareness about the importance of carpooling. The students wore their placards at the school turn-around during the busiest drop-off period of time (8:15 a.m. - 8:45 a.m.) on one school day.

Another group created a petition to raise awareness about the plight of animals used for shark bait (3 girls and 1 boy). A group of three boys designed a presentation for another intermediate class on the imbalance of adequate medical care in the world.

The students' engagement with their chosen topics was evident in the manner in which they took responsibility for their action plan implementation. Each group involved in a fundraising initiative was self-sufficient in their efforts to speak to the administration about their plans, organize announcements, create, photocopy, and distribute flyers, gather materials, conduct sales, count money, and make arrangements to have the money distributed appropriately (school secretary). What was evident in this process was that it embodied integration across the curriculum through a topic broad enough to provide interest and engagement for all learners. Like Moran, Kornhaber, and Gardner (2006), I found that designing group learning experiences that offer multiple points of entry assists students to learn along several dimensions at once – socially, spatially, kinesthetically, etc. In addition, by structuring lessons to encourage collaboration, students learned more by accessing each other's strengths.

All of the group members were well focussed on their work and motivated to develop actions plans for their chosen issues. Even though data were not collected or analyzed for these topic-based groups, it was evident that the students were highly engaged, worked very well together, and took complete ownership over their learning. What I witnessed was the fulfillment of the promise of the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000). The program laid the foundation for a community of inquiry within our classroom. Students were actively developing the necessary skills to talk with one another by reasoning together in the co-construction of learning. Like Wells (2001) and Peck (2010), I found that through inquiry when students are trusted to be

interested in things worth knowing about, they will work together to explore shared interests.

Group composition.

The effect of group composition was considered in respect to its influence on the group of four students throughout the program implementation, in students' ratings on the pre- and post-program questionnaires and, its impact on the formation of the topic-based groups discussed above. The dynamic of the group of four was discussed in the analysis as a factor that affected participation and influenced attitude. According to Lewis (1997) and Evans (1996, 2002), the personalities of group members greatly influence the group experience and engagement of the participants.

In the case of the group of four, Carl, the gifted, high achieving student assumed a role of group leader and facilitator of task completion. Although he maintained a dominant presence throughout the discussions, he did increase his use of exploratory talk through the use of the ground rules. Carl made more inclusionary comments, sought consensus, increased the amount of words per utterance and slightly increased his equitability. In addition, Carl's post-program ratings were generally positive toward the value of group discussions.

Tony, the student who was impulsive and distracted, and struggled with organization, showed the most improvement over the course of the program in his increased use of exploratory talk. In contrast to the pre-program discussion, Tony increased the number of words spoken, the number of talking turns, and the length of utterances. He offered more ideas, was open to changing his mind and made attempts to

collaborate with group members throughout the post-program discussion. What is also of interest is that Tony's increased participation may also be partially explained by the absence of a paper and pencil task for him in the post-program discussion. While it is difficult to draw any conclusions about Tony's change in attitude without the pre-program questionnaire ratings, it is clear from the transcripts and post-program ratings that Tony benefitted from participating in the implementation of the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000).

Barb, an academically strong and quiet spoken student, showed marginal improvements over the course of the program in the use of exploratory talk. However, her questionnaire ratings were more positive than her behavior would have indicated. It can be assumed that the experiences Barb had within and throughout the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000) implementation influenced her positive attitude toward the value of group work. It was speculated that Barb's role as scribe in the post-program discussion group may have limited her participation in the conversation.

Ellie, an academically average and socially withdrawn student, was the least active participant in both the pre-program and post-program discussion groups. She showed slight improvements in the use of exploratory talk in the areas of length of utterance and frequency of talking turns. However, she decreased participation in terms of equitability and made no improvements in using inclusionary comments. Her questionnaire ratings were also marginally negative. What remains unclear, is the extent to which the results had to do with who she is, who she worked with, or whether it was the program implementation itself that did not meet her needs. Given the strength of the

evidence for the effectiveness of the program, it is more likely that the results reflect an unique individual within a particular group experience. Ellie's lack of social confidence may have interfered with her ability to assert her voice into the discussions.

Although the authors of the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000) do not address how gender may/can effect the implementation of the program, analysis of the focus group data revealed some differences with respect to gender. Given that both Ellie and Barb participated less in both group discussions than their male counterparts, gender roles were considered as possible contributing factors in the group dynamic. Ellie in particular seemed to be silenced into submission when she brought up topics that were not of interest to the male group members (the right to marry who you want and the right to have as many children as you want, or not). Unfortunately she was not able to assert her position by providing reasons for her opinions and seemed resigned to accept her dismissal. Research by Creese et al. (2004) and Evans (2002) found that gender influenced how individuals participated in and experienced group discussions.

While the reality of gender differences may be worthy of further investigation, it is also important to consider other individual characteristics that may influence participation in group discussions. Upon listening to the audio-taped conversations of the other pre-and post-program groups, it was also evident that some girls were more dominant in the discussions. In Ellie's case, she is shy and not an assertive or vocal person. At the time, she appeared to be comfortable passively participating in all aspects of school life. A point of interest was noted when reviewing her questionnaire rating

changes, of the two questionnaire items where Ellie's ratings moved in a positive direction, one was #2, "I like group work."

It is interesting that in the topic-based groups discussed earlier, Carl, Barb and Ellie all chose topics of interest that coincidentally led to same gender groupings (Tony did not work in a group as he was absent from school for much of the planning and implementation due to a bicycle accident). The formation of these groups may have been based less on topics of interest and more on social comfort. Ellie chose to work in a group of four females who were students who were all very task-oriented and well-focused. Barb chose to work with one other female, her best and only friend. Carl chose to work in a group with two other boys who were both strong academic students. It is my belief that when students are given the option, they will often gravitate towards peers with whom they are the most familiar and socially comfortable. Group composition, topic selection and social comfort are all clearly interrelated within the context of classroom dynamics. It is revealing that the largest number of student questionnaire comments were categorized under the theme of group composition, and may have the greatest influence on participation in group discussions. A concluding comment about Ellie is that even in her topic-based group (or was it a group-composition-based-group?) of same gender members, I observed that she remained in a subsidiary and supportive position to her peers throughout the process.

Thus, the *Thinking Together* program (Dawes, Mercer, Wegerif, 2000) may not have the same effect on every student and adjustments may need to be made within the program implementation to meet the needs of all students. A closer look at the

questionnaire ratings by the focus group of four students revealed a correspondence between the students' attitudes and the behaviors they displayed during their discussions.

Exploratory Talk Indicators

The data that indicated changes or growth in the focus group of four students' use of the features of exploratory talk were the pre- and post-program discussion group transcripts. The analysis of the data helped to answer the following two research questions: "Do students use more features of exploratory talk in their classroom discussion groups following the implementation of the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000) and, if so, in what ways?" and "How does the implementation of the *Thinking Together* program effect student participation in discussions?"

Reasoning words.

Similar to Mercer and Wegerif's (1999) research findings, evidence from this study's data analysis supports students using more features of exploratory talk after the implementation of the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000). Although in the post-program conversation the group of four showed little difference in the number of words they used to speculate and propose, a marked increased was noted in the use of "should" and "if." "Should" was found to be used by group members to propose and defend their opinions and "if" was generally used as a means to draw other group members in to argue their positions. The group of four members also showed a marked increase in words used for positioning and claiming such as, "I agree" "I think" and "I disagree." The students used these words explicitly in an effort to build consensus

by ensuring each group member's position was included. Although little difference was revealed in the amount of words the students used to analyze and generalize, a marginal increase was noted in the use of "because." In the post-program discussion, students' use of "because" was often related to giving reasons that supported their points of view. These findings were also consistent with Parson's (2009) research that found in discussions, students repeated each other's thoughts, built upon and contested ideas, and moved toward consensus.

Frequency of participation and equitability of turn taking.

Data analysis revealed that after the implementation of the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000), all students in the group of four improved their frequency of participation through an increased number of talking turns. However, the equitability of student participation decreased for both Ellie and Barb, the two female members. Potential gender differences were discussed as possible contributing factors. This finding contradicts Wegerif, Linares, Perez and Rojas-Drummond's (2005) research that revealed girls in mixed-gender groups may be empowered after the implementation of the *Thinking Together* program. Individual personalities within the group of four were also discussed as contributing factors that may or may not have affected results. Carl maintained his dominant position of facilitator within the group and marginally increased his equitability in the post-program discussion. Tony showed the most significant increase in both talking turns and equitability of participation. This latter finding is consistent with the research by Wegerif, Mercer, Littleton Rowe, and Dawes

(2004) that found that the *Thinking Together* program significantly improved the inclusion of potentially marginalized children.

Length of student utterances.

Throughout the implementation of the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000), students were encouraged to give reasons for their thinking, to persuade others, and to challenge their thinking and reasoning when they did not agree. The data analysis revealed that each student in the group of four increased the number of words spoken in his/her talking turns from the pre- to post-program discussion groups. The increase in the length of utterances was attributed to students' efforts to give reasons for decisions and choices which required more explanation and therefore longer talking turns. These findings are consistent with Reninger and Rehark's (2009) study which found that students were more able to sustain on-topic discussions after being taught a framework for Exploratory Talk.

Actions that extend inclusion of others.

The data analysis revealed that more inclusionary comments were offered by the group of four in the post-program discussion group when compared with the pre-program discussion group. In addition, more comments were directed at specific individuals rather than to the group as a whole. Carl, Tony, and Barb all individually increased the number of inclusionary comments they made in the post-program discussion. Ellie articulated the same number of comments in both discussion groups. A difference was also noted in the intent of the inclusionary comments. In the pre-program discussion group, inclusionary

comments appeared to be more focused on information gathering and task completion, whereas in the post-program group, comments were more related to building consensus.

Implications for Teaching

This study indicated that the explicit teaching of a framework for Exploratory Talk can help students use more features of exploratory talk, increase participation, and improve attitudes toward group discussions. These overall findings provide me with a rationale for including the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000) in my ongoing classroom instruction. The explicit teaching of the framework for Exploratory Talk provides a foundation for developing a community of inquiry within my classroom in which all students can pursue topics of interest in collaboration with others.

For the purpose of this study, I taught 11 lessons from the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000) and an additional 5 lessons integrated with the social studies curriculum. In the future, I would teach the program up to and including lesson #6, when the ground rules for talk have been established and the students have participated in a few lessons to practice using them. The lessons beyond lesson #6 provide further opportunities to practice the ground rules but are based on themes that may or may not connect to or engage student interest. By teaching the first six lessons, students will be provided with a framework of how to talk with one another but then would be able to transition sooner into inquiries that reflect their own interests. In addition, although I would continue to keep the same group of three students for the implementation of the first six lessons, I would then have students establish their own groups based on shared interests for inquiry-based learning projects. It is important to note that while topic selected groups are beneficial for student engagement and

motivation, teacher composed groups are also effective to ensure a balance of participation based on ability and compatibility. Situational circumstances would influence the teacher's approach to group composition.

Each lesson in the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000) provides a task for the small groups to focus discussion. These tasks generally involve worksheets that require written responses to represent the ideas and conclusions of the group As discussed previously, the data analysis revealed that paper and pencil tasks may have affected the participation of both Barb and Tony. In the future, I would present talking points on paper to guide the discussion but not distribute any worksheets until afterwards. The actual recording of ideas and conclusions generated would be left to the individual group members upon completion of the small group conversation. It is my belief that the written record is a useful means to maintain accountability and at the same time monitor individual progress. In this way, it is believed that students may be less distracted, and more able to implement the ground rules for the small group discussion, thus increasing the equitability of participation.

For the purpose of the study, I developed a questionnaire to evaluate if and how students' perceived value of participation in group discussions changed over the course of the program implementation. In the future, I would use the questionnaire again as an assessment for learning tool where students' attitudes toward group discussions could be revealed. This recognition would be particularly useful in helping to identify specific circumstances that could make group participation more difficult for some students such as social discomfort, group composition, or topic selection. I would also return the initial questionnaire to the students at the end of the year and ask them to rate their attitudes

again. Students may be able to use the pre-program questionnaire as a more accurate reference for their perceived changes in attitude over time. It may also be helpful to look closer at the questionnaire itself to evaluate the purpose for each item for redundancy and clarity. As in items #1 and #12 which may be exploring the same theme based on the similarity of the students' ratings and comments. Further, a shorter version of the questionnaire may be more effective in engaging the students' attention.

My role as the classroom teacher, among other things, was to facilitate the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000) implementation for the purpose of this research. As previously discussed, the added element of audio-taped conversations meant that students were located in a variety of spaces throughout the school. As a result, I found it difficult to support each student within his/her small group discussion experience. In the future, I would have the students in closer proximity and make better attempts to facilitate the group conversations by making informal assessments of the children's discussions. Reninger and Rehark (2009) suggest evidence for these assessments could include looking for: eye contact between students, the kinds of questions asked ("thick vs. "thin"), the length of responses, details students use to support their thinking, chains of reasons, number of consecutive turns, number of teacher turns, and the number of interruptions (p. 277). Mercer (1995) describes the teacher's role as a discourse guide, and views the teacher as someone who scaffolds the development of their students use of language. The teacher's role as co-inquirer within this process should also be recognized. It is important for teachers to allow their students to be themselves, to be creative, and at times playful. As one student aptly wrote, "We are kids." As teachers, we need to be cautious of suppressing students' natural expression and

exploration in the name of classroom management. In listening to and transcribing the conversations of the group of four students, it was apparent that their interactions could have at times been viewed as inappropriate (see Appendix M, pp. 239-240). They were in fact rarely off topic and adult interjection and limits may have confined their freedom of exploration. Wegerif (2005) proposes playful talk as a fourth type of talk, along with disputational, cumulative and exploratory. He describes playful talk as appreciating the importance of creativity to the process of thinking together. In addition, students' enjoyment of each other and their group experience can motivate participation further.

As mentioned earlier, both the primary and intermediate *Thinking Together* programs (Dawes, Mercer, & Wegerif, 2000) were purchased by the principal for the teachers at our school. It was hoped that the teachers who already used small group discussions as a structure for learning would include the program in their educational practice. The merits of the program were discussed at one staff meeting and its potential to help students see themselves as participants in group discussions who ask questions, give reasons, build on each other's thoughts, and challenge ideas. In this way, the community of inquiry is supported to reach past each classroom and extend into the broader school setting. At this time, it has been left up to the individual teachers whether or not to use the program in their classroom practice.

Recommendations for Future Research

Future research could further investigate the effects of explicitly teaching the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000) with marginalized students. These students may include gifted, learning disabled, English as a second language, and attention deficit individuals. A possible research question could be, "Do,

and if so, in what ways do marginalized students benefit from the *Thinking Together* program? A second area of interest for potential research could be further exploration into gender differences through the explicit teaching of the *Thinking Together* program. A potential question for research could be, "What are the cultural and developmental considerations that may or may not impact gender differences in benefitting from the *Thinking Together* program?" A third research topic could be to explore the influence of writing tasks on group participation in the implementation of the program. For example, does the removal of writing tasks from the implementation of the *Thinking Together* program increase its effectiveness? A fourth area of interest for research concerns students who struggle with social confidence. For example, what supports are needed for students who experience social anxiety in order to promote their participation in small group discussions? A final research topic could be to explore the influence playful talk may have on creativity and the generation of ideas in small group discussions. As an example, what influence does playful talk have in the generation of ideas in small group discussions?

Personal Reflections

I viewed teaching a framework for Exploratory Talk as a way to help my students engage in meaningful discourse and to promote the establishment of a community of inquiry within our classroom setting. The value of this project was in the development of my individual teaching approach and how I could better assist my students in their learning. While I believe I have continued to grow and evolve in my professional life over the years, my experience bridging theory into practice through this research has felt

humbling and at the same time, reaffirming. I have always believed in engaging students through their individual interests. This program helped to lay the foundation in our classroom where students were encouraged to pursue individual interests, yet learn from each other through the process of collaboration. Our class was composed of diverse participants with strengths and challenges that contributed to our own unique experience. I await the new community that will unfold in September with curiosity and confidence in our ability to learn from each other.

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Appendix A

Ethics Approval

Appendix B

District Administration Letter

(Superintendent)

"Exploratory Talk - A Framework for Building a Community of Inquiry"

Dear **xxxxxxxxxxx**:

I am currently working on a Master's of Education degree through the University of Victoria. As a graduate student, I am required to conduct research as part of the requirements for my degree. The purpose of this letter is to formally obtain your permission to conduct classroom research with the Grade 6 students I will be teaching at **xxxxxxxxxxxxxxx** in the fall. The study I am conducting is entitled Exploratory Talk - A Framework for Building a Community of Inquiry. All of the Grade 6 students in my classroom will be invited to participate in the study. Pending approval from the University of Victoria's Human Research Ethics Board, School District #**xx**, and **xxxxxxxxx**, this project would proceed from the end of September to the start of Winter Vacation. If you have any further questions, you may contact me at home xxxxxxx or by e-mail **xxxxxxxxxxxx**. My research is being conducted under the supervision of Dr. Sylvia Pantaleo who may be contacted at **xxxxxxxxxx** or **xxxxxxxxxxxx**.

The purpose of this research project is to teach a framework for exploratory talk that will be used in collaborative group discussions on topics related to Global Citizenship. For the purpose of this investigation, exploratory talk will be defined as a specific framework for talk that encourages students to follow ground rules that help them to share knowledge, evaluate evidence, and consider options in a reasonable and equitable way. Games, visual arts, drama, stories, and written responses will all be used as activities to stimulate student engagement and promote discussion.

I will work with my class of Grade 6 students on this instructional unit 2-3 times per week for approximately 10 weeks beginning in late September. The students will:

a) engage in peer-led small group discussions on topics that encourage students to become aware of the ways individuals talk together. Some examples of topics include accurate listening, asking questions, giving instructions, or giving reasons
b) participate in whole class discussions that will provide the students with opportunities to reflect upon the content of each session/lesson
c) participate in games, drama, visual arts and/or writing activities related to the Exploratory Talk lessons

This area of research is important as studies show that in many elementary classrooms very little exploratory talk takes place. The quality of group work can be unproductive when students do not fully understand how they are expected to work together. Therefore, instructional contexts that involve group work would benefit from supporting the explicit teaching of an Exploratory Talk structure. Within this approach, students learn to engage critically but constructively with each other's ideas and work more effectively in groups. Research within this area has shown that improvements in the ability to think together

within groups contribute to significant improvements in individual thinking skills. In other words thinking together out loud is good preparation for thinking alone.

There are no anticipated or known inconveniences or risks to the students by taking part in this research. By participating in the project, students will have the following opportunities: to develop their understanding and appreciation of group work and collaboration; to extend their awareness and use of talk as a tool for thinking; to learn and practice effective 'ground rules' for talk in group discussions; to understand that discussions are more than a process of exchanging opinions, they are aimed at the construction of the best collective answer/response; to contribute to an atmosphere of care and safety in our classroom where all students can try out ideas with the understanding they will be listened to; and, to use discussion groups to help further their understandings of topics in the social studies unit on Global Citizenship.

Throughout the study, I will collect data to document this research. I will keep field notes of classroom observations and I will use audio tapes to record specific aspects of instruction as well as student's small group discussions. In addition, students will be asked to complete a pre- and post- questionnaire providing information on their attitudes and beliefs about talk in group work. The students will be told that their talk is being audio recorded and that their work is being copied.

Although all the students in the class will be participating in this unit of study as part of the regular language arts/social studies program, students can choose whether they want to be involved in the project. If a student chooses not to participate in the study, he/she will complete all of the activities described above because they are part of the regular language arts/social studies program. If a student agrees to voluntarily participate in the research, then I will include his/her questionnaires, photocopies of his/her group activity responses (written, visual art), as well as his/her contributions in audio taped discussions as part of my data. Conducting the study will not disrupt the regular routines and structure of the classroom nor will it result in the omission of required curriculum. If a student does not wish to participate then his/her responses will be used for regular classroom assessment only, and any taped comments will not be transcribed directly, but used in summarized form with no identifying information.

I have taken the following steps to ensure that the students do not feel unduly pressured to participate because I am their teacher. I am requesting that both consent forms are returned to the school office in a sealed envelope. These consent forms will be kept in a locked cupboard in the office until after first term report cards have been issued and winter vacation has begun. Both student and parent/guardian consent forms must be signed in order for a student to participate in the study. The students know that I will be unaware of who is participating until the end of the study.

The student's confidentiality and the confidentiality of the data will be protected throughout and after the study. During the course of the 10 week study, I will store both the written responses and tapes in a locked cupboard at the school. Neither the school nor any of the participants will be identified by name in any report of this study, thus ensuring complete confidentiality of the student's data. When the research is complete, I will store the data in a locked drawer in my home residence and I will be the only individual with access to the data. Audio tapes will be transcribed and then erased. Data will be kept until I have completed and successfully defended my project. At that time, computer files will be erased and other documents will be destroyed.

A student's participation in this research must be completely voluntary. If a student decides to participate, he/she may withdraw at any time without explanation and with no consequences for his/her grades or otherwise. If a student does withdraw from the study, his/her data (questionnaire responses, individual transcribed comments, written work) will not be used in the analysis. A student may withdraw from the study at any time by notifying the office. In addition, a note will be sent home upon completion of the study to give families one last opportunity to discuss consent.

In addition to being able to contact the researcher and the supervisor at the aforementioned telephone numbers, you may verify the ethical approval of this study, or raise any concerns you might have, by contacting the HUMAN RESEARCH ETHICS OFFICE AT THE UNIVERSITY OF VICTORIA AT 250-472-4545.

Your signature below indicates that you understand the above conditions of participation in the study, that you have had the opportunity to have your questions answered and that I have your permission to conduct this research. Please return the completed consent form to me by September _____, 2009 in the self-addressed stamped envelope.

Sincerely,

Cathy Prette
Master's of Education Candidate
Faculty of Education
University of Victoria

_____	_____	_____
Superintendent Name S.D. #62	Signature	Date

Please retain a copy of this consent form for your files, and return the second signed copy to me in the envelope provided.

Appendix C

District Administration Letter

(Principal)

"Exploratory Talk - A Framework for Building a Community of Inquiry"

Dear **xxxxxxxxxxxxx**:

I am seeking your permission to conduct research in the Grade 6 classroom in which I will be teaching next year at **xxxxxxxxxxxxxxx**. As you know, I took a leave of absence from teaching last year to pursue further education at the University of Victoria. As a graduate student, I am required to conduct research as part of the requirements for a Master's degree in Education. The study I am conducting is entitled Exploratory Talk - A Framework for Building a Community of Inquiry. All of the Grade 6 students in my classroom will be invited to participate in the study. Permission to conduct this study has been given by the superintendent of **xxxxxxxxx** School District #**xx** pending your consent. If you have any further questions, you may contact me at home (xxxxxxxxxx) or by e-mail at **xxxxxxxxxxxxx**. My research is being conducted under the supervision of Dr. Sylvia Pantaleo who may be contacted at **xxxxxxxxxxxx** or at **xxxxxxxxxxxxx**.

The purpose of this research project is to teach a framework for exploratory talk that will be used in collaborative group discussions on topics related to Global Citizenship. For the purpose of this investigation, exploratory talk will be defined as a specific framework for talk that encourages students to follow ground rules that help them to share knowledge, evaluate evidence, and consider options in a reasonable and equitable way. Games, visual arts, drama, stories, and written responses will all be used as activities to stimulate student engagement and promote discussion.

I will work with my class of Grade 6 students on this instructional unit 2-3 times per week for approximately 10 weeks beginning in late September. The students will:

a) engage in peer-led small group discussions on topics that encourage students to become more aware of the ways individuals talk together. Some examples of topics include accurate listening, asking questions, giving instructions, or giving reasons
b) participate in whole class discussions that will provide students with opportunities to reflect upon the content of each session/lesson
c) participate in games, drama, visual arts and/or writing activities related to the Exploratory Talk lessons

This area of research is important as studies show that in many elementary classrooms very little exploratory talk takes place. The quality of group work can be unproductive when students do not fully understand how they are expected to work together. Therefore, instructional contexts that involve group work would benefit from supporting the explicit teaching of an Exploratory Talk structure. Within this approach, students learn to engage critically but constructively with each other's ideas and work more effectively in groups. Research within this area has shown that improvements in the ability to think together

within groups contribute to significant improvements in individual thinking skills. In other words thinking together out loud is good preparation for thinking alone.

There are no anticipated or known inconveniences or risks to the students by taking part in this research. By participating in the project, students will have the following opportunities: to develop their understanding and appreciation of group work and collaboration; to extend their awareness and use of talk as a tool for thinking; to learn and practice effective 'ground rules' for talk in group discussions; to understand that discussions are more than a process of exchanging opinions, they are aimed at the construction of the best collective answer/response; to contribute to an atmosphere of care and safety in our classroom where all students can try out ideas with the understanding they will be listened to; and, to use discussion groups to help further their understandings of topics in the social studies unit on Global Citizenship.

Throughout the study, I will collect data to document this research. I will keep field notes of classroom observations and I will use audio tapes to record specific aspects of instruction as well as student's small group discussions. In addition, students will be asked to complete a pre- and post-questionnaire providing information on their attitudes and beliefs about talk in group work. The students will be told that their talk is being audio recorded and that their work is being copied.

Although all the students in the class will be participating in this unit of study as part of the regular language arts/social studies program, students can choose whether they want to be involved in the project. If a student chooses not to participate in the study, he/she will complete all of the activities described above because they are part of the regular language arts/social studies program. If a student agrees to voluntarily participate in the research, then I will include his/her questionnaires, photocopies of his/her group activity responses (written, visual art), as well as his/her contributions in audio taped discussions as part of my data. Conducting the study will not disrupt the regular routines and structure of the classroom nor will it result in the omission of required curriculum. If a student does not wish to participate then his/her responses will be used for regular classroom assessment only, and any taped comments will not be transcribed directly, but used in summarized form with no identifying information.

I have taken the following steps to ensure that the students do not feel unduly pressured to participate because I am their teacher. I am requesting that both consent forms are returned to the school office in a sealed envelope. These consent forms will be kept in a locked cupboard in the office until after first term report cards have been issued and winter vacation has begun. Both student and parent/guardian consent forms must be signed in order for a student to participate in the study. The students know that I will be unaware of who is participating until the end of the study.

The student's confidentiality and the confidentiality of the data will be protected throughout and after the study. During the course of the 10 week study, I will store both the written responses and tapes in a locked cupboard at the school. Neither the school nor any of the participants will be identified by name in any report of this study, thus ensuring complete confidentiality of the student's data. When the research is complete, I will store the data in a locked filing cabinet in my home residence and I will be the only individual with access to the data. Audio tapes will be transcribed and then erased. Data will be kept until I have completed and successfully defended my project. At that time, computer files will be erased and other documents will be destroyed.

A student's participation in this research must be completely voluntary. If a student decides to participate, he/she may withdraw at any time without explanation and with no consequences for his/her grades or otherwise. If a student does withdraw from the study, his/her data (questionnaire responses, individual transcribed comments, written work) will not be used in the analysis. A student may withdraw from the study at any time by notifying the office. In addition, a note will be sent home upon completion of the study to give families one last opportunity to discuss consent.

In addition to being able to contact the researcher and the supervisor at the aforementioned telephone numbers, you may verify the ethical approval of this study, or raise any concerns you might have, by contacting the HUMAN RESEARCH ETHICS OFFICE AT THE UNIVERSITY OF VICTORIA AT 250-472-4545.

Your signature below indicates that you understand the above conditions of participation in the study, that you have had the opportunity to have your questions answered and that I have your permission to conduct this research. Please return the completed consent form to me by September _____, 2009 in the self-addressed stamped envelope.

Sincerely,

Cathy Prette
Master's of Education Candidate
Faculty of Education
University of Victoria

_____	_____	_____
Name	Principal's Signature	Date

Please retain a copy of this consent form for your files, and return the second signed copy to me in the envelope provided.

Appendix D

Recruiting Script

Recruiting Script

I am working on a Master's degree at the University of Victoria and need to do some research. I am going to be studying the talking that takes place in discussion groups during a language arts/social studies unit. Everybody in the class will participate in these lessons, however, I would like to use the work that you produce for my research and I will be asking for your permission to do so. It is your individual choice whether to allow me to use your work or not. As part of my research I would like to be able to audio record some of your group conversations, as well as ask for your opinions about group work on a student questionnaire. If you choose not to participate in this research, you will still participate in the same activities and do the same amount of work as the students who do participate.

Why do teachers do research? The main reason is to find better ways to help their students learn. By participating in this study you can also assist teachers to learn, but your participation is voluntary. That means it is your decision whether or not you allow me to include transcripts of your conversations or opinions about group work in my research. If you decide you do not want your work included in the data that is fine. Your decision not to participate will not effect your report card because I will not even know who is participating until the beginning of winter vacation.

Today a letter will go home to your parents explaining everything I have described to you. If you and your parents give permission for your work and comments to

be included in the data, then you each need to sign a letter. These signed letters are to be returned to the office and put in a box that says “Mrs. Prette’s Research Project”. If your parents say it’s okay for you to participate, but you’re not comfortable with me using your work, then you get to say no. At the end of the project another letter will be sent home to let your parents knows the study is finished. At that time you will have one last opportunity to discuss your consent, and if you decide to withdraw from the project, you need to return that letter to the office.

Finally, it’s important that you don’t tell me whether or not you are part of the project. Would you like to ask any questions?

Appendix E

Letter of Informed Consent

(Participants)

"Exploratory Talk - A Framework for Building a Community of Inquiry"

Dear Student:

As you may know, I took a leave of absence last year to go back to university. As a graduate student, I am expected to conduct research as part of the requirements for a Master's degree in Education. For my research, I am hoping to learn better ways to support your thinking skills through the use of small group discussions. This study may increase your understanding of how to communicate and work more effectively with your peers in small groups and will provide you with opportunities to develop and improve critical thinking skills.

Although all of the students in our class will be participating in this unit of study as part of the language arts/social studies program, I would like to request your permission to be a research participant.

During our lessons, everyone will have an opportunity to:

* Work in a group of three
* Develop a set of 'ground rules' for talking in small groups
* Practice the 'ground rules' to reach decisions and accept joint responsibility
* Interview each other and introduce a group member to the class
* Participate in role play and drama activities
* Play games (Rain forest photographer, Action card game)
* Create posters and other visual arts representations
* Interact with computer software as a stimulus for thinking together
* Read short stories about social and moral issues
* Develop an action plan for a social issue you feel is important

By agreeing to participate in this project, you will give me permission to:

* Photocopy samples of your work
* Include your information from questionnaires
* Audiotape your comments

I will:

* Use your work when I write about the project
* Keep the information in a locked filing cabinet in my home office after the study is completed
* Protect computer files with a password
* Erase audio tapes, delete computer files and destroy other documents after I have successfully presented my project

To protect your anonymity, when REPORTING THE RESULTS OF the study, YOU AND YOUR school will be given different names so that people reading the study will not know where the study took place or who was involved in the study.

Your participation must be voluntary. Please discuss this letter with your parents or guardians. If you decide you want to be part of the study, return your signed consent form as well as your parent's/guardian's, to the office by September_____, 2009. These consent forms will be kept in the office until after report cards are issued and winter vacation has begun. Therefore, I will not know if you have agreed to participate until after this time. You may withdraw from the study at any time without any problem, by having your parent/guardian notify the office. In addition, a note will be sent home upon completion of the study to give you one last opportunity to discuss withdrawing consent, without explanation or consequence, with your parents.

If you have any questions or concerns about the project, please ask me at school or have your parents contact me at **xxxxxxxxxxxx**. Your parents/guardians have a letter that has more information about who they can contact if they have questions about the study.

Sincerely,

Mrs. Prette
Master's of Education Candidate
Faculty of Education
University of Victoria

By signing your name on the consent form, you are showing me that you understand what you will be asked to do in the study, and that you want to take part in the study. Please return your consent forms by September _____2009.

_____	_____	_____
Name of Student	Signature	Date

Please retain a copy of this consent form for your files, and return the second signed copy to the school office in the envelope provided.

Appendix F

Letter of Informed Consent

(Parents or Guardians)

"Exploratory Talk - A Framework for Building a Community of Inquiry"

Dear Parents or Guardians:

As many of you may know, I took a leave of absence from teaching last year to pursue further education at the University of Victoria. As a graduate student, I am required to conduct research as part of the requirements for a Master's degree in Education. The study I am conducting is entitled Exploratory Talk - A Framework for Building a Community of Inquiry. Permission to conduct this study has been given by **xxxxxxxx** and by Sooke School District #62. If you have any further questions, you may contact me at **xxxxxxxxxx** or by e-mail at **xxxxxxxxxxxx**. My research is being conducted under the supervision of Dr. Sylvia Pantaleo, who may be contacted at **xxxxxxxxxxx** or at **xxxxxxxxxxxx**.

The purpose of this research project is to teach a framework for exploratory talk that will be used in collaborative group discussions on topics related to Global Citizenship. For the purpose of this investigation, exploratory talk will be defined as a specific framework for talk that encourages students to follow ground rules that help them to share knowledge, evaluate evidence, and consider options in a reasonable and equitable way. Games, visual arts, drama, stories, and written responses will all be used as activities to stimulate student engagement and promote discussion.

I will work with my class of Grade 6 students on this instructional unit 2-3 times per week for approximately 10 weeks beginning in late September. The students will:

a) engage in peer-led small group discussions on topics that encourage students to become more aware of the ways individuals talk together. Some examples of topics include accurate listening, asking questions, giving instructions, or giving reasons.
b) participate in whole class discussions that will provide the students with opportunities to reflect upon the content of each session/lesson
c) participate in games, drama, visual arts and/or writing activities related to the Exploratory Talk lessons
d) complete pre- and post-questionnaires

This area of research is important as studies show that in many elementary classrooms very little exploratory talk takes place. The quality of group work can be unproductive when students do not fully understand how they are expected to work together. Therefore, instructional contexts that involve group work would benefit from supporting the explicit teaching of an Exploratory Talk structure. Within this approach, students learn to engage critically but constructively with each other's ideas and work more effectively in groups. Research within this area has shown that improvements in the ability to think together within groups contribute to significant improvements in individual thinking skills. In other words, thinking together out loud is good preparation for thinking alone.

There are no anticipated or known inconveniences or risks to your child by taking part in this research. By participating in the project, students will have the following opportunities: to develop their understanding and appreciation of group work and collaboration; to extend their awareness and use of talk as a tool for thinking; to learn and practice effective 'ground rules' for talk in group discussions; to understand that discussions are more than a process of exchanging opinions, they are aimed at the construction of the best collective answer/response; to contribute to an atmosphere of care and safety in our classroom where all students can try out ideas with the understanding that they will be listened to; and, to help further student understandings of topics in the social studies unit on Global Citizenship.

Although all the students in the class will be participating in this unit of study as part of the regular language arts/social studies program, I would like to request your permission for your child to be a research participant in my project. If a student chooses not to participate in the study, he/she will still complete all of the activities described above because they are part of the regular language arts/social studies program. If your child agrees to voluntarily participate in the research, then I will include his/her questionnaires, photocopies of his/her group activity responses (written, visual art), as well as his/her contributions in audio taped discussions as part of my data. Conducting the study will not disrupt the regular routines and structure of the classroom nor will it result in the omission of required curriculum. If your child does not wish to participate then his/her responses will be used for regular classroom assessment only, and any taped comments will not be transcribed directly, but used in a summarized form with no identifying information.

Your child's confidentiality and the confidentiality of the data will be protected throughout and after the study. During the course of the 10 week study, I will store both the written responses and tapes in a locked cupboard at the school. Neither the school nor any of the participants will be identified by name in any report of this study, thus ensuring complete confidentiality of your child's data. When the research is complete, I will store the data in a locked filing cabinet in my home residence and I will be the only individual with access to the data. Audio tapes will be transcribed and then erased. Data will be kept until I have completed and successfully defended my project. At that time, computer files will be erased and other documents will be destroyed.

Your permission and your child's permission to participate in the research must be voluntary. In order to avoid any pressure you or your child might feel because I am your child's classroom teacher, I am requesting that you return both consent forms to the school office in the envelope provided. These consent forms will be kept in a locked cupboard in the office until after first term report cards have been issued and winter vacation has begun. Both student and parent/guardian consent forms must be signed in

order for your child to participate in the study. The students know that I will be unaware of who is participating until the end of the study.

Your child may withdraw from participating in the research project at any time without explanation and with no consequences for his/her grades or otherwise. If your child does withdraw from the study, his/her individual data (questionnaire responses, individual transcribed comments, written work) will not be used in the analysis. Your child may withdraw from the study at any time by notifying the office. In addition, a note will be sent home upon completion of the study to give you one last opportunity to discuss consent with your child.

In addition to being able to contact the researcher and the supervisor at the aforementioned telephone numbers, you may verify the ethical approval of this study, or raise any concerns you might have, by contacting the HUMAN RESEARCH ETHICS OFFICE AT THE UNIVERSITY OF VICTORIA AT 250-472-4545.

Your signature below indicates that you understand the above conditions of participation in the study, and that you have had the opportunity to have your questions answered by the researcher. Please return one copy of the signed consent form by September _____, 2009 in the self-addressed envelope to the school office by September _____, 2009 and keep the other for your records.

Sincerely,

Cathy Prette
Master's of Education Candidate
Faculty of Education,
University of Victoria

_____
Name of Participating Student

_____ _____ _____
Name of Participant's Parent or Guardian | Signature | Date

Please retain a copy of this consent form for your files and return the second signed copy to the school office in the envelope provided.

Appendix G

End of Study Letter

"Exploratory Talk - A Framework for Building a Community of Inquiry"

Dear Student and Parents or Guardians:

We have now completed the 16 lessons from the *Thinking Together* program (Dawes, Mercer, & Wegerif, 2000) that I used for my research project. I am preparing to analyze the data and will soon begin to write up the results. I need to transcribe and analyze the students' contributions during group discussions, compare the students' responses on the pre- and post-questionnaires, and review students' work on activities (written, visual) completed during the project.

University ethical policy requires me to remind participants that they may withdraw from the study. Therefore this letter is a final opportunity for you to discuss with your child having his/her work included as data for this project. I would like to remind you that a decision to withdraw consent will not effect your child's grades or otherwise in anyway. If you do decide to withdraw consent, both you and your child must sign the bottom of this form and return it to the office by June 30, 2010.

Sincerely,

Cathy Prette
Master's of Education Candidate
Faculty of Education
University of Victoria

Your signatures below indicate that you and your child have made a decision to withdraw consent for participation in the research project "Exploratory Talk - A Framework for Building a Community of Inquiry".

_____	_____	_____
Student Name	Parent Name	Date
_____	_____	_____
Student Signature	Parent's Signature	Date

Please retain a copy of this consent form for your files and return the second signed copy to the school office in the envelope provided.

Appendix H

Pre- and Post-Program Questionnaire

Student Questionnaire

For each statement, circle the number that best represents your personal opinion.

1. I think better on my own rather than with others in a group.

1	2	3	4	5
Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree

Comment

_____

_____

2. I enjoy group work.

1	2	3	4	5
Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree

Comment

_____

_____

3. In small group discussions, I am comfortable sharing my opinion.

1	2	3	4	5
Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree

Comment

_____

_____

4. In small group discussions, if I think someone is wrong I believe it is important to challenge that person's opinion.

1	2	3	4	5
Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree

Comment

_____

_____

5. In small group discussions, I often suggest ideas.

1	2	3	4	5
Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree

Comment

_____

_____

6. In my experiences with small group discussions, a few students do most of the talking.

1	2	3	4	5
Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree

Comment

_____

_____

7. In small group discussions, it is important to change my mind if new ideas change my thinking.

1	2	3	4	5
Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree

Comment

_____

_____

8. In small group discussions, if another group member has not spoken, I often ask them what they think.

1	2	3	4	5
Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree

Comment

_____

_____

9. In small group discussions, when people state an opinion they should have to give reasons for their thinking.

1	2	3	4	5
Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree

Comment

_____

_____

10. In small group discussions, it is important that everyone agree before writing down a group answer or making a group decision.

1	2	3	4	5
Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree

Comment

_____

_____

11. In small group discussions, my ideas are listened to and important to others.

1	2	3	4	5
Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree

Comment

_____

_____

12. The work produced in small groups is usually better than what an individual can create on his/her own.

1	2	3	4	5
Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree

Comment

_____

_____

13. Expressing my ideas out loud helps me to think better on my own.

1	2	3	4	5
Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree

Comment

_____

_____

14. In small group work, everyone's ideas are needed if we are going to be successful.

1	2	3	4	5
Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree

Comment

_____

_____

15. When I am involved in small group discussions, we spend too much time talking about other things.

1	2	3	4	5
Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree

Comment

_____

_____

Appendix I

Comments/Themes from the Pre- and Post-Program Questionnaires

Comments/Theme from the Pre- and Post-Program Questionnaire

Group composition (i.e. ,Who is in the group?)

1. "It depends." 1
1. "It depends on who I work with." 1
1. "It depends on who I work with." 1
1. "It depends on who I work with." 1
1. "It depends on the partners." 1
1. "Depends on the people." 1
1. "It depends on who I'm with." 1
1. "It depends on who I work with." 1
1. "If it's one of my friends, then 'yes', but if it is someone who I don't know, then I usually don't feel like I can share some things." 2
2. "Depends who I am working with." 2
2. "It depends on who I work with." 1
2. "I strongly agree, except if the group is people who are not that kind to me." 1
2. "It depends on ... who we're doing it with." 1
2. "It depends on who I work with." 1
2. "It depends on who is in the group." 2
2. "Depends who I am working with." 2
3. "It depends on who is in the group." 1
5. "When I am with friends I feel a bit more welcome to... friends and people I know well." 2
6. "It depends who I'm working with." 1
6. "Sometimes people say everything but sometimes people don't talk at all." 1
6. "Depends who's in the group." 2
6. "It depends on the student." 2
11. "It depends who is in the group." 1
11. Sometimes they are and sometimes they aren't. Again it depends." 1
12. "Depends on the group." 2
12. "Once again, it depends on the group members, if they don't work good together it won't be good." 2
15. "Yes and no, it depends on who you work with." 1
15. "It depends on who is the group, but usually, No."1
15. "All the time, depending on who I'm with." 1
15. "Well, it depends on the group. Like, if we have people who fool around then your group will end up probably talking about something else or just not working. But there are some groups that just get down to work and don't talk about anything else." 1
15. "It depends who I work with." 2
15. "It always depends on who you work with." 2
15." In some groups this happens, in others it doesn't." 2

Topic Selection (i.e., What is the group about?)

1. “It depends on what we’re doing or talking about.” 1
1. “It depends on what we’re doing.” 1
1. “It depends ... what it is? 1
2. “It depends on what we’re doing.” 1
2. “It depends on ... what it is?”1
3. “Sometimes I am willing to share my opinion but it depends on what it is?”1
3. “It all depends what we have to share.” 1
5. “Sometimes but depending on topic.” 2
9. “It depends what they are talking about.” 2
9. “Depends what we are talking about.” 2
11. “It depends on what I say that makes it important.” 2
15. “We usually keep to the subject and not change it.” 2
15. “We stay on topic.” 1

Personal Autonomy

1. “I think that I can work better by myself.” 1
1. “I really like to work by myself.” 2
12. “I think one person can come up with as good of an idea as a group.” 1
12. “Because some people may like the individual’s work better than the groups.” 1
13. “I don’t need to talk out loud to think better.” 1

Social Discomfort

1. “... I’m shy to share.” 1
1. “ ... I lose focus.” 1
2. “I am not really good with a group.” 1
3. “Sometimes I feel a bit nervous to share my thoughts.” 1
4. “I might try to tell them but I would never try to argue, so I would just keep it to myself.” 1
4. “I don’t like to challenge people in group discussions.” 1
4. “You don’t want to put them (others) down.” 1
4. “... I don’t challenge that person’s opinion.” 2
5. “I don’t usually speak to others, I usually keep to myself in discussions.” 1
5. “... in a whole class discussion, I’m always kind of unsure on what to say.” 1
5. “I don’t really like talking that much.” 1
6. “I hate sharing in front of other people, not my friends.” 1
6. “I haven’t been in many group discussions.” 1
8. “Usually that person is me.” 2
8. “For me, not really, I’m usually the one who hasn’t spoken.” 2
10. “I think that because if someone did something you don’t like, how would you feel?”1
13. “I would usually just talk about it with a friend. Not the whole class.” 1

Inequality

6. “Some people are just like, full of ideas and they take charge which is good but I wish they’d let other people speak.” 1
6. “Sometimes one person doesn’t talk.” 2
6. “The people in my group talk way more than me.” 1
8. “Usually someone asks before me.” 1
8. “I do if I notice them but sometimes because they don’t say anything, I almost forget that they are there.” 1
10. “If there’s like four people in the group and only one disagrees, it’s a majority.” 1
10. “It’s not fair if two people feel one way and two feel the other but one pair takes charge and writes how they feel and don’t give the others a chance.” 1
11. “When people in my group kind of think that they know better, my ideas are not very important to them.” 1
11. “People don’t really listen to my ideas.” 1

Equitability

4.“I think everyone should get a chance to share their ideas but if they’re the only one that wants that then the group should not have to do it.” 1
4. “Everyone has their own opinion.” 1
4. “Because everyone has an opinion so it is good to share what you think.” 2
4. “Because I would like to help others.” 1
8. “They need a chance to talk.” 2
8. “I do that most of the time because I think everyone should talk.” 2
8. “I don’t directly ask them, I ask everyone.” 1
11. “Everyone can say something and everyone listens.” 1

Collaboration

1. “I learn better when I can share my ideas with a person/people who can build off of that, correct me, or give me other ideas on how to solve a problem.” 1
1. “Sometimes when I’m in a group ... it helps me if I can’t think of an answer, I can ask for help.” 1
1. “I like to be with a group because I think you think better when all of the brains of the people are working together.” 1
1. “Because more brains work better.” 2
1. “I like to be with a group because I think you think better when all of the brains of the people are together.” 2
1. “When I’m in a group we come up with stuff I would never come up with on my own.” 2
1. “ ... When I ‘m in a group I am able to ask questions (understand).” 2
1. “I definitely don’t” 2
2. “Like in question one, I can understand better.” 2
2. “Sometimes I really need help so I could just ask someone.” 1
4. “It is important because that person could be completely wrong.” 2

4. “Isn’t that the point about group work? You can’t just sit there and agree about everything.” 2
4. “Because you would kind of want a good answer.” 1
4. “I think you should try the idea and if it works it works, if not, it doesn’t.” 1
4. “I think the person’s opinion is their opinion so it’s fine to think differently.” 1
6. “Everybody says lots.” 1
7. “It is good to learn new things.” 1
7. “I like to change my ideas.” 1
7. “I think it is important to be open-minded.” 1
7. “It is very important to change my mind.” 2
10. “If not everyone agrees, then maybe the person who disagrees might have a better answer.” 1
12. “In a group of three, you can have three times the ideas.” 1
12. “When faced with something difficult, five people can generally create a more accurate solution than one person on his/her own.” 1
12. “Three minds are better than one.” 1
12. “Because you can share the ideas and if someone disagrees then you’ll have a better idea.” 1
12. “Because there are more than one person in the group.” 1
14. “It’s all about teamwork.” 1

Affective Positions

1. “I hate working by myself because sometimes I get embarrassed.” 1
1. “I love group work.” 1
2. “because I like working with other people.” 1
2. “I like working together as a team.” 1
2. “I love working with others whether its just sitting with them or conversing with them. I noticed that last year in home schooling.” 1
2. “I love group work.” 2
2. “I love group work.” 1
3. “I like to share my opinion.” 1
3. “In small and big group discussions, I am not shy. I have lots of ideas and love to share them.” 1
3. “I am always comfortable sharing my opinion.” 2
5. “I like giving ideas but I like hearing other people’s thoughts too ...”1
5. “For me, it is easy to come up with ideas.” 1

Ambivalence

1. “I work well alone and in a group. I also like being in a group but sometimes I fell like being alone.” 1
1. “I think its even for me.” 1
1. “I work well by myself but I also work well in a group. It doesn’t matter.” 1
1. “I work well either way ...” 2

3. “Because sometimes I like to share and sometimes I don’t.” 1
4. “Don’t know.” 1
5. “I usually do but sometimes I don’t.” 1
6. “Sometimes, sometimes not.” 2
6. “Sometimes that happens but not always.” 2
7. “Depends how your thinking changes.” 2
8. “Sometimes I do, sometimes I don’t” 2
8. “Sometimes, other times I don’t notice” 2
8. “I sometimes ask that person if they have an idea.” 1
9. “It depends.” 1
11.“I only sometimes share ideas”. 1
12. “In between.” 1
12. ‘For me, not really. For me, its more around equal.” 2
15. “Sometimes you will and sometimes you won’t.” 2
15. “Sometimes.” 2

Justification

9. ”Give a couple if someone challenges your opinion.” 1
9. “Not everyone knows what you’re thinking so you should explain it to them.” 1
9. “Sometimes we would all just get it. Other times, yep.” 1
9. “They need a reason or they could just say it randomly.” 2
9. “Normally they should, but sometimes their reason is just way to obvious.” 2

Outliers

4. “It’s how you say it.” 1
13. “Huh? What does that mean?” 1
15. “We’re just kids.” 2

Appendix J

Student Pre- and Post-Program Questionnaire Ratings

Table J1

Carl's Pre- and Post-Program Questionnaire Ratings

Item	Pre-Program Questionnaire	Post-Program Questionnaire	Differential
#1	3	5	+2
#2	1	1	0
#3	1	1	0
#4	2	1	+1
#5	2	2	0
#6	2	4	+2
#7	2	2	0
#8	3	3	0
#9	3	2	+1
#10	1	1	0
#11	2	1	+1
#12	3	1	+2
#13	1	2	-1
#14	1	1	0
#15	4	2	-2

Responses toward questions #1, #4, #6, #9, #11, and #12 changed in a positive direction
Responses toward questions #1, #6, and #12 changed 2 or more levels in a positive direction
Responses toward questions #13 and #15 changed in a negative direction
Response toward question #15 changed 2 or more levels in a negative direction
Responses toward questions #2, #3, #5, #7, #8, #10, and #14 did not change

Table J2

Barb's Pre- and Post-Program Questionnaire Ratings

Item	Pre-Program Questionnaire	Post-Program Questionnaire	Differential
#1	3	3	0
#2	1	2	-1
#3	3	2	+1
#4	2	2	0
#5	4	3	+1
#6	1	2	+1
#7	1	2	-1
#8	1	1	0
#9	2	2	0
#10	1	1	0
#11	3	3	0
#12	4	2	+2
#13	4	2	+2
#14	1	2	-1
#15	3	3	0

Responses toward questions #3, #5, #6, #12, and #13 changed in a positive direction
Responses toward questions #12 and #13 changed two or more levels in a positive direction
Responses toward questions #2, #7, and #14 changed in a negative direction
Responses toward questions #1, #4, #8, #9, #10, #11, and #15 did not change

Table J3

Ellie's Pre- and Post-Program Questionnaire Ratings

Item	Pre-Program Questionnaire	Post-Program Questionnaire	Differential
#1	3	2	-1
#2	3	2	+1
#3	3	4	-1
#4	3	3	0
#5	2	4	-2
#6	2	2	0
#7	2	2	0
#8	3	4	-1
#9	4	3	+1
#10	2	2	0
#11	1	2	-1
#12	2	2	0
#13	4	4	0
#14	2	2	0
#15	4	4	0

Responses toward questions #2 and #9 changed in a positive direction
Responses toward questions #1, #3, #5, #8, and #11 changed in a negative direction
Response toward question #5 changed two or more levels in a negative direction
Responses toward questions #4, #6, #7, #10, #12, #13, #14, and #15 did not change

Table J4

Nolan's Pre- and Post-Program Questionnaire Ratings

Item	Pre-Program Questionnaire	Post-Program Questionnaire	Differential
#1	3	2	-1
#2	3	2	+1
#3	1	1	0
#4	2	1	+1
#5	1	1	0
#6	2	1	-1
#7	1	1	0
#8	2	2	0
#9	1	1	0
#10	1	1	0
#11	1	2	-1
#12	1	3	-2
#13	3	2	+1
#14	2	1	+1
#15	3	2	-1

Responses toward questions #2, #4, #13, and #14 changed in a positive direction
Responses toward questions #1, #6, #11, #12, and #15 changed in a negative direction
Response toward question #12 changed two or more levels in a negative direction
Responses toward questions #3, #5, #7, #8, #9, and #10 did not change

Table J5

Judy's Pre- and Post-Program Questionnaire Ratings

Item	Pre-Program Questionnaire	Post-Program Questionnaire	Differential
#1	4	4	0
#2	1	1	0
#3	3	2	+1
#4	4	2	+2
#5	3	3	0
#6	1	3	+2
#7	2	2	0
#8	3	3	0
#9	3	2	+1
#10	1	2	-1
#11	3	2	+1
#12	3	3	0
#13	3	2	+1
#14	2	2	0
#15	4	2	-2

Responses toward questions #3, #4, #6, #9, #11, and #13 changed in a positive direction
Responses toward questions #4 and #6 changed two or more levels in a positive direction
Responses toward questions #10 and #15 changed in a negative direction
Response toward question #15 changed two or more levels in a negative direction
Responses toward questions #1, #2, #5, #7, #8, #12, and #14 did not change

Table J6

Ruth's Pre- and Post-Program Questionnaire Ratings

Item	Pre-Program Questionnaire	Post-Program Questionnaire	Differential
#1	3	3	0
#2	1	1	0
#3	1	2	-1
#4	1	1	0
#5	2	2	0
#6	3	4	+1
#7	1	1	0
#8	3	2	+1
#9	3	2	+1
#10	1	1	0
#11	3	1	+2
#12	1	1	0
#13	3	1	+2
#14	1	1	0
#15	3	3	0

Responses toward questions #6, #8, #9, #11, and #13 changed in a positive direction
Responses toward questions #11 and #13 changed two or more levels in a positive direction
Response toward question #3 changed in a negative direction
Responses toward questions #1, #2, #4, #5, #7, #10, #12, #14, and #15 did not change

Table J7

Bruce's Pre- and Post-Program Questionnaire Ratings

Item	Pre-Program Questionnaire	Post-Program Questionnaire	Differential
#1	2	2	0
#2	4	4	0
#3	2	2	0
#4	3	1	+2
#5	2	3	-1
#6	1	2	+1
#7	2	2	0
#8	2	1	+1
#9	1	2	-1
#10	2	1	+1
#11	4	2	+2
#12	2	4	-2
#13	5	2	+3
#14	1	1	0
#15	2	2	0

Responses toward questions #4, #6, #8, #10, #11, and #13 changed in a positive direction
Responses toward questions #4, #11, and #13 changed two or more levels in a positive direction
Responses toward questions #5, #9, and #12 changed in a negative direction
Response toward question #12 changed two or morel levels in a negative direction
Responses toward questions #1, #2, #3, #7, #14, and #15 did not change

Table J8

Kathy's Pre- and Post-Program Questionnaire Ratings

Item	Pre-Program Questionnaire	Post-Program Questionnaire	Differential
#1	3	3	0
#2	2	3	-1
#3	3	2	+1
#4	4	2	+2
#5	4	3	+1
#6	2	2	0
#7	2	1	+1
#8	4	3	+1
#9	3	2	+1
#10	2	1	+1
#11	3	2	+1
#12	3	3	0
#13	3	2	+1
#14	2	2	0
#15	4	4	0

Responses toward questions #3, #4, #5, #7, #8, #9, #10, #11, and #13 changed in a positive direction
Response toward question #4 changed two or more levels in a positive direction
Response toward question #2 changed in a negative direction
Responses toward questions #1, #6, #12, #14, and #15 did not change

Table J9

Allison's Pre- and Post-Program Questionnaire Ratings

Item	Pre-Program Questionnaire	Post-Program Questionnaire	Differential
#1	4	3	-1
#2	2	2	0
#3	2	4	-2
#4	2	1	+1
#5	4	4	0
#6	4	2	-2
#7	2	1	+1
#8	2	4	-2
#9	2	1	+1
#10	1	2	-1
#11	2	2	0
#12	1	2	-1
#13	2	1	+1
#14	4	2	+2
#15	2	2	0

Responses toward questions #4, #7, #9, #13, and #14 changed in a positive direction
Response toward question #14 changed two or more levels in a positive direction
Responses toward questions #1, #3, #6, #8, #10, and #12 changed in a negative direction
Responses toward questions #3, #6, and #8 changed two or more levels in a negative direction
Responses toward questions #2, #5, #11, and #15 did not change

Table J10

Estelle's Pre- and Post-Program Questionnaire Ratings

Item	Pre-Program Questionnaire	Post-Program Questionnaire	Differential
#1	3	3	0
#2	2	3	-1
#3	3	2	+1
#4	2	2	0
#5	3	2	+1
#6	2	2	0
#7	3	3	0
#8	2	2	0
#9	3	2	+1
#10	4	1	+3
#11	3	2	+1
#12	3	3	0
#13	3	4	-1
#14	2	2	0
#15	1	2	+1

Responses toward questions #3, #5, #9, #10, #11, and #15 changed in a positive direction
Response toward question #10 changed two or more levels in a positive direction
Responses toward questions #2 and #13 changed in a negative direction
Responses toward questions #1, #4, #6, #7, #8, #12, and #14 did not change

Table J11

Larry's Pre- and Post-Program Questionnaire Ratings

Item	Pre-Program Questionnaire	Post-Program Questionnaire	Differential
#1	3	3	0
#2	1	1	0
#3	1	2	-1
#4	3	1	+2
#5	1	1	0
#6	4	3	-1
#7	1	1	0
#8	1	1	0
#9	1	1	0
#10	1	1	0
#11	2	1	+1
#12	2	3	-1
#13	1	1	0
#14	1	2	-1
#15	2	2	0

Responses toward questions #4 and #11 changed in a positive direction
Response toward question #4 changed two or more levels in a positive direction
Responses toward questions #3, #6, #12, and #14 changed in a negative direction
Responses toward questions #1, #2, #5, #7, #8, #9, #10, #13, and #15 did not change

Table J12

Jeremy's Pre- and Post-Program Questionnaire Ratings

Item	Pre-Program Questionnaire	Post-Program Questionnaire	Differential
#1	2	1	-1
#2	2	1	+1
#3	4	2	+2
#4	2	2	0
#5	5	2	+3
#6	5	2	-3
#7	3	2	+1
#8	4	1	+3
#9	3	1	+2
#10	1	2	-1
#11	4	4	0
#12	3	5	-2
#13	4	1	+3
#14	2	1	+1
#15	4	3	-1

Responses toward questions #2 #3, #5, #7, #8, #9, #13, and #14 changed in a positive direction
Responses toward questions #3, #5, #8, and #9 changed two or more levels in a positive direction
Responses toward questions #2, #3, #5, #7, #8, #9, #13, and #14 changed in a negative direction
Response toward question #6 changed two or more levels in a negative direction
Responses toward questions #4 and #11 did not change

Table J13

Jessica's Pre- and Post-Program Questionnaire Ratings

Item	Pre-Program Questionnaire	Post-Program Questionnaire	Differential
#1	3	4	+1
#2	2	2	0
#3	2	2	0
#4	2	2	0
#5	2	2	0
#6	2	2	0
#7	2	2	0
#8	2	2	0
#9	2	1	+1
#10	1	1	0
#11	2	2	0
#12	1	2	-1
#13	2	2	0
#14	1	2	-1
#15	3	4	+1

Responses toward questions #1, #9, and #15 changed in a positive direction
Responses toward #12 and #14 changed in a negative direction
Responses toward questions #2, #3, #4, #5, #6, #7, #8, #10, #11, and #13 did not change

Table J14

James' Pre- and Post-Program Questionnaire Ratings

Item	Pre-Program Questionnaire	Post-Program Questionnaire	Differential
#1	5	4	-1
#2	2	1	+1
#3	3	4	-1
#4	5	3	+2
#5	4	5	-1
#6	1	1	0
#7	2	2	0
#8	5	4	+1
#9	2	2	0
#10	1	1	0
#11	2	2	0
#12	3	1	+2
#13	5	2	+3
#14	3	2	+1
#15	4	3	-1

Responses toward questions #2, #4, #8, #12, #13, and #14 changed in a positive direction
Responses toward questions #4, #12, and #13 changed two or more levels in a positive direction
Responses toward questions #1, #3, #5, and #15 changed in a negative direction
Responses toward questions #6, #7, #9, #10, and #11 did not change

Table J15

Brian's Pre- and Post-Program Questionnaire Ratings

Item	Pre-Program Questionnaire	Post-Program Questionnaire	Differential
#1	2	3	+1
#2	2	2	0
#3	2	2	0
#4	4	1	+3
#5	2	2	0
#6	2	2	0
#7	2	1	+1
#8	4	2	+2
#9	2	1	+1
#10	2	2	0
#11	2	2	0
#12	2	1	+1
#13	5	2	+3
#14	2	1	+1
#15	2	3	+1

Responses toward #1, #4, #7, #8, #9, #12, #13, #14, and #15 changed in a positive direction
Responses toward questions #4, #8, and #13 changed two or more levels in a positive direction
No responses changed in a negative direction
Responses toward questions #2, #3, #5, #6, #10 and #11 did not change

Table J16

Robbie's Pre- and Post-Program Questionnaire Ratings

Item	Pre-Program Questionnaire	Post-Program Questionnaire	Differential
#1	2	4	+2
#2	2	1	+1
#3	1	2	-1
#4	2	2	0
#5	3	2	+1
#6	2	4	+2
#7	2	2	0
#8	3	1	+2
#9	2	1	+1
#10	2	2	0
#11	3	2	+1
#12	3	2	+1
#13	1	2	-1
#14	1	1	0
#15	3	4	+1

Responses toward questions #1, #2, #5, #6, #8, #9, #11, #12, and #15 changed in a positive direction
Responses toward questions #1, #6, and #8 changed two or more levels
Responses toward #3 and #13 changed in a negative direction
Responses toward questions #4, #7, #10, and #14 did not change

Table J17

Bobby's Pre- and Post-Program Questionnaire Ratings

Item	Pre-Program Questionnaire	Post-Program Questionnaire	Differential
#1	4	2	-2
#2	1	2	-1
#3	2	2	0
#4	3	2	+1
#5	3	4	-1
#6	5	1	-4
#7	2	1	+1
#8	1	1	0
#9	4	2	+2
#10	1	1	0
#11	2	4	-2
#12	2	4	-2
#13	2	4	-2
#14	1	2	-1
#15	3	4	+1

Responses toward questions #4, #7, #9, and #15 changed in a positive direction
Response toward question #9 changed two or more levels in a positive direction
Response toward questions #1, #2, #5, #6, #11, #12, #13, and #14 changed in a negative direction
Responses toward questions #1, #6, #11, #12, and #13 changed two or more levels in a negative direction
Responses toward questions #3, #8, and #10 did not change

Table J18

Maddie's Pre- and Post-Program Questionnaire Ratings

Item	Pre-Program Questionnaire	Post-Program Questionnaire	Differential
#1	4	2	-2
#2	2	2	0
#3	1	3	-2
#4	2	3	-1
#5	3	2	+1
#6	3	2	-1
#7	2	4	-2
#8	4	4	0
#9	2	2	0
#10	1	1	0
#11	2	2	0
#12	2	2	0
#13	2	2	0
#14	2	2	0
#15	5	3	-2

Responses toward question #5 changed in a positive direction
Responses toward questions #1, #3, #4, #6, #7, and #15 changed in a negative direction
Responses toward questions #1, #3, #7, and #15 changed two or more levels in a negative direction
Responses toward questions #2, #8, #9, #10, #11, #12, #13, and #14 did not change

Table J19

Lewis's Pre- and Post-Program Questionnaire Ratings

Item	Pre-Program Questionnaire	Post-Program Questionnaire	Differential
#1	5	4	-1
#2	2	2	0
#3	2	2	0
#4	2	1	+1
#5	2	2	0
#6	2	3	+1
#7	2	3	-1
#8	4	2	+2
#9	4	1	+3
#10	2	1	+1
#11	2	2	0
#12	4	1	+3
#13	4	2	+2
#14	2	2	0
#15	4	4	0

Responses toward questions #4, #6, #8, #9, #10, #12, and #13 changed in a positive direction
Responses toward questions #8, #9, #12 and #13 changed two or more levels in a positive direction
Responses toward questions #1 and #7 changed in a negative direction
Response toward questions #2, #3, #5, #11, #14, and #15 did not change

Appendix K

Inclusionary Comments

from the Pre- and Post-Program Discussion Groups

Table K1

Inclusionary Comments from Pre-Program Discussion Group

Page	Comments indicating inclusion Pre-Program Group Discussion	To the group	To a student
1	Ellie: Tony?		x
2	Carl: So maybe for our team ranking, what do you think is more important, the food or the water?	x	
2	Carl: So do you think we should do the water as number one?	x	
2	Carl: So the sharks won't eat you?		x
3	Barb: What about the sextant thing so you could know where you were?	x	
4	Carl: ... and then do you think a fishing kit would work like ... you were like in the water though so ...?	x	
5	Barb: What about the maps of the Pacific Ocean?	x	
5	Carl: ... umm, and then like what would the rope do, do you think?	x	
6	Barb: What about the opaque plastic sheeting, should it be eight and nine?	x	
6	Carl: Yeah, ... and then like the rope, do you think it would be important?	x	
7	Tony: What do you mean mosquito netting?	x	
8	Carl: Do you think that the oil petro oil thing would be important?	x	
8	Carl: ... yeah, its either the oil or the rum. Do you think, well, you could drink the rum?	x	
8	Ellie: Why would you drink it?	x	
9	Carl: O.K. and then why the rum though?	x	

Table K2

Inclusionary Comments from the Post-Program Discussion Group

Page	Post-Program Group Discussion Comments Indicating Inclusion	To the Group	To a Student
1	Carl: ... O.K. so who agrees?	x	
1	Carl: Ah Tony, you can go next ...		x
1	Barb: So what if, what if my country wasn't democratic. Then what would happen?	x	
2	Tony: O.K. fine. What should happen?	x	
2	Tony: I agree. I think our group agrees. Do you agree?		x
2	Tony: Do you agree?		x
2	Tony: Do you agree?		x
3	Barb: Why not, Carl?		x
3	Tony: Why do you disagree, Carl?		x
4	Barb: Does anybody agree?	x	
4	Tony: O.K.. So what should I have the right for then?	x	
5	Carl: Yeah, Ellie. Give it to Ellie.		x
5	Carl: Tony, do you agree?		x
5	Carl: Ellie, do you agree?		x
5	Carl: Barb, do you agree?		x
6	Barb: ... umm, what's another one?	x	
7	Barb: Carl?		x
7	Tony: Ellie, do you agree? Just agree.		x
7	Ellie: How about you can't, the right to not, you can't be put in jail for no reason?	x	

Page	Post-Program Group Discussion Comments Indicating Inclusion	To the Group	To a Student
8	Carl: Who actually does that right?	x	
8	Carl: Yeah, but is that really, really, really, super duper important?	x	
8	Ellie: Like, what if you don't want to have kids?	x	
8	Carl: Yeah, but is it that important? Is it going to like save the human race?	x	
9	Carl: O.K. Barb, O.K. Barb, I thought you had an idea?		x
11	Barb: O.K. what else?	x	

Appendix L

Pre-Program Discussion Group Transcript

Pre-Program Discussion Group Transcript

Carl: My number one is a case of army radiations because ...

Tony: Army rations.

Carl: Oh ... because without food you would like totally starve.

Tony: You'd die.

Carl: My number two is a 25 liter can of water because you can't go without water. My number three is a sextant so I can know where I am. My number four is a fishing kit so I can fish for fish, and my number five is a small transistor radio so I could maybe like, send like an S.O.S. message.

(Whispering)

Barb: My number one is a sextant so you can know where you were.

... Oh (at same time)

(Whispering) What about water? (at same time)

Barb: ... umm, my number two is [a] floating seat cushion so you wouldn't have to be in the water the whole time and be like freezing cold. Number three is a small transistor radio so you could like try and get help. Number four is a 25 liter container of water because it would be hard to live without water, and my number five is a case of army rations because you would die without food.

Ellie: My number one is a 25 liter container of water because you can't go without water. My number two is a mosquito netting so you can't get like a whole bunch of mosquito bites. Uh, my number three is a case of army radiations [rations] cause you can't go without food. My number four is 15 foot nylon rope so you can use it for ...

Carl: ... like tie it to a tree

Ellie: Yeah, tie it to a tree or something, and my number five is a fishing net so you can fish for food.

Carl: Hmmm

Ellie: Tony?

Tony: O.K., my number one is a 25 liter container of water so I won't die from not drinking enough water and, (chuckle) then my number two is a case of army rations so I wouldn't die of starvation, and then my number three is 20 square feet of opack ...

Barb: opaque

Tony: ... plastic sheeting so I could have shelter when it is raining, so I wouldn't get sick and umm, my number four is a shaving mirror so if a helicopter came I could shine it to the, to them. And then my number five is a can of shark repellent so they wouldn't eat me.

Carl: So the sharks won't eat you?

Tony: So the sharks won't eat me.

Carl: Well the two biggest ones it looked like was the food and water.

Tony: Food and water. (spoken at the same time)

Barb: Yeah.

Carl: So, maybe for our team ranking, what do you think is more important, the food or the water?

Ellie: Water.

Tony: Water.

Barb: Water.

Carl: You could just drink the water out of the ocean.

Barb: Who wants to drink the water ...

Tony: (interrupts) Dude, that's sick, that's like ...

Barb: True, very true.

Tony: That's like gross water, it has like disease stuff in it.

Carl: So, do you think we should do the water as number one?

Barb: Yeah.

Ellie: Uh-huh.

Carl: O.K.

Tony: Uh, I don't have a pen! Wait...

Carl: Well ... and then like ...

Barb: The next one could be ...

Carl: The food.

Barb: Yeah.

Carl: O.K., and then I think, uh, Tony's idea of the shaving mirror is pretty ...

Barb: Yeah.

Carl: Good.

Tony: That was four though.

Carl: It doesn't matter Tony because like I don't think any ...

Tony: Wait, what's the, what's the ...

Barb: What about the sextant thing so you could know where you were?

Carl: True ... right maybe like the mirror is fourth.

Tony: Yeah.

Carl: Or maybe its like five because you would send out like an SOS with the radio.

Barb: Yeah.

Ellie: Yeah.

Carl: ... and then you could shine the mirror.

Barb: Hmm

Carl: ... umm, so the sextant is three.

Barb: And then the small transistor radio is four.

Carl: Yeah, and then the shaving mirror five.

Barb: O.K., do we have to do the other ones?

Tony: Wait ... where's the radio?

Carl: Hey, Tony.

Tony: Is that four?

Carl: Yeah.

Tony: And then what's five?

Carl and Barb: The shaving mirror.

Carl: Your great idea ... umm ... and then do you want it.. well maybe like the next one, the shark repellant, cause I know I wouldn't, I wouldn't want to be, (girls talking in the back ground - only the top five) I wouldn't want to be like shining the mirror and then get ate by a shark.

Tony: Unless helicopters pick you up or something.

Carl: Yeah, but Tony, that's not on our ... so like (background sounds - symbols) ... so like the shark repellant ...

Barb: O.K.

Carl: For six.

Tony: Whoa, (background noise of symbols) O.K., O.K., O.K..

Barb: Tony stop ...

Tony: So cool.

Carl: And then do you think a fishing kit would work? Like you're under, you were like in the water though so ...

Barb: Or a floating seat cushion, so then yeah.

Carl: You could fish off of it.

Barb: Yeah, and also like you wouldn't have to be in the freezing cold water.

Tony: (Background noise of symbols) Sorry, I really had to do that again.

Barb: Tony.

Carl: Oh yeah, and so like the seat cushion is seven, and then the fishing kit kit eight.

Barb: What about, umm, the maps of the Pacific Ocean?

Tony: What is eight?

Carl: We're in the Atlantic Atlantic Ocean.

Tony: Which one is six?

Barb: Whatever.

Ellie: Shark repellant.

Carl: Yeah, but we're in the Atlantic, yeah.

Barb: Oh, never mind.

Tony: Which one is eight?

Barb: Eight.

Tony: A fishing kit.

Carl: Umm ... and then like what would the rope [be] do you think?

Tony: Two boxes of chocolate bars is seven.

Barb: No.

Carl: No, because that would, that would get you hyper for a little bit.

Ellie: ... or thirsty (quiety spoken).

Carl: ... and then you'd get really, yeah ...

Barb: What about the opaque plastic sheeting, should [it] be eight and nine?

Tony: You could put nylon rope, that could like build you stuff for shelter.

Carl: Yeah, but you're floating at sea Tony.

Barb: See, with the, with the umm ... What about the 20 square feet of opaque plastic sheeting?

Carl: Oh yeah, cause then like you could wrap, you could like cut it, you could rip it and like cut ...

Tony: ... make shelter (in background).

Carl: You could make shelter on the little thing and then you could also wrap your food in it so your food stays fresh.

Barb: Exactly ... O.K., so that's nine.

Carl: Yeah, and then like the rope, do you think [it] would be important?

Barb: Yeah.

Ellie: Or ...

Carl: Like if there is a tree, you could like make a lasso.

Tony: Where is ... Where is the nine ... where is the ...?

Barb: I don't know.

Carl: Nine ... its the, right here.

Barb: ... twenty.

Barb: Umm, and then like ...

Tony: What would ten be?

Barb: Ten is the nylon rope.

Carl: Rope.

Tony: You could, oh yeah.

Carl: Hmm, eleven.

Ellie: Chocolate bars maybe, mosquito netting.

Carl: Yeah, the mosquito netting.

Ellie: Yeah.

Tony: What do you mean mosquito netting?

Carl: Because, you could, you could ...

Ellie: Yeah, but we're in the water.

Carl: You could.

Barb: Oh, but mosquitos can bite you in the water.

Carl: You could.

Barb: Catch fish.

Carl: Oh yeah, like a fishing net.

Barb: That's what my cousin does. We have like a big net and then she catches fish. Its weird.

Carl: That's a good idea. O.K. so the fishing net is eleven.

Ellie: Eleven.

Tony: Where is it? Where is the fishing net?

Barb: Oh, I already put it down.

Tony: Where is the fishing net?

Barb: Oh ... right fishing is, uh, there.

Carl: Do you think that the oil petro oil thing would be important?

Barb: Umm ...

Tony: What would the maps of the ... that would be like fourteen.

Carl: That I think, the, I think the oil would be the least important.

Tony: No, you could use the Pacific Ocean maps to learn how to...

Ellie: Or the rum.

Carl: Yeah, but your ... yeah, its either the oil or the rum. Do you think, well, you could drink the rum?

Ellie: Why would you drink it?

Tony: You could. You could.

Carl: Yeah, you could.

Barb: I ...

Tony: Just if you didn't have any water left or something.

Barb: Yeah, I would do the oil, I don't know why.

Carl: You would drink the oil.

Barb: No, let's do the rum then ...

Carl: What? But what could you do?

Tony: What's chocolate bars?

Carl: Well maybe, maybe the radio ...

Barb: Nothing yet.

Carl: ... needs the oil. Maybe the radio needs oil.

Ellie: Yeah.

Carl: ... or something to get it working.

Ellie: O.K. lets do the oil.

Carl: So twelve?

Tony: What's eight?

Barb: Eight is a fishing kit.

Tony: Why did you erase that?

Barb: I didn't.

Carl: umm ... And then like ...

Ellie: So what is it

Barb: Number thirteen.

Carl: So now we're between the maps of Pacific Ocean ... we could, you could use that as like, uh, rain block.

Tony: Wait, what's twelve?

Barb: Or we could do the rum, the 10 liter of oil ...

Carl: O.K. and then why the rum though?

Barb: Because.

Ellie: So if you run out of water ...

Tony: What about thirteen? Thirteen would be whiskey. What would rum be?

Ellie: So if you run out of water ...

Barb: Thirteen.

Carl: And then ...

Ellie: Fourteen would probably be the maps.

Carl: O.K. and then fifteen ... Oh no, no, the chocolate bars are more important than rum and stuff. The chocolate bars are thirteen, the rum is fourteen, and the maps are fifteen.

Ellie: The rum is what?

Barb: The rum is fourteen, chocolate bars are thirteen, and the maps of Pacific Ocean are fifteen.

Carl: Yeah, but the only thing the maps could do, could be like a towel but then you'd just get wet again, so ...

Appendix M

Post-Program Discussion Group Transcript

Post-Program Discussion Group Transcript

Carl: The [most important] right is the right for free education because if you have free education then it goes, you get educated about birth control and it helps you to get a base for a job and yeah, O.K. so who agrees?

Tony: I agree ... I think our group ...

(tape stops and starts)

Tony: She's just writing it down.

Silence

Barb: It's taking a little while though ... somebody go next though.

Carl: Ah Tony, you can go next. Oh sorry, whatever your countries name is, you can go next.

Tony: Well, I did my country on Humbyville and I think we should have right not to kill people because ...

Carl: But no, but thats kind of just a want of a country, Right? Its not really up there, its more like its about rights, like the right ...

Tony: O.K. the right to vote cause if you don't get a choice ...

(laughter)

Carl: Yeah, but Tony not every country is a democracy.

Barb: So what if, what if my country wasn't democratic. Then what would happen?

Tony: Well my country is democratic.

Barb: So is mine, but I"m just saying ...

Carl: Yeah, but what if, what if there is like a chief leader, then they are not ...

Tony: I think the people in my COUNTRY ...

Carl: This isn't about just your country.

Barb: This is about ... all of us.

Tony: O.K. fine. What should happen?

(garbled comments)

Barb: ... and I think we should have the right to medical care because if people don't have medical care then they'll like ...

Carl: You'll have to pay for it.

Tony: Die.

Barb: You'll have to, you'll have to pay for it.

Carl: ... and the poor, it helps the poor people.

Barb: ... and then the poor people ... Carl, you're just ...

Carl: The right to say no.

Barb: ... and ...

Ellie: You can get computers (other people in the room?)

Barb: But like, and then well, because if you're poor you can't afford it and then they just like keep dying.

Carl: Yeah, and our population will shrink.

Tony: Yeah, I, I, I think ...

Carl: Tony, we have to all agree with this.

Tony: I, I agree, I think our group agrees. Do you agree?

Carl: Yes.

Tony: Do you agree?

Barb: Yes.

Tony: Do you agree?

Ellie: Yes.

Tony: O.K. I think, I think we should have the right to save animals from abuse because umm, animal abuse is very harsh and umm, I just think we should save them from it.

Carl: Yeah but this is ...

Barb: Save the animals from the oil spills.

Tony: Save the animals from, well, save the animals from anything, the oil spill, or abuse, or the endangered species of different types of animals.

Carl: I don't really agree.

Barb: Why not, Carl?

Tony: Why do you disagree, Carl?

Carl: I just don't agree cause like, O.K. you can either, you can like save us or you can save everybody else.

Tony: I think fine, fine, maybe ...

Carl: Yeah, cause like, cause like, if you put all your money into saving animals and like there's like some poor ...

Tony: You don't know, you don't have to pay for it, that's why its so right.

Barb: Well everybody would have to be vegetarian.

Carl: Yeah, everybody would have to be.

Tony: No, I don't mean saving animals from slaughter to eat, I mean saving animals from abuse and oil spills and stuff like that.

Carl: Yeah, but then it is abuse to murder them Tony (giggling). If I come, if I came up to you and cut off ...

Tony: No saving them from abuse.

Carl: OK, dude, If I came up to you and cut off your head and watched you run around for 20 seconds, would that not be abuse?

(giggling)

(Mrs. Prette enters room)

Tony: They are arguing over my thing, I just think ...

Carl: Yeah, we are arguing.

Mrs. Prette: Keep going.

Barb: Go.

(Mrs. Prette leaves room)

Tony: O.K., so what should I have the right for then?

Barb: Does anybody agree? (giggling)

Carl: I don't, because like ...

Tony: No, apparently not.

Barb: Because if we are stopping abuse then we'd all have to be vegetarians. I'm going ...

Carl: Just think about it, if I made you ...

Tony: O.K. fine, fine, know what Cael? I won't do that.

Carl: (giggling) If I made you force eggs out of your butt do you know how mad you would be? So you know how mad you would be.. .this is abuse!

Tony: (giggling) Yes, I would be mad if you made eggs [come] out of my bum.

Barb and Ellie: (giggling)

Carl: If I made you lay eggs ...

Tony: Yes, I would be mad, so maybe I shouldn't ... O.K.

Barb: How about if we just choose a different one?

Carl: Yeah, Ellie, give it to Ellie.

.

Tony: O.K., I'll think of one while Ellie is doing hers.

(giggling)

Ellie: O.K., umm ... the ... I think we should have the right to free speech because like you don't have to believe in one thing, like umm ...

Barb: ... so then, you're not just like following one person?

Ellie: Yeah, you're not just following one person, you can say what you want and they can't just say like, do this, you can like say ...

Barb: Say no.

Ellie: Yeah, yeah.

Carl: I agree.

Barb: I agree.

Carl: Cause, cause I agree, cause I don't think it's fair like, like if you've ever watched any of those like old movies and its like "Sir, write this speech sir," and then they talk and then ...

Tony, Barb, and Ellie (talking in the background at the same time): ... I don't think its fair to go to war. I'll just say that. O.K. yeah, ... you should have a ... Yeah. (quietly and hard to hear)

Carl: I agree.

Tony: OK, I finally made my ...

Carl: Tony, do you agree?

Tony: Yes.

Carl: Ellie, do you agree?

Ellie: Yeah.

Carl: Barb, do you agree?

Tony: I think they finally, I finally made mine and if they don't agree then I don't care. I'm not making up a new one.

Barb: We still have to make two more.

Tony: O.K., I think that we should have the right to, like not have to go to war if we don't want to.

(giggling)

Carl: O.K. ... Do you know what Tony? Wow thats ... O.K. ... so ...

Ellie: I think thats very unlikely.

Carl: So that, that ...

Barb: If you don't want to participate in the war you don't have to anyway Tony.

Carl: You don't have to.

Barb: You don't have to participate in the military and you don't have to ...

(background noise not decipherable)

Carl: Tony no.. O.K. Tony stop it...O.K. you can choose to go into the military ... you can choose to go into the military, you're not forced to, it's not like 1970's Russia.

Tony: (leaves for the washroom) OK I'll be right back.

Ellie: So far everyone's has worked except for Tony's.

Barb: O.K. We have to think of one more though.

Ellie: Umm, you can't kill each other.

Barb and Carl: That's Tony's.

Ellie: Oh.

Carl: We all disagreed.

Barb: Umm, what's another one?

(Tony re-enters room)

Tony: The right for our own religion.

Carl: The right to believe in what you want. But then again there's ...

Tony: The right, the right (yells)(giggles) O.K., I finally have it and they're going to agree, they're going to ... and if it ...

Carl: Just say it, Tony.

Tony: O.K, I think we should have the right for our own religion.

Barb: O.K.

Tony: Because I don't think we should get forced into one religion because that is sort of not good - racist. Do you agree?

Barb: Carl?

Carl: No.

Tony: Ellie, do you agree? Just agree.

Ellie: O.K.

Barb: Sure.

Tony: OK everybody totally agrees, Now what do we ...

Carl: Wait, we need one more.

Tony: The right for umm ...

Ellie: Religion, free religion.

Tony: For your own religion, the right to believe in whatever you want.

Ellie: How about you can't, the right to not, you can't be put in jail for no reason?

Carl: Yeah, but ...

Barb: I like that.

Ellie: Because like ...

Carl: Who actually does that right?

Tony: Yeah who gets put in ...

Carl: Who actually does get put in jail for ... that could be number six.

Barb: Well what if ...

Carl: I'm making six with my hands.

Ellie: Or, (pause) umm, the right to have as many kids as you want, like ...

(Barb leaves the room)

Carl: Yeah, but is that really, really, really, super, duper important?

Ellie: No.

Tony: So that one is out of the question.

Ellie: If you're going to have eight kids, or eight, you're not going to ... They can't just say you're going to have kids. Like what if you don't want to have kids?

Carl: Yeah, but is it that important? Is it going to like save the human race?

Ellie: No, it's not but ...

Carl: Yeah, that's what I thought.

(Barb re-enters)

Barb: I think we should do one ...

Ellie: It's not, but they can't just say you're going to have three kids or you can have ...

Carl: But who actually says that?

Barb: I do, wait what is it?

Carl: O.K., we're talking about, we're talking about ...

Ellie: We're talking about how many kids you want.

Carl: Yeah, but is it that important, like is it gonna be [a] life or death decision?

Ellie: No.

Tony: I don't think so.

Carl: Unless you get like some infectious disease from ...

Barb: Well, what if someone like, actually I don't even get this, I'm confused.

Carl: It's like some person might say you're going to have to have eight kids.

Tony: Yeah.

Carl: But what if ...

Tony: I actually don't think that would work really.

Carl: Yeah, because like ...

Tony: Because it doesn't happen anyways.

Carl: Yeah, it doesn't happen.

Tony: So ...

Ellie; Yeah.

Carl: O.K. Barb, O.K. Barb, I thought you had an idea?

Barb: Oh no, I don't . What about the right to ...

Ellie: Marry who you want?

Carl: Yeah, but is it life or death?

Tony: The right to marry anybody no, the right to marry any race? (background conversation between Barb and Tony resulting in, What the heck, Tony?)

Carl: No race, no race or sexism, because like that causes big wars.

Barb: Don't be racist.

Carl: No, or sexist because if I came up to like this black ... if I came up to an African American woman and [I said],"Woman can't do anything and you're black," and then like what if they started a war?

Tony: That would start a war ... that's really harsh.

Carl: That could prevent a war.

Barb: So, what are we writing down for that?

Carl: No sexism or racism.

Tony: O.K. and stop ...

Barb: Wait... we have to do this.

Carl: Yes we have to do. O.K., so (reading from the assignment sheet) *you must also decide what to do when these rights are threatened. Give 3 strategies and/or agreements to protect the rights you have For instance, oh ...*

Ellie: We already did this.

Carl: (continuing to read from the assignment sheet) *Does one country have the right to impose themselves militarily if they don't like ...* do you think that they should be able to ...

Barb: We have to do three things.

Tony: Should be able to do what?

Carl: I don't think these questions will help us find them. I don't think that the military should, you shouldn't just be able to go to a country, like, "I don't like how their ice cream is better than mine. I'm going to go murder them."

Tony: Right, go quick.

Carl: Right? You can't say that, its its, you should have to pass it through, have a good reason why you want to attack the other country or start a war.

Barb: I'm just trying to figure out what the rights are when they're threat threat, what to do when the rights are threatened?

Carl: Oh really?

Barb: Yes, Carl. (others join in)

Barb: I think we should put them in jail, if things are that bad then, well ...

Tony: I think we should kill them.

Carl: No.

Girls: Whoa.

Barb: If things were that bad then they would go to jail for however long they need to ...

Ellie: Yeah.

Carl: Yeah, like ...

Tony: Yeah, like if its minor then like don't go into jail for that long.

Carl: If its like you break a law, its like ...

Barb: Community service.

Tony: Exactly, but I don't like the day of community service. I don't think anybody did it.

Ellie: An earthquake is a new one but actually never mind, you can go.

Carl; Also, I think what they should do is they could have, should have, like they should have like something on TV, like buy some TV advertising space and be like, these are the rules and like there are serious consequences, just like use, the use the ...

Tony: Guys, lets not just have conversations lets write down stuff.

Carl: Use the scare factor, use scare factor to make sure people don't break the laws.

Tony: We have one more.

Carl: I want to listen to this after.

Tony; Yeah, that would be so funny.

Barb: O.K. what else?

Whispering: I can't think of anything else.

Carl: The scare factor, the scare factor ... you've got to scare people into "Oh, I don't want to do this."

Ellie: Do you have to go to court?

Tony: No, I think ... isn't ... can't you be put in jail for threatening? I think that's threatening?

Barb: O.K. lets just write this.

Carl: It's non-threatening and dude, its the government.

Barb: How about if we just put, you have to go to court and be judged by a fair trial?

Tony: Oh, the government.

Carl: Yeah, the government could scare ...

Carl: Really? I think ...

Barb: I don't know.

Carl: I think me and Tony have the good idea though.

Barb: What is it?

Carl: Use scare tactics, its like, its like there is serious punishment.

Tony: Me and Carl figured out scare factor.

Barb: And we're done and cut.

Carl: High five.

Tony: And stop.