

DEVELOPING METHODS FOR RECORDING AND DESCRIBING
DYADIC CLASSROOM DISCOURSE BETWEEN TEACHERS AND YOUNG
CHILDREN


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
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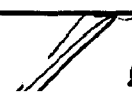
A Dissertation Submitted in Partial Fulfillment of the requirement for the Degree of
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in the Faculty of Education

We accept this dissertation as conforming to the required standard


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ABSTRACT

Studies of classroom discourse have typically focused on large or small group interaction. In contrast, this study examined one-to-one or dyadic discourse. The study's purpose was to develop methods for recording and describing dyadic classroom discourse, and to suggest ways to adapt these methods for classroom-based use. The study was exploratory and designed as an inductive inquiry grounded in the naturalistic paradigm (Guba & Lincoln, 1982), and structured by the approaches of grounded theory (Strauss & Corbin, 1990) and networks analysis (Bliss, Monk & Ogburn, 1983).

The study was conducted in three primary grade classrooms, a kindergarten, a grade one/two, and a grade three. Sampling continued for ten sessions in each setting, extending over all classroom activities. Recording methods were audio and videotaping, and description methods, transcription and coding. The conceptual structure of dyadic discourse was grounded in the classroom discourse literature and a broadly-defined working view of language consisting of features of context, structure, intent, affect and meaning.

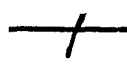
The results suggested that audiorecording and videorecording methods were both viable for recording dyadic classroom discourse, but videorecording was more reliably accurate and complete, and less intrusive.

Transcription methods considered accurate and complete, and coding methods considered insightful but demanding were described. Suggestions for adapting the methods for classroom-based use were described. Coding revealed the tacitness of teachers' knowledge about classroom discourse, and also redundancy and ambiguity in their vocabulary used to describe it. The conceptual structure of dyadic classroom discourse appeared as intricately structured, and marked by its pedagogical context, but not as substantively complex.

The study suggested that despite its individualized and pedagogical qualities, dyadic discourse does not inherently support children's substantive learning. To be effective it may require particular skills of teachers which first require that teachers' tacit knowledge of classroom discourse be made explicit. Methods developed here may facilitate this process as well as reflective practice more generally. Finally, the ambiguity and redundancy found in teachers' language may have significance for current educational debates.

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Dedication

For Dad

CHAPTER ONE

BACKGROUND TO THE STUDY

Classroom discourse¹ has been the focus of various studies since Flanders' (1970) seminal work on interaction patterns in classrooms. The study described here examined classroom discourse in primary grade classrooms. In contrast to much previous work in this area that looked at large group or small group discourse patterns, this study focused on one-to-one or dyadic classroom discourse. It was an exploratory study. Its first purpose was to develop methods for recording dyadic classroom discourse; the second purpose was to develop methods for describing it; and the third purpose was to suggest ways teachers might adapt the methods developed in the study for use in classrooms, such as for observation and reflective practice. It was intended that such adaptations might be useful for pre-service and in-service teacher training. In this chapter, the theoretical background for the study is reviewed first. The rationale, research questions, and the limitations of the study are then described. Throughout the chapter, major terms are defined as used in the study.

¹ Classroom discourse and the following terms used in this chapter are defined in the glossary in Appendix A: dyadic classroom discourse, discourse, child-centred approaches, developmentally appropriate practice, and methods.

Theoretical Background

The theoretical background to this study consists of two parts. The focus of the study was the oral language of teachers with children in classrooms, a topic known as classroom discourse. This topic is discussed first. Following is a brief description of a working view of language developed for this study. Its role is discussed in the rationale (see pp. 11-15).

Classroom Discourse

The concept of discourse has been used to describe the language between teachers and children in classrooms (Cazden, 1986, 1988). As a concept, discourse has no clear definition (Kess, 1992; Schiffrin, 1994). Schiffrin explained how it has emerged within a range of disciplines with different philosophical, theoretical, and methodological commitments resulting in different views of what defines discourse and sometimes radically different ways of examining it. However, common to these different approaches is the notion that language is structured beyond the level of the sentence, for example, as pairs of utterances, or as complete texts. Also common is the notion that language structures function in various ways to accomplish the exchange of meaning between participants in communicative events. Kess argued that "utterances in discourse carry meaning of a more intricate type than just morphemes and words, and in a very real sense are the typical means by which we transmit both ideas and intentions in

communicative exchanges" (p. 141). Some views of discourse are particularly expansive. For example, Sherzer (1987) argued that discourse embodies, filters, creates, and recreates culture. Such qualities have made the concept of discourse amenable to studies of language in the complex social and linguistic contexts of classrooms.

Classroom events are often organized around different groupings of teachers and children, and studies in classroom discourse can be categorized similarly. One group of studies has described the language of large group teacher-directed lessons (e.g., Mehan, 1979; Sinclair & Coulthard, 1975). Some large group studies have focused on the participation patterns in cross-cultural settings (e.g., Philips, 1983; Ward, 1990). Others have studied the use of language in the development of a particular concept or skill, for example, the construction of oral narratives during sharing time (Michaels, 1981; Michaels & Cazden, 1986). Another group of studies has focused on the language used in small group events, such as reading lessons (e.g., Au & Mason, 1983; Dore & McDermott, 1982).

Other types of classroom events are organized around one-to-one interaction between the teacher and one child. The accompanying discourse was termed here dyadic classroom discourse and defined as naturally occurring discourse between a teacher and one child. It is not well represented in the classroom discourse literature. However, it can appear less formal or planned than forms of classroom discourse described above, and as

such, it is sometimes referred to as conversation between teachers and children. Research related to conversation in classrooms has tended to focus on children's talk, not necessarily in interaction with adults (e.g., Halliday, 1975; Tough, 1976). One exception is Wells and Chang-Wells' (1992) work which focused on the talk between teachers and children.

In summarizing studies on classroom discourse, several observations can be made. The first is that it is still a topic that is relatively undeveloped. Second, to date, it has primarily been a study of group-based discourse excluding the genre of dyadic classroom discourse. Third, when dyadic forms have been studied, the focus typically has been on the language of the child. However, perhaps the most salient point in surveying the research in classroom discourse is its general paucity. As Wells and Chang-Wells (1992) indicated:

Given the pervasiveness of talk in classrooms, at all levels of education, it is surprising to find how little detailed attention it has received. . . . Little is known, for instance, about the types of tasks that are most likely to promote talk in which students make new and productive connections between their own ideas and those of others, nor about the types of teacher intervention that foster rather than interrupt - or worse still, suppress - such thoughtful talk. . . . curricular subjects, have tended to treat talk as straightforward and unproblematic. (p. 26)

Finally, several observations can be made about the underlying concept of language in these studies. Generally, only selected features of discourse have been mentioned, but both Cazden (1986) and Chambers (1991) argued that it is important to understand that linguistic variables need to be

considered in combination. For example, Cazden cited Schwartz' doctoral dissertation on discrimination of student differences that depended on ways of combining linguistic variables, rather than in the frequency of occurrence of any single variable. Similarly Bloome and Theodorou (1988) argued that classroom discourse needed to be examined as a composite of multiple levels. Also, Cazden pointed out that in studies of classroom discourse, it is evident that interpretation of meaning is dependent on context, and that multiple meanings exist for any surface feature. As well, she pointed to the lack of humour and affect in the accounts of classroom talk, even though both "are basic to social life" (p. 443), and to the evidence for the critical role of non-verbal elements in classroom discourse (e.g., Dore & McDermott, 1982; Mehan, 1979; & Shultz & Florio, 1979). The need for a coherent theoretical model of language within which to locate work in educational and clinical settings has been pointed out by several researchers (Lapadat, 1994; Norris & Hoffman, 1993; Prutting & Kirchner, 1987). Similarly, Schiffrin (1994) argued that the need in studies of discourse was to develop models that organize our knowledge about how discourse works and to link such models to models of language more generally.

Together, these points suggested that the concept of language in a study of classroom discourse should be broadly-described. In this study, it was decided that a broadly-described concept of language should include the range of features around which discussions in the classroom discourse literature

had been organized. These features are described in Chapter Two. However, the study also sought to broaden the conceptual base further. To accomplish this, a working view of language was developed for the study. It is reviewed briefly below and described in detail in Chapter Two.

A Working View of Language

The view of language developed here incorporates ideas from various disciplinary sources. It is understood as a hypothetical or working conceptual structure. It is discussed in three parts: first, language is discussed from a developmental perspective, and then the role of affect is discussed, and finally a notion of meaning is addressed.

A Developmental Perspective

Chomsky's 1957 publication of a theory of a universal grammar and his refutation two years later of Skinner's theory of verbal learning were a serious attack on the behaviorist tradition that had dominated North American psychology for decades, and also served to draw attention to other approaches in the study of language development (Murray, 1988). In the 1960s, attention focused for the first time in North America on the work of Piaget.

The cognitive-interactionist perspective. In Piaget's view, "language is structured or constrained by reason; basic linguistic developments must be

based upon or derived from even more basic general changes in cognition. The sequence of cognitive development then, determines the sequence of language development" (Gleason, 1989, p. 182). In Piaget's view, cognitive development is driven by a need to make sense of the surrounding world or context. However, sense, as perceived by an individual, is constantly challenged by new information presented by the world, in turn forcing the individual to reorganize his/her understanding to reestablish his/her sense that the world makes sense. Linguistic structures emerge within this sense-making function. Although Piaget hypothesized that the cognitive origins of language were inherent, his work provided the theoretical framework for understanding the dynamics of the interaction between the organism and the environment, or context. Commonly referred to as interactionism, Piaget's approach is also known as constructivism (Gleason).

The social-interactionist perspective. In recent decades, much research has taken a social-interactionist approach to language use and development. This work has helped to illuminate the connection between the development of language and the social and communicative context. Social-interactionist approaches to language development may be seen as sharing the orientation of the behaviorist tradition ascribing the force behind language learning to environmental or contextual factors. In this view, human language is seen as structured in response to the social-communicative functions it plays (Gleason, 1989).

The social-interactionist perspective appears to share assumptions of the behaviourist tradition, and so to conflict with a perspective that assumes some inherent foundation for language development. However, this is not so. Social-interactionist approaches, while not addressing the nature of innate factors, typically acknowledge that they exist (Gleason, 1989). It is argued here that the dynamics described by the cognitive-interactionist perspective provide a framework for understanding how the factors in the social-interactionist perspective function.

A cognitive-linguistic-social-interactionist perspective. The view of language in this study combines the above perspectives. The process is seen as grounded in two fundamental human needs. The first Piaget (1968/70) described as the need to make sense of the world. The second was described by Hormann (1986) as a fundamental human need to influence the surrounding world. Individuals act or function within their world to attempt to meet these twin needs.

Essential to this perspective is the notion of context which is not just the physical environment, but also the social-communicative context as described by the social-interactionists. As an individual's sense of the world meets conflicting information in the surrounding world, the individual is motivated to resolve the perceived differences. The context may be construed as demanding rethinking or reinterpretation. In turn, the individual uses the newly constructed view in acting upon the surrounding world, or

context. There is an interactive process between sense as previously constructed by the individual, or individual meaning, and sense as found in the surrounding world, or contextual meaning, a process resulting in negotiated meaning. Language is understood as integral to this interactive process being the primary means by which it is accomplished in humans. It serves various functions in accomplishing this process, and the various structures of language serve as vehicles for accomplishing these different functions. The features around which previous studies of classroom discourse have been organized were considered to be examples of such structural and functional aspects of language.

A Role for Affect

The interaction of cognitive, linguistic, and social forces in language development has been recognized (Harste, Woodward, & Burke, 1984; Hormann, 1986; Moerk, 1977). However, as Moerk stated in 1977, no coherent theory that explains how these factors interact yet exists, a statement with which few would disagree eighteen years later. A major difficulty, as pointed out by Robinson and Giles (1990), is the absence of a coherent theory of motivation, the essential force in the view described here. Some work has recognized the motivational role of affect (e.g., McCann & Higgins, 1990; Schieffelin & Ochs, 1986), but few attempts exist to account for this

component in studies of language beyond the early stages of linguistic development.

A Notion of Meaning

The interactionist perspective described above formed a background for an understanding of meaning in this study. Here it is assumed that meaning in any given event is constructed within the interaction of cognitive, linguistic, and social forces, as described above. From this perspective, two qualities of meaning were hypothesized. The first relates to the relationship between individual meaning and contextual meaning. The second relates to the relationship between structural and functional features of language and meaning. These qualities appeared very similar to two qualities of meaning Grice (1989) identified as conventionality and dictiveness. They are described in detail in Chapter Two.

In summary, the theoretical background to this study consisted of two parts. The classroom discourse literature provided broad parameters within which to locate the study. The working view of language provided a broad base for conceptualizing language in the study.

Rationale

The rationale for this study is described below. First the significance of research in dyadic classroom discourse, given current educational practice is discussed. The research problem is then described including a discussion of the role of the working view of language. Finally, there is a discussion of how this study extends previous research.

The Significance of Classroom Discourse in Educational Practice

As increasing attention has been paid to classroom discourse by researchers in recent years, practitioners and documents prepared for them have also begun to emphasize the importance of such talk. Various documents prepared by the British Columbia Ministry of Education have advocated that teachers pay attention to the role of talk in classrooms, or as it is sometimes termed language across the curriculum.

For example, one document stated that "reciprocal speech, suggested by Wilkinson as the tool for learning and akin to expressive writing, must be given the same attention as process in composing" (British Columbia Ministry of Education, 1990a, p. 22). Another example was the document Thinking In The Classroom (British Columbia Ministry of Education, 1991). It focused on the development of what was termed thoughtful learning, consisting of questioning, making connections, representing, and reflecting in the context of topics in science, social studies, and literature, which was also

the approach advocated by Blank (1985). This document provided teachers with excellent guidelines for contextualizing talk in terms of texts, problems, readers, and thinkers. Throughout the document, teachers were encouraged to establish discussions with whole groups, small groups, and individual children, and to question and elicit questions. Sample questions and comments by both teachers and students were used to exemplify the discussion. However, the focus on the language used to serve these various purposes could be described as relatively simple and intuitive, or as Wells and Chang-Wells (1992) indicated "straightforward and unproblematic" (p. 26).

Other material prepared specifically for teachers has provided a similar level of guidance. For example, Scholastic Canada, a well-known educational publisher, recently released a new anthology series for language arts in elementary classrooms. The accompanying professional text by Peetom (1993) referred repeatedly to the role of talk in language arts. The author asserted that talk is the vehicle for extended thought, in particular, in the process of comprehension or interpretation of literature. Here again, however, while it was recognized as important, classroom talk was treated as unproblematic.

The following excerpt is typical:

The trick is to encourage classroom talk that isn't restricted by a present agenda, . . . to give time and opportunity so that real engagement lights communal sparks. . . Their shared talk may bring to light all kinds of magic, found individually and collaboratively in text and illustration. (p. 84)

More specifically, Peetom advised teachers to:

provide an environment that encourages conversation of all kinds; encourage and model tentative, speculative talk; carefully attend to and value what your students say; don't direct or control the talk; ensure that what they have to talk about is relevant, interesting, challenging, worth talking about; watch (listen) for body language; [and] sometimes stay quiet yourself. (pp. 74-75)

In summary, the above documents suggest that teachers are being advised to consider classroom discourse as playing an important role in developing a learning environment in their classrooms. However, the language of classroom discourse is being treated as relatively simple and straightforward.

The Significance of Dyadic Classroom Discourse

Dyadic classroom discourse as described in this study is distinguished from references to teacher-student interaction in large groups. Dyadic classroom discourse, as understood here, refers to discourse where the teacher's focus is not on the large group but on the individual child. It appears to take two forms. The first might be considered by observers to be casual conversation with no apparent lesson or teaching focus. Typically, teachers create opportunities to engage children in casual talk, especially at the beginning and the end of working sessions or the school day. This talk does not appear to be ordered systematically in time and space, or in advance, by the teacher. The second form of dyadic classroom discourse appears more guided or lesson-focused. However, in practice, both these functions blend together within increasingly prevalent instructional strategies that are

sometimes termed child-centred approaches. One common form that such strategies take involves the teacher establishing an independent working session and then circulating throughout the room to identify and address individual needs. It is also typical for children to approach the teacher during these sessions.

In recent years, the value of dyadic classroom discourse teaching practices for the learning of children, and particularly for young children, has been encouraged by: (a) prevailing approaches to teaching emphasizing child-centred approaches and developmentally appropriate practices; (b) the increasing appreciation of the role of diverse oral language strategies in classrooms; and (c) increased awareness of the role of children's emotional involvement in their language development. These three points are all reflected in the following extract from The B.C. Primary Foundation Document (B.C. Ministry of Education, 1990b):

Children have a basic need to express themselves and learn about their world, and this leads them to communicate with others. They need to talk with other children, but more important for the extension of vocabulary and thinking are their conversations with adults. . . . It must be kept in mind that a child's use of language is directly affected by the topic of discussion and by how he or she feels about being involved in that discussion. To help sustain and enhance a child's language, the teacher must engage him or her in dialogue, that is, guided talk between teacher and child on an individual basis, in which the child receives the full attention of the teacher. (p. 181)

The potential significance of such strategies has also been stressed by several researchers. For example, Clay (1991) referred to the need for teachers to use a variety of oral language strategies with children to prepare them for success

in school generally, and in particular for the acquisition of literacy. Cambourne (1990) listed seven characteristics of teachers who had been judged as having highly effective classrooms for literacy learning. All seven characteristics were oral language strategies. The more casual conversational form of dyadic classroom discourse has also been stressed. For example, Donaldson referred to pedagogy as an extension of conversation (Grieves & Hughes, 1990), and others have commented on the likely significance of casual talk in classrooms (e.g., Chambers, 1991; Enns, 1992; McLarin, 1989). Cazden (1986) noted in her review of research into classroom discourse that forms of this language event have typically not been included in studies of classroom discourse. She stated, "it is an analysis of educationally significant talk usually overlooked as just a side sequence, or hidden from consideration outside recording range" (p. 442). As in classroom discourse more generally, it is assumed that such language plays a critical role in learning, but little attention has been paid to the underlying structures and processes of the language in these exchanges.

The Research Problem

The research problem in this study was the need to better understand dyadic classroom discourse given its significance in current educational practice and its lack of development in the research literature. Small group lessons share with large group lessons the requirement that teachers must

monitor the group as well as the participation of individuals (Green, Weade & Graham, 1988). In contrast, in dyadic situations, the teacher's main focus is the individual child, although subtle forms of monitoring the activity of the entire group are also likely to be occurring. Given this distinction, one might expect to find different or at least a different range of uses of language in dyadic exchanges from exchanges in large and small group events.

The immediate problem for research in the area was that few, if any, methods for recording and describing dyadic classroom discourse were available. This form of discourse generally occurs in a classroom context of considerable activity and talk. As well, the locations and orientations of participants are unpredictable and constantly shifting. Given these problems, it was not clear what methods for recording would provide the basis for reasonably complete and accurate transcriptions. Also, it was not known how methods taken from the broader classroom discourse literature for describing discourse samples would be applicable to this genre of classroom discourse. The immediate task of research in the area was understood as developing methods for recording and describing it. Therefore, the first purpose of the study was to develop methods for recording this genre of discourse, and the second to develop methods for describing it. The third purpose was to consider ways that the methods developed in the study could be adapted by teachers for use in classrooms. The term methods was understood to include techniques for recording and describing samples of dyadic discourse,

as well as concepts and conceptual frameworks necessary to discuss this form of discourse.

Parameters of the Research Problem

The initial design of the study was framed by the following eight parameters. The first parameter was the need to focus on dyadic classroom discourse, defined as the discourse between one child and a teacher in its naturally occurring context. The next parameter was the understanding of discourse within a broadly-described concept of language. Next, as the significance of dyadic classroom discourse has been of particular interest in the learning of young children, the study was to focus on children in the primary grades.

Two other parameters for the study were taken from assumptions about the nature of educational research. The first was an ethical consideration and assumed that research should in no way detract from the quality of a learning environment from the point of view of children, teachers, parents, or administrators. The second assumption was that educational research should address the needs of the field as closely as possible, and that teachers in classrooms where research is conducted should both contribute to and benefit from the research process, from their point of view.

Three methodological parameters further defined the study's focus. Given the lack of research in the area, the study was considered to be exploratory. This meant that it would not test hypotheses but explore possible dimensions of the language of dyadic classroom discourse. In turn, the exploratory nature of the study indicated that it should attempt to account for dyadic classroom discourse across the range of contexts in which it occurred. Finally, it was expected that the data in the study would be qualitative, and that research procedures would need to accommodate this kind of data.

The Role of the Working View of Language

The literature suggested that the concept of language for a study in classroom discourse should be broadly-described. This could be partly accomplished by considering the range of features represented in the classroom discourse literature as potential components of dyadic classroom discourse, rather than just focusing on one or two of them. However, it was assumed that developing a concept of language incorporating these elements but also integrating them into a more extensive view of language could suggest other ways to conceptualize the samples of language that might not be present in the literature. As the study was to be exploratory and the parameters of this genre of discourse not known in advance, considering a

broad range of possible features seemed appropriate. The working view of language for the study was developed for this purpose.

It was also seen to serve several other purposes. The current complexity of the field pointed to the importance of clarifying the concept of language in any work where language is the focus. In this study, such clarification was seen as particularly important as the research was intended for educational audiences. Much of the work in language has been done in fields other than education, and the transfer to education may be limited. Also, research in language in education has been criticized for its isolated and fragmentary nature. In referring to this body of research, Stubbs (1981) stated that "it is not unfair to say that many researchers seem to feel justified in picking out, as evidence, any feature of language which appears intuitively to be interesting" (p. 116). A difficulty with this task involved the interdisciplinary body of research and related assumptions contributing to contemporary language theory. However, the integration of different orientations has been advocated or undertaken elsewhere (Lieberman, 1992; Jacobs & Schumann, 1991; Resnick, 1991), and it has been argued that the blending of approaches provides a more complete understanding of the phenomenon of interest (Van Kleeck, 1986).

Finally, it was hoped that attempting to relate a study of discourse to a view of language might contribute to the demand for coherent theoretical models of language and discourse in particular for work in clinical and

educational settings. However, as Norris and Hoffman (1993) explained, a model of language has various practical purposes, one of which is to assist in naturalistic observation, and this was the primary purpose of the working view of language in this study.

Extending Previous Research

Given the significance of classroom discourse in contemporary educational practice, as described above, this study attempted to extend previous research by focusing on the topic of classroom discourse generally. More specifically, it focused on the genre of dyadic classroom discourse which appeared to have little representation in the research literature. Unlike some previous work, it focused on the language between children and teachers rather than solely on the language of children. Finally, the study attempted to extend past research in its use of a concept of language believed to be more broadly-described than has been typical, at least in studies of language in education.

Research Questions

The research questions for this study were developed to address the three purposes of the study. They were understood as constrained by the parameters of the study as described above. They were:

1. What methods for recording dyadic classroom discourse can be developed?

2. What methods for describing dyadic classroom discourse can be developed?
3. What can be suggested for adapting the methods developed in questions one and two for classroom-based use by teachers?

As described above, the term methods in these questions was understood as referring both to techniques for recording and describing discourse samples, as well as to concepts and conceptual frameworks necessary to discuss them.

Limitations

One limitation of this study was its restriction to young children. Further development and refinement of this tool would likely be necessary if the study's findings were to be useful with older students or with adults. A different range of structural and functional features might be involved in classroom discourse with these groups. Also, it was assumed that children's knowledge of conventions of classroom discourse are more highly developed in the later grades, and this knowledge would affect the quality of teacher-child discourse.

A second limitation was the population of children and teachers upon which this study is based. For populations of children and teachers that varied in any way, one might expect less applicability of the results of this study. Another limitation was that given the range of features included in the scope of the study, no single feature could be examined in depth. The

exploratory nature of the study could only provide brief glimpses of particular features rather than in-depth views of them. Finally, replication of the study design used here could be limited. Although it provided a collaborative model of research with much to be gained by participants, it is likely to be seen as intrusive and perhaps threatening by some teachers or administrators. Consequently, the methodology may be limited in its application.

Summary of the Chapter

This chapter described the theoretical background and rationale for the study, and listed the research questions and limitations of it. The study focused on dyadic classroom discourse for three reasons. First, it is not well-represented in the literature on classroom discourse. Second, it is a teaching practice being advocated for use in primary classrooms, and third, the literature provided evidence of the possible significance of this form of discourse in teaching and learning. The study was designed to be exploratory and to develop methods to record and describe dyadic classroom discourse, and ways to adapt such methods for classroom-based use by teachers. A working view of language was described. Its main purpose was to provide a broadly-described concept of language to support the exploratory nature of the study.

In Chapter Two the literature pertinent to this study is reviewed. The study design and methodology are described in Chapter Three and the analysis of the data and results in Chapter Four. Chapter Five summarizes the study and discusses the results and implications for teaching practice and future research.

CHAPTER TWO

REVIEW OF THE LITERATURE

In this chapter, the literature that provided the theoretical background to the study is discussed. This study was an investigation of classroom discourse, specifically dyadic classroom discourse. Its purpose was to explore methods for recording and describing dyadic classroom discourse, and ways to adapt such methods for classroom-based use. Methods were understood as both techniques for recording and describing dyadic classroom discourse and as the concepts and conceptual frameworks necessary to discuss it. In the literature, little elaboration of techniques for recording or describing dyadic classroom discourse was available. Exceptions were the recent works of Silliman and Wilkinson (1991) and Edwards and Lampert (1993). Relevant details are incorporated into the discussion of methodology in Chapter Three.

The literature on classroom discourse is dominated by investigations of ways to conceptualize this form of language. These investigations are reviewed in the first part of this chapter. This review provides a context within which to locate this study, and also indicates how previous studies have organized discussions of classroom discourse around two dimensions of language, structure² and function. These dimensions are then discussed in

²Structure and the following terms in this chapter are defined in the glossary in Appendix A: function, IRE pattern, contextualization cues, adjacency pairs, topic, lexical, prosodic, Whorf-Sapir hypothesis, and

the second part of the chapter within more general studies of discourse. This discussion is limited to features of discourse relevant to the study's focus on classroom discourse. In the third part of the chapter, the working view of language developed for the study is described in more detail than in the previous chapter. Its purpose was to provide a broad reference for ways to conceptualize the discourse samples in the study.

Classroom Discourse

Classroom discourse has sometimes been divided into two approaches, a process-product tradition and a descriptive tradition (Cazden, 1986). Studies in the process-product approach, or input-output models (Bloome & Theodorou, 1988), have focused on the effectiveness of given teaching approaches on student achievement. In contrast, in the descriptive approach, studies have focused on describing or defining the various elements that may mediate the process-product connection, although often providing implications for teaching practice, intentionally or otherwise (e.g., Shuy, 1988). Cazden distinguished between methodological differences in these two approaches. She stated that process-product studies used preconceived category systems to code classroom language as it occurred, but research in the descriptive tradition has typically worked from transcripts of recordings of classroom talk. Cazden also noted that the two approaches are rooted in

conversation.

different disciplinary backgrounds. Process-product studies have been grounded in a behavioural approach to studies of learning and teaching, and descriptive studies within a sociolinguistic background.

The Process-Product Approach

Classroom discourse was initially identified in studies of a process-product kind. In 1970, Flanders described his first experiences with interaction analysis in classrooms in New Zealand ten years previously. Interaction analysis rested on the assumption that teacher-pupil interaction was critical to teacher effectiveness. It was not directed at all interaction in classrooms, but rather focused on dimensions understood as affecting student attitude and achievement, such as teacher-centredness and democratic versus autocratic teaching styles (Amidon & Hough, 1967). It was believed that such analyses could "achieve understanding of teacher-pupil interaction, and, in particular, to specify conditions in which learning is maximized" (Flanders, 1970, p. 103). Among effects on learning that were studied were differences among grade levels, differences among subject areas, and effects of differences in patterns of learning in specific subject areas and in pupil attitudes. The work was prescriptive in nature, and Flanders and his colleagues were optimistic that their work would improve the effectiveness of teachers both through pre-service and in-service training.

Flanders' work (1970) and his colleagues' was significant in drawing attention to interactional patterns and their role in classroom learning (Cook-Gumperz & Gumperz, 1992). However, in focusing on causal connections between discourse structures of teachers and effects on student learning, this work neglected to describe the underlying processes by which such results were achieved (Mehan, 1979). Although there have been exceptions, (e.g., Cazden, 1988; Edwards & Westgate, 1987; Jaggar & Smith-Burke, 1985; Willes, 1983), studies of classroom discourse prepared particularly for teachers have typically taken a more prescriptive than descriptive approach. For example, Hynds and Rubin's (1990) text presented papers on various topics relating classroom language to classroom learning with recommendations for teaching practice. Similar work advocating particular forms of classroom talk has emerged in the educational literature (e.g., Brause & Mayher, 1985; Roth, 1986). As Bernstein (1990) stated, "we shall argue here that what is absent from pedagogic discourse is its own voice. . . . We do not find any systematic account of the principles of the specialized communicative practice which is the distinguishing feature of the school's central activity, transmission/acquisition" (pp. 164-165). Observations such as Bernstein's and Mehan's help distinguish between a descriptive and prescriptive approach and also point to the importance of describing underlying processes which mediate the effectiveness of particular teaching approaches. In conclusion, the process-product literature provides broad theoretical support

for the significance of classroom discourse, but not specific details about how it functions.

The Descriptive or Sociolinguistic Orientation

A sociolinguistic orientation to classroom discourse emerged in the early 1970s, when researchers in both sociology and anthropology developed an interest in this form of language (Cazden, 1986). Mehan's work has been recognized as the most influential within this orientation (Leeds-Hurwitz, 1989). His work revealed underlying structures in classroom events showing that students were required to "not only provide technically correct information in response to teacher questions, but also to provide it in the interactionally correct form" (Leeds-Hurwitz, p. 49). Mehan (1979) demonstrated that one pattern in particular dominated the classroom events he studied. This consisted of teacher initiation, student response, and teacher evaluation of the student's response, now known as the IRE pattern. It is illustrated in Figure 1 below where it is contrasted with an almost identical message, but in a conversational rather than a classroom context.

In contrast to the early interaction analysis work intended to identify effective teaching practices, the work of Mehan (1979) and his colleagues seldom attempted to be prescriptive, instead focusing on describing structures and functions of classroom discourse. This same focus on structure and function is found generally in communicative approaches to language

Figure 1. Comparison of conversation to classroom talk (Cazden, 1988, p. 30).

<u>Conversation</u>	<u>Classroom Talk</u>
What time is it, Sarah?	What time is it, Sarah?
Half-past two.	Half-past two.
Thanks.	Right.

(Robinson & Giles, 1990), and specifically in studies of language at the discourse level (Schiffrin, 1994). Although structure is understood to mean linguistic structures such as words and sentences, here it refers to structures of language at the discourse level. Function is understood as the purpose to be served by the language used in a particular event. Following is a description of how these two dimensions have been addressed in the classroom discourse literature. They are described further in the next part of the chapter with reference to the literature on discourse more generally.

Structures in Classroom Discourse

Descriptive studies of classroom discourse have described four major discourse structures in classroom language. Like Mehan's (1979), some work has described patterns in turn-taking that occur in classroom events (e.g., Au, 1980; Philips, 1983; Ward, 1990). Some work has examined turn-taking in combination with the structure of the topic (e.g., Michaels, 1981; Michaels & Cazden, 1986), while other work has focused principally on the topic structure (e.g., Harker, 1988). Another structure addressed has been the unit of discourse. For example, Cazden (1986) argued that the notion of a lesson such as a math lesson, a reading group, or a music class has been recognized as a discrete event or unit of classroom discourse.

Other work has described a set of structures, termed contextualization cues, which Dorr-Bremme (1990) argued were powerful, direct, and

immediate means of regulating discourse. Contextualization cues were originally defined by Gumperz (1982) as a linguistic form or forms "by which speakers signal and listeners interpret what the activity is, how semantic content is to be understood and how each sentence relates to what precedes or follows" (p. 131). Cook-Gumperz and Gumperz (1992) argued that classroom conversation "like verbal interaction anywhere, is guided by a process of conversational inference which relies on participants' production and perception of verbal and nonverbal cues that contextualize the stream of daily talk activity" (p. 173). Examples of contextualization cues identified by Gumperz were nonverbal structures, choices among lexical and syntactic structures, conversational openings and closings, and sequencing strategies.

Functions in Classroom Discourse

Four approaches can be identified in descriptions of function in classroom discourse. Some studies (e.g., Goodman, 1985; Pinnell, 1985) have applied schemes of language functions such as that developed by Halliday (1975) to discussions of classroom language. For example, Pinnell described and elaborated on Halliday's seven language functions: instrumental, regulatory, interactive, personal, imaginative, heuristic, and informational. Others have adopted Tough's (1976) scheme. Tough argued that teachers could evaluate their effectiveness in developing children's language use by observing the range of functions displayed by their children.

A second approach to studying language functions in classrooms has been to use the speech act theory originating in Austin's (1962) work and Searle's (1979) modification of it. Speech act theory is concerned with defining connections between a particular unit of discourse and the act or function it performs within a communicative event. Conventional speech act theory has often been adapted to studies of classroom discourse (Ramirez, 1988). One of the earliest of such applications to classroom discourse was the work of Sinclair and Coulthard (1975). Later applications of this type include the work of Dorr-Bremme (1990), Cooper, Marquis and Ayers-Lopez (1982), Wilkinson and Calculator (1982), and Lampert and Ervin-Tripp (1993).

Another approach has been to develop analytic frameworks for identifying language functions by combining various sources. For example, Green and Wallat (1981) described how they mapped large group instructional events using a coding system incorporating theoretical constructs from fields of sociolinguistics and conversation analysis, and also from the study of teaching. Green, Weade, and Graham (1988) stated that this system served both conversational and pedagogical purposes. The system included such functions as focusing, framing, ignoring, confirming, extending, bidding, clarifying, editing, controlling, refocusing, and restating. The authors stated that past research has indicated that this set of strategies, although not exhaustive, provided a systematic means of describing classroom discourse.

Still other studies have assigned functions on what might be termed a commonsense basis with little or no reference to other sources. For example, Shuy (1988) referred generally to the multiple purposes of language in classrooms and discussed differences in social versus content functions of classroom talk. Cazden (1986) described the three functions of Mehan's (1979) tripartite IRE structure as enabling the lesson to proceed, enabling student learning, and assessing student learning.

Small Group and Dyadic Classroom Discourse

Although the studies described above represented two different approaches to the study of classroom discourse, they shared a focus on large group teacher-directed interaction in classrooms. However, two other forms of interaction also occur in classrooms. These are small group teacher-led exchanges, and dyadic teacher-child exchanges, which are sometimes referred to as teacher-child conversations. Some work is available on small group interaction (e.g., Au, 1980; Collins, 1982; & Dore & McDermott, 1982). Such studies have not been markedly different in their approaches from the large group work. For example, De Stefano, Papinsky & Sanders (1982) combined constructs from the work of Sinclair and Coulthard (1975), Mehan (1979), and Halliday and Hasan (1976) as well as a computer assisted grammatical analysis tool to produce a framework for analyzing discourse in small group reading lessons.

Among the few studies that have focused on dyadic discourse in classrooms is Wells and Chang-Wells' (1992) work. They provided evidence for opportunities for children's learning in such subject areas as social studies and science through classroom conversation and interaction illustrated by many examples of classroom talk. However, like the process-product approach, they did not explicitly identify the significant features of the classroom talk they cited, leaving ambiguous the connections between children's learning and the underlying discourse.

One study that did address these features directly was that of Rogers, Perrin, and Waller (1987). Like Wells and Chang-Wells (1992), the authors included excerpts of children's conversations with teachers, but they also identified some of the same structures listed above to illustrate how different conversations progressed differently. In particular, they focused on topic structure and the use of specific syntactic structures such as different types of questions.

In summary, the process-product approach to classroom discourse has frequently been found in studies where teachers are the intended audience. However, in contrast to descriptive studies, its typically prescriptive focus excludes detailed descriptions of underlying processes by which teaching effectiveness may be accomplished. Descriptive studies have typically been organized around two dimensions of language, structure and function.

Features of these two dimensions relevant to studies of classroom discourse are discussed in the context of the broader discourse literature in the next section.

Structures and Functions in Discourse

The understanding of discourse as a concept has been developed within an array of disciplines including linguistics, anthropology, sociology, philosophy, communication theory, social psychology and artificial intelligence (Schiffrin, 1994), but with no clear consensus on its definition. However, Schiffrin argued that, in general, it has been understood in two ways. The first comes from a structuralist paradigm and sees discourse as the organization of language above the level of the sentence. The second comes from a functionalist paradigm and sees discourse as language used to realize particular purposes. Schiffrin argued that approaches in each paradigm depend on both structure and function and that "neither radical structuralist nor radical functionalist analyses are appropriate" (p.361).

Structures in Discourse

In the classroom discourse literature reviewed above, four types of structures were identified. These were the unit of discourse, turn-taking patterns, topic structure, and contextualization cues. The same major types of discourse structures have been identified elsewhere (Edwards, 1993; Prutting

& Kirchner, 1987). These four types of discourse structures are discussed below. Given the focus of this study, the discussion is limited to ways that may identify and describe these structures. Particular reference is made to studies of conversation. Like dyadic classroom discourse, conversation is relatively unplanned and is characterized by alternating face-to-face turns, often on a one to one basis, and descriptions of conversational structures may be applicable to descriptions of dyadic classroom discourse.

A Unit of Discourse

Edwards (1993) described how some units of discourse have been defined in terms of intonation, pauses, and syntactic features, or a composite of them. Units such as these tend to resemble sentences or sentence fragments, but as Kess (1992) noted, in studies of discourse, the notion of a base unit has shifted from the sentence to a larger unit. However, defining a unit of discourse or conversation for purposes of analysis is difficult (Van Kleeck, 1986), and units have been defined at varying levels of complexity (Schiffrin, 1994).

One definition is Crooke's (1990) notion of a turn. Crookes defined a turn, not as a single utterance by one speaker, as it might be commonly interpreted, but rather as "one or more streams of speech bounded by speech of another, usually another interlocutor" (p. 185). Crookes also noted that a

turn is potentially a superordinate category in that it may consist of other smaller units.

A more complex unit described by Schegloff (1984) in conversation is the notion of adjacency pairs. He argued that a unit should be defined in terms of its placement within the organization of an entire conversation, rather than defined in lexical or syntactic terms, such as questions, commands, or promises. He identified adjacency pairs, or pairs of turns, such as a question and answer. Schegloff argued that this unit was a useful tool in analyzing conversation for the reason that participants operate under the constraint that they must relate each utterance in some way to previous ones, and that each utterance is structured to reflect this awareness of its location relative to the larger unit.

Gumperz (1986) argued for a larger unit. He claimed that a unit in conversation should be a self-contained episode of interaction or an interactive exchange. This concept resembled Van Dijk's (1990) description of discourse as a "complete communicative event in a social situation" (p. 164).

Turn-Taking Patterns

Turn-taking patterns have been a particular focus in studies of conversation. In conversation, speakers take turns speaking in what is usually a relatively orderly and fluent series of transitions (Kess, 1992; Levinson, 1983). Critical to this fluency are the mechanisms for managing or

controlling the exchange of turns. The two following aspects of conversational control are relevant to dyadic discourse.

One aspect of the management of turns is the ritualized or scripted nature of much conversation (Kess, 1992). Adjacency pairs, described above, are one of such ritual exchanges. In these, an utterance by one speaker constrains and frames the form of the following utterance of the other speaker. Kess listed typical adjacency pairs as complaint-apology, greeting-greeting, and summons-answer. Kess argued that we may store thousands of the kind of clauses comprising such ritualized discourse structures in memory to retrieve and use when necessary. Similarly, conversation exhibits structure at a holistic level. Kess argued that conversations typically consist of greetings, the business at hand, and a farewell.

Another aspect of the management of conversational turn-taking is the signalling of the completion of turns (Levinson, 1983). Scripting in conversation depends on verbal information. However, signalling typically depends on cues that are nonverbal or nonvocal such as gaze, pausing, and intonational structures.

Topic Structure

Within a unit of discourse, four aspects of topic can be discriminated. These are selection, introduction, maintenance, and change (Prutting & Kirchner, 1987). Topic selection and change can be thought of as the

integration of a topic into a segment of discourse. Topic introduction and maintenance can be thought of as the organization of a single topic. Norris and Hoffman (1993) described eight levels of complexity of topic structure in classroom language use with young children. The lowest level they described as simply a collection of ideas with changing topics. The other seven all described a single topic within a segment of discourse. In order of complexity they were: a descriptive list, an ordered sequence, a reactive sequence, an abbreviated structure, a complete structure, a complex structure, and an interactive structure.

Contextualization Cues

Gumperz (1982) argued that contextualization cues were a crucial ingredient in an analysis of conversation. This statement was based on his conceptualization of conversation as an act of inference in which the task of participants was a constant locating of the conversational process within a wider contextual framework in an attempt to make sense of the exchange. As Tannen (1989) explained, the meaning of a given utterance requires "a broad grasp of conversational coherence: where the utterance came from and where it is headed, [and] how it fits into a recognizable schema in terms of the organization of the discourse and of the interaction" (p. 10). The knowledge contributes to the interpretation of what others mean (Schiffrin, 1994). This

process is not usually articulated explicitly but rather is inferred through contextualization cues.

Gumperz (1982) identified a variety of contextualization cues. These included: (a) lexical and syntactic options ; (b) code, dialect, and style switching processes; (c) formulaic expressions; (d) structures used to open or close conversations, or to sequence them; (e) nonverbal information including intonation, stress, rhythm, loudness, pauses; and, (f) nonvocal cues such as gaze direction, proxemic distance, kinesic rhythm or timing of body motion or gestures. Gumperz claimed that these contextualization cues occur on several levels such as co-occurrent selections of prosodic and lexical options.

Functions in Discourse

The notion of language function rests on the observation that the conveying of information coded into syntactic and lexical components is likely only a small, though necessary aspect of the understanding of language (Levinson, 1983). The function of conveying information is sometimes known as the referential , propositional, or simply informational function of language (Kess, 1992). Acting referentially, words are signs that refer to physical objects such as chairs, non-physical objects such as unicorns, social objects such as events, or other aspects of the real world. When language is functioning referentially, it makes true or false statements about the real

world. However, language also serves other functions other than the referential (Griffin & Mehan, 1981). In describing his theory of speech acts, Austin (1962) argued that all uses of language perform some social or interactive function.

The notion of language function is often associated with Austin (1962) and his theory of speech acts. However, it predates Austin as well as the concept of discourse generally. Lyons (1977) and Levinson (1983) described studies of language functions dating back to the early part of the century. The major approaches to language functions are described below followed by a description of the major approaches to speech acts. The third approach identified in the classroom discourse literature combined sources from these two approaches and is not discussed separately here. The fourth approach which used commonsense descriptors is not discussed further.

Classification Schemes of Language Functions

The major studies of language functions are summarized in Figure 2. They are described briefly here, followed by a discussion of problems associated with this approach.

Buhler (1932) described a scheme for classifying language functions that was organized around the notion of sender, receiver, and the external situation which was the reference for the message. A message was classified according to its emphasis on one of these points. This scheme was later

Figure 2. Major classification schemes of functions of language.

<u>Source</u>	<u>List of Categories</u>
Buhler (1932/1982)	<ol style="list-style-type: none"> 1. Emotive - focus on sender 2. Conative - focus on receiver 3. Referential - focus on message
Jakobson (1960)	<ol style="list-style-type: none"> 1. Referential - denotative, conotative; focus is on the context, the passing on of information 2. Emotive - focus is on the sender, conveying information about emotional state of speaker 3. Conative - focus is on the receiver, sender attempts to create some effect in receiver (e.g. the imperative) 4. Phatic - focus is on the contact or relationship between sender and receiver 5. Metalingual - focus is on the code in use 6. Poetic -focus is on the form of the message
Eccles (1989)	<ol style="list-style-type: none"> 1. Expressive - expressing inner emotions or feelings, e.g. human cries, laughter (revealing/not revealing) 2. Releasing or Signalling - sender attempts to create some effect in receiver such as danger signals (efficient/inefficient) 3. Descriptive - a description of experience (true/false) 4. Argumentative -critical argument (valid/invalid)
Bateson (Leeds-Hurwitz, 1989)	<ol style="list-style-type: none"> 1. Identity - identity of sender is provided 2. Denotation - connects current communication with other events 3. Codification - relates current communication to larger culture 4. Command - addressed either to self or other and calls attention to a given cue 5. Relationship - statement about relationship between participants 6. Framing - provides contextualization cues

Figure 2. Continued

Halliday (1975)	<p>Early Schema</p> <ol style="list-style-type: none"> 1. Instrumental - to meet personal needs 2. Regulatory - to control the behaviour of others 3. Interactional - to mediate relationships 4. Personal - to express feelings and identity 5. Heuristic - to investigate reality 6. Imaginative - to create an environment 7. Representational - to express propositions
	<p>Later Schema</p> <ol style="list-style-type: none"> 1. Interpersonal - to relate to others, to express personal values and attitudes, to attempt to influence others 2. Ideational - to use language for thinking, organizing and expressing experience 3. Textual - to use knowledge of language to create oral or written texts
Tough (1976)	<ol style="list-style-type: none"> 1. Self-maintaining - to maintain rights and interest of self 2. Directing - to direct own and others' actions 3. Reporting - to describe present or past experience 4. Logical Reasoning - to reason about experience 5. Prediction - to anticipate future experience 6. Projecting - to examine situations outside one's own experience 7. Imagining - to create a scene

elaborated by Jakobsen (1960) who added three functions to Bühler's. These were functions that emphasized the relationship between participants, the code in use, and the form of the message. Eccles (1989) added one function to Bühler's scheme. He described this scheme in developmental and comparative terms. He argued that the expressive and signal functions are shared by both animals and humans, while the descriptive and argumentative functions are found only in human language. He also argued that these four functions represent increasing sophistication of use as children's language develops, with the argumentative function representing the most sophisticated use of language. Bateson's classification of language functions was summarized by Leeds-Hurwitz (1989), who attempted to compare them with Jakobson's. However, she explained that Bateson's primary interest was in metalingual qualities and so most of his functions can be seen as combinations of a metalingual aspect and some other focus.

The classification systems of Halliday (1975) and Tough (1976) have been frequently cited in studies of children's language. Halliday was instrumental in introducing the notion of function, or relevance as he termed it, to educational audiences, and Tough's work has been frequently cited in material prepared for teachers (e.g., British Columbia Ministry of Education, 1990b). Halliday developed his set of functions based on observations of young children's language development. While Halliday's seven category scheme is most often cited, he originally presented these as

describing language emergence in the first two years. He argued that later the seven functions consolidated into two, the interpersonal or pragmatic function, and the ideational or mathetic function, with a third developing still later, called the textual function. Tough developed her categorization system from observations of preschool children with their mothers and young children in schools. It was developed specifically as a tool to aid teachers in observing children's language.

Although the above schemes are organized differently, several commonalities can be observed. All the schemes identify at least one type of referential function. An expressive function was included in four of the schemes, and all included at least one function relating to the speaker, audience or the relationship between them. This triad of referential, social, and expressive functions has been used to summarize language functions (Cazden, 1988; Lyons, 1977; Schiffrin, 1994).

Problems with Classification Schemes of Language Functions

Several problems with the conceptualization of language functions in classificatory schemes have been identified. Hamilton (1986) and Leeds-Hurwitz (1989) argued that language was essentially multifunctional, a quality not readily apparent in the classificatory schemes. Leeds-Hurwitz also discounted the viability of a short checklist of potential functions, despite its attractiveness as a research tool. Instead she argued:

We should probably spend more time paying attention to the various functions of behaviour. It is difficult to do, for we all want to find the single meaning behind a behaviour, and to have to handle multiple interpretations makes the analyst's job more difficult, but once we recognize that various functions can be fulfilled simultaneously, it is up to us to study how the process works. (p. 138)

Another problem, also noted by Leeds-Hurwitz (1989), was that the term language function had two different interpretations. It was not clear whether it signified the intent of the speaker, or the effect accomplished by what was spoken. As Lyons (1977) observed, it has been a frequent misunderstanding that intent and effect are identical when they are not, and it is a difference that must be recognized theoretically.

Another problem noted by Lyons (1977) was a blurring of lines among particular functions in the different schemes. Levinson (1983) stated that such schemes seem too broad, too vague, and have no clear empirical connections. Finally, both Levinson and Lyons noted that there is no consensus on one single correct scheme.

Classification Schemes of Speech Acts

Similar to schemes of language functions are categorizations of speech acts (Levinson, 1983). Derived from the linguistic philosophy of Austin (1962), and developed by Searle (1979), the notion of a speech act can be understood as addressing the notion of language function more

specifically. Like the schemes of language functions, a triad of referential, social, and interactive functions can be identified in these schemes.

Variations on the original schemes have been developed. For example, Dore (1978) developed an eight category scheme to describe the development of language functions in young children. Lampert and Ervin-Tripp (1993) described a coding system focused only on describing how verbal and gestural features are used to control the behaviour of others. Three examples of schemes of speech acts are summarized in Figure 3.

Problems with Classification Schemes of Speech Acts

Ervin-Tripp (1982) identified a similar problem with systems of categorizing speech acts as found in schemes of language functions. She noted that in the use of speech acts as an analytic tool, it is assumed that the acts being investigated can be defined by "activity sought in the addressee or in goal state" (p. 30). In other words the same confusion over speaker intent and intended effect was observed. As Kess (1992) explained, according to speech act theory, every sentence is designed to accomplish some function such as informing, warning, questioning, or demanding. This is the intended effect or illocutionary force of the sentence. This is distinguished from the perceived or received effect, or perlocutionary

Figure 3. Three classification schemes of speech acts

<u>Austin's Speech Acts</u>	<u>Searle's Speech Acts</u>	<u>Lampert & Ervin-Tripp's Speech Acts</u>
Verdictives: to present evidence or evaluate the truth (e.g., explain, describe)	Representatives: to commit the speaker to the truth of a proposition(e.g., state, suggest, insist)	Directives or Positive Requests: to require audience to do something
Exercitives: to decide or recommend particular actions (e.g., command, direct, suggest)	Directives: speaker attempts to have audience do something (e.g., order, command. would like , request)	Prohibitions or Negative Requests: to require audience to stop or avoid an action
Commissives: to commit speaker to an action (e.g., promise)	Commissives: to commit speaker to a future action (e.g., promise, offer)	Permissions or Allowances: to request or grant permission to do something
Expositives: to extend speaker's views(e.g., deny, illustrate)	Expressives: reveals speaker's affective or psychological state (e.g. thank, apologize, greet)	Intentions: to commit the speaker to an action where audience is expected to cooperate
Behabitives: to provide speaker's reactions to others (e.g., complement, criticize)	Declaratives: to change a current state of affairs in a formal context(e.g., christen, appoint)	Claims: to require audience to recognize speaker's right to actions or materials
		Offers: to invite audience to accept something

Note: Austin's and Searle's classifications are adapted from Kess (1992); Lampert and Ervin-Tripp's scheme is adapted from Lampert and Ervin-Tripp (1993).

force which is defined as the goal or purpose of the speech act but understood as achieved. Understood this way, perlocutionary force deals with the effects on a speaker. As Kess noted, this is a behavioral question and beyond the domain of philosophers of language, and the study of speech acts is better understood as the study of intent or illocutionary force.

A second problem that Ervin-Tripp (1982) observed was that almost every message can be understood as effective in several ways. In other words, messages are multifunctional. A third problem she noted was the pervasive embedding of one unit within previous ones, and she stated that "most existing interactional codes are relatively shallow in the strata of analysis they address by not seeing moves as realizations of larger plans" (p. 31).

In summary, the above discussion described four major discourse structures. These were the unit of discourse, turn-taking patterns, topic structure, and contextualization cues. The discussion focused on ways to identify and describe these structures. Two major approaches to functions in discourse were also discussed. These were language function schemes and speech act theory. In both a triad of social, referential, and expressive functions could be identified. Problems with both these approaches were identified. These problems were the multifunctionality of given units of

language, the confusion in reference to intended effect and felt effect, and the vagueness of categories. Another criticism associated with speech act theory but also applicable to language function schemes was the notion of each act as a discrete unit instead of as embedded within a more complex scheme. Most of the studies described above examined either structural or functional features exclusively. Here, it was assumed that both types of features needed inclusion in a broadly-described concept of language.

A Working View of Language

The above discussion was organized around a structural/functional perspective to language. The working view of language developed here is organized differently. It is discussed below in three parts. First, it takes a developmental perspective to understanding language which incorporates both structural and functional features. Next the role of affect is discussed. The third part builds on the developmental perspective and addresses a notion of meaning.

A Developmental Perspective

To construct a developmental perspective on language within a cohesive theoretical background has become an increasingly difficult task. As noted by Gleason (1989), the number of diverse topics making up the field, many with their own specialized literature, has grown immensely in

the last decade. The field has become interdisciplinary, and contributions from diverse disciplines are often credited (e.g., Jaggar & Smith-Burke, 1985; Moerk, 1977). At the heart of much of this research has been the dispute over the relative contribution of biological and environmental factors, or what has been termed the empirical-nativist issue.

The Empirical-Nativist Issue

Perhaps one of the single most significant pieces of work in the language development literature was Chomsky's (1957) publication of the notion of a universal grammar and his later hypothesis of a language acquisition device or a LAD (1965). Chomsky argued that language acquisition was dependent on this innate language structure, the LAD, that provides a limited set of principles found in all languages, or as it is generally known, a universal grammar. He also argued that this device was identical in all humans.

Chomsky's arguments contrasted with prevailing behaviorist arguments that language was best understood as verbal learning and governed by the same laws of learning that had been defined by Skinner and others based on notions of imitation and reinforcement (Endler, Boulter, & Osser, 1968). As Donaldson (1978) explained, in this view, the learner was seen as passive, and learning was dependent on the

occurrence of events and the providing of a linguistic association with a given event.

In recent decades, the biological base for language has been extended on various fronts. Some research has examined animal communication systems. This has included Von Frisch's (1967) Nobel Prize winning studies of communication in bees, and the intriguing attempts to teach primates to use human language (e.g., Premack & Premack, 1972). Other work has focused on the evolution of communication in animals and humans (e.g., Eccles, 1989; Lieberman, 1991), and has helped to establish the distinction between human and animal communication systems and to try to account for the evolution of the unique qualities of human speech and language. There are also studies that have looked at the neurological bases for language development and processing (e.g., Loritz, 1991; Pinker, 1994). Although a biological base for language learning may seem self-evident, it was only in 1968 that Bell provided evidence of children, as well as their mothers, directing their own language learning processes, and despite considerable research in the intervening years, a Skinnerian legacy is still prevalent in many places, especially in schools.

However, the contemporary notion of an innate foundation for language differs from Chomsky's notion of a language-specific device. As argued by Lieberman (1991), "although nativist linguistic theory is clothed in the garb of biology, it overlooks a key principle of biology that has been

understood since Darwin's time - genetic variation" (p. 131). Lieberman argued that given the nature of genetic variation in humans, it was biologically impossible to inherit a device that was so uniform across all humans. The comparative psychology literature has been helpful in clarifying this concept. Innateness is understood as a predisposition to certain forms of development. This predisposition is wired in, for example, in forms of processing abilities, potential for fine motor development, categorization abilities, and the proclivity to attend to certain stimuli (Menn, 1992). Such a predisposition is not adequate for development. Environmental experience is also required.

In recent years, the empirical-nativist argument has settled in favour of a combination of genetic and environmental factors (Gleason, 1989), and the issue has become the nature and amount of the genetic and environmental contributions and their interaction (Menn, 1992). Two perspectives on language development have emerged out of this issue. One is a cognitive-interactionist perspective and the other is a social-interactionist perspective. In the former, there is more emphasis on inherent cognitive processes and in the latter, more emphasis on environmental social forces. These two perspectives are described below.

A Cognitive-Interactionist Perspective

Lieberman (1991) rejected Chomsky's notion of a modular language acquisition device, and, like Eccles (1989), used studies in evolutionary theory, the neurosciences, and the structures of the vocal tract to argue that the capacity for language was inherited, but that it was located in neural processes linking cognition and language. He argued that the traditional language area in the brain, Broca's area, was involved, but was not adequate to support human speech. Instead, he argued that the prefrontal cortex was the neural base for speech production, syntax comprehension, and thought. Lieberman argued that we "probably learn many, if not all, of the automatized motor control patterns and rules of syntax by means of general cognitive mechanisms" (p. 142). He argued that the evolution of rapid communication processes developed the highly efficient information-processing mechanisms typical of human thought. As he pointed out, a key feature of syntax and morphology is the capacity for creativity, or the production of novel sentences, a capacity matched by human cognitive ability to apply knowledge or principles learned previously to solve novel problems. Lieberman's argument supports the school of thought referred to as constructivism or interactionism that is grounded in Piaget's work (e.g., 1968/1970).

Piaget and inherent cognitive processes. Piaget's work (e.g., 1968/1970) has received constant scrutiny over the years, undergoing

revision in the process. However, it is still regarded as the most significant contemporary influence on cognitive developmental theory, and his conceptual framework is expected to continue to underlie work in the field in the future (Beilin, 1992; Berk, 1993; Murray, 1988). As well, despite his lack of emphasis on language, Piaget's work is recognized as having been a major force in research into communication (Hamilton, 1986). Moerk (1977) argued that although the terminology may vary, a cognitive-Piagetian approach is almost universally accepted in the language development literature.

Like Chomsky, Piaget (e.g., 1968/1970) argued that language development and use had an innate base. However, Piaget argued that it was not language structures themselves that were inherited, nor were they learned as in the behaviorist view of learning. Piaget shared the comparative psychologists' view of innateness. He argued that cognitive functioning consisted of biologically predetermined processes out of which fundamental cognitive structures developed. These processes he called assimilation and accommodation. Assimilation is the process by which new activities or observations are connected to old ones. Accommodation is the process of modifying the existing assimilation processes.

Piaget (e.g. 1968/1970) argued that the activity of coordinating one's own acts through the reciprocal processes of assimilation and

accommodation was generic to all human intellectual activity including language. According to Bates and Snyder (1987), in this view, language is structured by the interaction of these innate cognitive processes with environmental factors. They explained that "the semantic and grammatical structures of language are the inevitable set of solutions to the problem of mapping certain nonlinguistic, cognitive meanings and social intentions onto the highly constrained linguistic channel, and vice-versa" (p. 171).

However, it is important to note that in Piaget's (e.g., 1968/1970) view, the linguistic knowledge developed by a child through this interactive process is the same linguistic knowledge as the other speakers in his/her linguistic community. He argued that the language that is learned is not unique. On the contrary, he stated clearly: "Language is a group institution. Its rules are imposed on individuals. One generation coercively transmits it to the next" (p. 74).

Donaldson's contribution. Piaget (e.g., 1968/1970) provided a theoretical framework for understanding language development as an active, constructive goal-oriented process motivated by the need to make sense of one's world. Donaldson (1978) also saw the young child as the active constructor of his/her own meaning within his/her environment. She argued that what was primary to language was a process she called sense-making in which "we do not just sit and wait for the world to

impinge on us. We try actively to interpret it, to make sense of it. We grapple with it, we construe it intellectually, we represent it to ourselves" (p. 68).

In testing Piaget's ideas experimentally, Donaldson (1978) observed a systematic quality to children's errors. She claimed that the children in her studies lacked the ability to separate the literal message from the context and process it separately. She argued that this knowledge of how language and context interrelate was not yet developed in the children causing them to make mistakes on the Piagetian tasks. She argued that when children had experience within a context, they depended on salient features of the context which overrode the literal form of a question if it contradicted their expectations based on experience. Their answers to the questions posed in the experimental situation indicated that they were relying on expectations of the speaker's intentions and on salient contextual cues, and that they made mistakes because of their inability to separate the literal message from other sources of information.

Fundamental to Donaldson's (1978) argument was the idea that children make inferences about the meaning of a question based on past experience and current context. Her work suggested how cognitive processes, experience, and context interact in the use of language. She argued that a child "first makes sense of situations (and perhaps especially those involving human intention) and then uses this kind of

understanding to help him [or her] to make sense of what is said to him [or her]" (p. 59).

Donaldson's (1978) view of language was different from Piaget's (e.g., 1968/1970). Instead of language seen as a discrete commodity handed intact from generation to generation, Donaldson's work illustrated how language could be seen as involving elements of hypothesis formation, inference making, interpretation, or perhaps decision-making.

Donaldson's work provided a framework for understanding language development as a process that involves construction of meaning that is an interpretation rather than a replication of the meaning of others.

Meaning may be hypothesized as unique to different participants, at least to some degree.

The constructivist perspective. The work of Piaget (1968/1970) and Donaldson (1978) is fundamental to the perspective known as constructivism. In the constructivist approach, "human experience is the construction of reality, not a property of a physical world that imparts the same experience to everyone who encounters it " (Scarr, 1992, p. 5). It is important to note that while such a view would be amenable to existential belief systems, the constructivist view is not necessarily an existential one. It does not assert that reality exists only as it is constructed by the individual, but rather that perceptions of reality are unique and can never be assumed to be a precise map of reality, nor are they assumed to be

equivalent to the perceptions of others (Bates & Snyder, 1987; Resnick, 1991). The way that a child reasons about the world will guide the way a child approaches a linguistic task, and as children's cognitive processes vary so may their linguistic capacity (Gleason, 1989). In a constructivist perspective, inherited cognitive processes are essential to cognitive and linguistic development, but not sufficient. Experience and environment are also necessary.

A Social-Interactionist Perspective

Social-interactionist approaches have produced a voluminous literature detailing the connections between social and environmental factors and language development, and they represent a range of theoretical commitments. For example, researchers in the area of language socialization have argued that the notion of language socialization is complementary to the Whorf-Sapir hypothesis, and that all vocal and verbal activities are understood as being "socially organized and embedded in cultural systems of meaning" (Schieffelin & Ochs, 1986, p. 164). However, Schieffelin and Ochs also argued that children are socialized through the use of language and also socialized in their use of language, apparently envisioning a more interactive process than was understood by Sapir and Whorf.

Giles and Coupland (1991) described what might be termed a modified Whorf-Sapir approach. They argued that there has been a substantial shift in the understanding of the relationship between speaker and context. Instead of both speaker and context defined by a set of static cues, the speaker is seen as part of a dynamic social relationship. They described how language is determined by the social context, and also how language determines it. They termed this a transactional view of context in which contexts are seen as constantly evolving, and where individuals are seen as both products and producers. They argued that social and personal identities and other aspects of contexts are negotiated and constructed in a language event.

Typically, social-interactionist approaches have not made any claims as to causation or primacy, and have left ambiguous the connections among contributing factors. For example, some have simply claimed that language is socially constructed (e.g., Bloome, Harris & Ludlum, 1991; Halliday, 1978; Harste, Woodward & Burke, 1984; Hedley, 1985; Minnini, 1990). Others have proclaimed the importance of social and contextual factors in studies of language learning (e.g., Jaggar & Smith-Burke, 1985). Still others have established their purpose as one of describing the patterns of behaviour found in socially organized interaction (e.g., Atkinson & Heritage, 1984; Kendon, 1990) making no claims as to the controlling mechanisms of the described process.

A common theme in this work is the call to view language as a form of social interaction in which social relations, belief systems, and ideologies are constructed and reproduced through linguistic forms (e.g., Threadgold, 1986). The work on language and schooling has typically been located within this approach. For example, Heath's (1983) seminal study contrasted the language socialization of children in three communities in the southeastern United States. Her work demonstrated the powerful role of these social forces as well as the significance of different forms of language socialization for children entering the culture of the school. Cook-Gumperz and Gumperz (1992) argued that research in language and schooling has helped in understanding that learning is not a simple process of transmission in which teachers' words are simply absorbed by students. Instead, learning is seen as depending on the quality of interaction, which in turn depends on the system of social relations in the classroom. They claimed that microanalytic analyses of interaction patterns in social contexts were critical to understanding how learning in classrooms was or was not supported. The classroom discourse literature has emerged within this theoretical position.

Work within a social-interactionist perspective has provided much insight into the powerful role of the social order in language learning, but sometimes this focus appears to have obscured the role of the individual child in the process. However, as Schieffelin and Ochs (1986) noted, the

perspective is grounded in Mead's (1957) theory of symbolic interactionism. Mead disagreed with earlier views of the individual as a relatively passive being who internalized the values of the surrounding society. In Mead's view, "the organization of the self is simply the organization, by the individual organism, of the set of attitudes toward its social environment - and toward itself from the standpoint of that environment" (p. 91). As Schieffelin and Ochs explained, "individuals (including young children) are viewed not as automatically internalizing others' views, but as selective and active participants in the process of constructing social worlds" (p. 165).

Mead's (1957) symbolic interactionist theory laid the groundwork for understanding how socialization processes for language learning mean that understanding by an individual must involve the individual struggling to connect his/her own individual meaning to that found in the surrounding context, or to the contextual meaning. As Snow (1977) pointed out, mothers don't talk at or to their children, but with them. Seen this way, the social-interactionist perspective appears complementary rather than contradictory to the cognitive-interactionist perspective.

An Alternative Perspective

Hamilton (1986) stated that the "enriched view of language that emerged during the 1970s" (p. 79) indicated a need for a theory of

cognitive-linguistic learning that also incorporates the context of communication, especially the sociolinguistic context. Hamilton's statement suggested that cognitive, linguistic, and social forces need to be integrated into a single perspective on language. This section discusses how such an integrated perspective may be conceptualized.

Vygotsky's contribution. Vygotsky (1978) hypothesized that children's cognitive development involved an inextricable linkage between objects and events in the surrounding context and internal symbols. Critical to Vygotsky's theory was the notion that all functions in a child's development occur twice: first in a social context, and second internally. For example, young children may display gestural and verbal forms of good bye that are contextually appropriate given encouragement by their mothers. For the child, the action may be made but with no knowledge of its significance. Later he/she may begin to use both gestural and verbal forms independently, but not in the appropriate contexts. Still later, independent usage will become contextually appropriate. Gradually, the action is understood for its communicative significance and used purposefully and appropriately for such communication. Then it is considered to be internalized within the child (Foster, 1990). Vygotsky's description of the role of the social and linguistic context matches Piaget's (1968/1970) description of the role of the physical context in which children's initial sensory and motor explorations in a given context

provide them with information which feeds an inherent need to make sense of the world. Gradually children's understanding is reorganized to include the information provided from that context.

Vygotsky's (1978) theory about learning and symbolization as first social and then personal is critical to one of his best known concepts, the zone of proximal development. This notion is of particular interest to teachers of young children. It reflects the range of tasks beyond the level of learning at which a child is operating independently, but that a child can perform, given the support of adults. By performing the tasks, the child gradually develops understanding and control of them and begins to function independently at a higher level.

Although Vygotsky's (1978) work was theoretical, there is some empirical evidence supporting it. Hausendorff and Quasthoff (1992) described a study in which children's narrative production with adults was experimentally manipulated. The results indicated that the adults adapted their strategies to establish the narrative task differently to meet different expectations they had for children of different ages resulting in more or less sophisticated narrative production by the children.

A cognitive-linguistic-social-interactionist perspective. Resnick (1991) credited Vygotsky and Mead with being the first to express the connections among language, culture, and cognition. As Resnick explained, while much of human cognitive processing has a biological

foundation, constructivist theory has helped explain how social and linguistic processes interact with cognitive processes to shape the construction of knowledge. In the area of conversation, Schegloff (1991) argued that the theoretical background has developed to the state of seeing conversation as inextricably intertwined with cognition, or as he put it, situated within socially shared cognition. One example of such an interactive process was Genishi and Di Paolo's (1982) investigation of how preschool children's learning was advanced through argument. They concluded that children learned certain kinds of academic content through the resolution of differences by argument. However, the children they studied seemed primarily motivated not by a need to resolve the substantive issues, but by a need to control others and a need to assert their own importance.

Although no coherent model explaining the interaction of these forces currently exists, attempts have been made to construct one (e.g., Hormann, 1986; Moerk, 1977). Like Donaldson (1978), Hormann grounded his theory of language development in a fundamental human quality of sense-making. As well, he stated that there was a fundamental human need to influence the surrounding social world. He argued that language emerged in the interaction between the need to make sense of the world by adjusting one's knowledge of the world and one's place in it, and the need to influence it. Hormann further argued that while this

process begins before the use of language, language emerges as a mediator that facilitates and extends this process. Similarly, Moerk described a model of language development grounded in Piaget's approach, but encompassing social factors to describe a process that depends as much on children's active hypothesis formation and testing, as it does on informational and motivational feedback. Here this integrated perspective was termed the cognitive-linguistic-social-interactionist perspective.

Given this perspective, language is understood to function to communicate individual meaning and to attempt to influence the surrounding world. In turn, it functions to communicate contextual meaning to the individual. Contextual meaning can refer to information found in the physical world that differs from the individual's sense of that world. However, when contextual meaning is also social and linguistic, it represents meaning as construed by others, and individual meaning is understood as challenged by the social as well as the physical context. The structures of language, such as words, sentences and more complex units of discourse, serve as vehicles for this process and may shape or be shaped by it. Also, language itself is part of an individual's world and, as suggested by Lindfors (1985), an individual is constantly constructing and revising hypotheses about language, its structures, and its uses. The recursive nature of this process suggests that every linguistic construction is contextually embedded, implying that meaning in any

communicative event is found partly within the linguistic structures used by the speaker, and partly within the context that framed it and its function within that context.

Within this process, meaning emerges as negotiated between individual and contextual meaning. As an individual then makes new discriminations, further distinctions between individual meaning and the newly negotiated meaning are created requiring further negotiation. Through this interactive recursive process, individuals observe, influence, and adapt to their world.

The Role of Affect

While no coherent theory exists to connect the motivational role of affect with language, it was assumed here that its role needed to be acknowledged. In a review of the topic, Winton (1990) identified five major questions needing attention, three of which are relevant here. These were: (a) the need to develop a lexicon for describing affect; (b) the nature of the relationships between verbal and nonverbal channels as compensatory versus redundancy in carrying affect; and (c) the need for a theory that links cognition, language and affect. The scope of these three areas indicates the as yet undeveloped state of the field. However, as Mathewson (1985) noted, the lack of research is likely due to the difficulty in defining affective concepts.

At the same time, support for the significance of the role of affect in a theory of language is considerable. It has been argued that the earliest forms of meaning in exchanges between mothers and infants are affective (Fernald, 1984). One example may be the one described above of children learning contextually appropriate ways to gesture and say good bye. The first use of these forms does not appear to have communicative significance for the children since when they begin to use them independently, they are often used in inappropriate contexts. Instead the early first usage of these forms may be part of the affective bond between adult and child.

These two points, the relatively undeveloped state of research into affect, and its apparent significance have received recent attention. Hayes (1992) pointed out the marked absence of attention to issues of motivation in the cognitive psychology paradigms. Speaking directly to researchers in literacy, Hayes argued that the role of motivation was crucial and should be high priority in such research. Similarly, McCann and Higgins (1990) noted that traditional communication models have ignored "the essential affective quality of the self" (p. 25) and argued that a coherent theory of motivation was a critical problem for ongoing research into communication.

A Notion of Meaning

In the working view of language developed here, the relationship between language and meaning was seen as uncertain. However, it was assumed that any understanding of language required a consideration of meaning. It was further assumed here that meaning in any given event includes the structural and functional features that enact the interactive process described above. However, it was also hypothesized that meaning has qualities that represent more than the sum of these parts. Meaning was also conceptualized as consisting of relationships among these parts. Two types of relationships were hypothesized. The first was the relationship between individual and contextual meaning, and the second, between structure and function. These two types of relationships were considered similar to the two qualities of meaning Grice (1989) termed conventionality and dictiveness.

Conventionality

The view of language described above suggests that in any communicative event there is an ongoing process and negotiation of meaning between individual and context where context is understood as both physical and social-communicative. In turn, this suggests that in any given event, the degree to which meaning between participants is shared or unshared, is uncertain. Here, it was hypothesized that two forms of

meaning can be described, a negotiated or shared form and an unshared or idiosyncratic form.

Shared meaning. The notion of conventionalizing or sharing of meaning has been a popular theme in recent studies of conversation. For example, Clark and Brennan (1991) referred to a crucial process in conversation that they called grounding. They defined grounding as the process by which participants in a conversation establish and maintain their mutual belief that their understanding of the conversation is shared and is enacted through turn taking patterns.

Similarly, Tannen (1989) noted that in conversation both participants are seen as contributing to the shaping of the discourse, even though one may only be a listener. The result is seen to be jointly constructed. Bloome and Green (1985) described conversation as a process in which the participants bring to a situation their expectations, background knowledge, and social roles, but that much of what is understood as the meaning in the conversation is negotiated through the interaction, making use of contextualization cues. Erickson (1982) has argued that in a conversation each participant contributes to the context of the other, constructing a unique relationship between the text and the context of the conversation. Similar processes of negotiation of meaning or of joint production of meaning have been described by other researchers (e.g., Bailey, 1985; Brooke & Hendrick, 1989; Dore &

McDermott, 1982; Dore, Gearhart & Newman, 1978; Gumperz, 1986; McDermott & Tylbor, 1987; McHoul, 1990; Saville-Troike, 1987).

A similar notion has also been described in classroom discourse. Griffin and Mehan (1981) described how patterns of interaction in classrooms evolved over the year with teachers and students becoming increasingly adept at interpreting and using the subtle cueing systems underlying these patterns. They illustrated how these patterns become conventionalized or ritualized over time and so are highly predictable. However, they also illustrated how to some degree they are modifiable by the participants. They argued that "even after regularity has been established, negotiation is still considered to be operating" (p. 202). Griffin and Mehan argued that this negotiation process is integral to the accomplishment of speech acts in classrooms.

Unshared meaning. The emphasis on shared meaning in the discussions noted above sometimes obscures the precursor to the negotiation process, which is unshared meaning. Also missing from these descriptions is attention to unsuccessful aspects of speech events (McCann & Higgins, 1990). Through the cognitive-linguistic-social-interactionist perspective described above, meaning for any participant in a speech event can be construed as shifting between individual meaning and negotiated meaning. For each participant, the meaning found in a speech event may represent some degree of sharedness and some degree of uniqueness. In

Grice's (1989) discussion of conventionality, he referred to a similar quality that he described as a presence or absence of formality or "whether or not the relevant signification is part of the conventional meaning of the signifying expression" (p. 361).

Others have described a similar quality of meaning. Lyons (1977) pointed to the recognition of the role of social constraints and individual creativity in language development and use. As Lieberman (1991) expressed it, "although communication would be impossible if some common core of meaning did not exist, many of the difficulties that attend human life stem from the distinctions in meaning that we don't communicate, as Dostoevsky, Proust and Conrad, among others, demonstrate" (p. 115).

Some research in early language development indicates a capacity for idiosyncratic meaning-making. For example, Kuhl (1991) found evidence that processes for forming prototypes or patterns in acoustic information were present in infants before the understanding of conventional meaning. Similarly, Blake and de Boysson-Bardies (1992) found that very young children begin to find patterns in their early linguistic experiences and to form meanings that are idiosyncratic to the child. For example, one child used an <m> sound when requesting something, while another child used an <uh> sound for this same purpose.

Two forms of conventionality. Here shared and unshared meaning were termed conventional meaning and idiosyncratic meaning respectively. Such a notion of meaning has been described elsewhere. For example, Schieffelin and Ochs (1986) claimed that children's sense-making processes are, to some degree, understood as personal or subjective, but that through interaction, a shared meaning is negotiated, such that the various participants in a given community "constantly conform and inform one another through language" (p. 165). Similarly, Clark and Gerrig (1983) argued that language involves two types of meaning. While one type involves shared or conventional meanings, they argued that a second type of meaning involves a process of sense-creation in which "the potential senses are not conventional, not listed in the lexicon, not guaranteed to be coherent, and not finite in number "(p. 606).

Dictiveness

In the perspective described above, language plays an integral role in the interactive recursive process through which meaning in any communicative event is negotiated. As language functions in accomplishing this process, it makes use of various language structures. However, the relationship between structures and the functions they accomplish is not necessarily direct. In his discussion of speech acts, Kess (1992) explained how in some utterances "a sentence means exactly and

literally what the surface form of the sentence suggests he or she is saying" (p. 149), but in others the literal reading of an utterance may differ from the intended function. In other words, the literal meaning of the lexical and syntactic structures may explicitly state the meaning of the speaker, or it may not. Then interpretation of the speaker's meaning depends partly or completely on information that is implicit and found in the context of the utterance. As Baumann and Briggs (1990) stated, there may be no simple one-to-one connection between lexical and syntactic structures and the aspects of meaning in an utterance.

Again here it was hypothesized that two forms of meaning can be distinguished. These were referred to as explicit or direct meaning and implicit or indirect meaning. These two forms of meaning were seen to closely resemble what Grice (1989) called the presence or absence of dictive content, or "whether or not the relevant signification is part of what the signifying expression says" (p. 361). Grice's term dictiveness was used to refer to this quality of meaning in this study.

The Relationship Between Conventionality and Dictiveness

Grice argued that the relationship between conventionality and dictiveness was orthogonal, or logically independent of one another. This relationship implies that four combinations of these two qualities could characterize the meaning in a given unit of language. These combinations

are conventional-direct, conventional-indirect, idiosyncratic-direct, and idiosyncratic-indirect. An example of a conventional-indirect combination is the example cited by Kess (1992) of Can you reach the salt? which is not a direct elicitation of a yes or no answer but rather a request for someone to pass the salt. The fact that this utterance is likely to be correctly interpreted by another participant means that the indirect meaning is conventional. Many children's utterances are indirect in that they depend on contextual information to interpret them. They are also likely to be idiosyncratic, making them difficult to interpret. However, direct idiosyncratic meaning also is typical in children's language, often requiring elaboration by the child before his or her meaning is understood. Also, what is initially idiosyncratic usage may rapidly become conventionalized in a particular context. For example, in one classroom observed by the researcher, children became accustomed to approaching the teacher holding out a crayon of one colour and stating another colour which became understood by the teacher as a request for the teacher to exchange the crayon for one of the other colour. A new teacher might not have been able to interpret the child's meaning in that context.

Summary of the Working View of Language

In summary, the working view of language as developed here was grounded in a developmental perspective in which cognitive, linguistic,

and social forces are understood to function in an interactive process, driven by the twin needs to make sense of the world and to influence it. Seen through this perspective, language is a process in which the speaker's inherent need for sense-making is repeatedly reconciled with contextual forces. Language is not seen as an action of a speaker towards an audience or context, but as an interaction between the speaker and the audience or context. Within this process there are identifiable structural and functional features of language. It was assumed that the role of affect should be considered in this view of language, as well as a notion of meaning. Meaning in any communicative event is understood to be to some degree shared and some degree unique for the participants. Furthermore, meaning may or may not be explicitly carried by the lexical and syntactic structures in an exchange. Although this perspective is developmental, it is assumed that it provides a view of language and language use for both children and adults. However, there may be differences in the contributing factors. For example, adults likely bring quite different and more complex cognitive structures and past experiences to any language event than do children.

Summary of the Chapter

Literature for this study was reviewed in three parts. First, as the study's purpose was to investigate one form of discourse in classrooms, the classroom discourse literature was reviewed. This review revealed two types of studies. Those taking a process-product approach indicated the significance of classroom discourse and also were typically prescriptive of teaching practice, but did not describe the underlying processes mediating their effect. In contrast, studies taking a descriptive approach examined these mediating processes. Discussions within the descriptive approach were seen to be organized around two dimensions of language which were structure and function. Structural and functional features identified in descriptive studies of classroom discourse were summarized. Next, these features were examined within the literature on discourse more generally. The third part of the literature review drew on a variety of sources to construct a working view of language that provided a broadly-described base for conceptualizing language as it was found in the study. This approach described language as an interactive process, reconciling individual meaning with contextual meaning. Within this process, particular structural and functional features of language can be discerned. Meaning is understood as a composite of all aspects of this process but also of relationships among the various parts.

CHAPTER THREE

STUDY DESIGN AND METHODOLOGY

The major purpose of this study was to develop ways to record and describe dyadic classroom discourse. It was not intended that patterns found in the data would be explained in terms of cause and effect. As Lampert and Ervin-Tripp (1993) noted, the purpose of a project may be to test an hypothesis or "to explore possible dimensions of some phenomenon" (p. 171). Because of the relatively undeveloped state of research in the area, this study was considered to be exploratory and descriptive. At least in the human sciences, philosophical debates have occurred as to the value of exploratory versus explanatory research. However, this argument was not an issue here. The establishment of methods for recording and describing dyadic classroom discourse were deemed necessary before any inquiry could be undertaken to attempt explaining patterns in the data. Although the study was not designed to test hypotheses, it was expected that one outcome might be the formation of hypotheses.

The value of exploratory work has been supported by recent statements on research methodology in the social sciences and education. Hayes (1992) suggested that researchers question the emphasis on experimental over exploratory work. He argued, "surely the observations

that give rise to hypotheses should be considered as important as the observations that we use to test them" (p. 138). Referring specifically to the current state of research in literacy, Hayes claimed that exploration and the formation of hypotheses were more important than the testing of hypotheses. Similarly, Kamil (1992) stated that too much educational research is too narrowly focused and too preoccupied with producing immediate implications for practice. Instead, he argued, educational research needed to be more concerned with its theoretical underpinnings and the rationale for interpretation of the data. A previous study (Lindsay, 1988) provided an illustration of this difficulty. A description of contrasts between children and teachers in models of oral narrative discourse did not readily translate into a prescription for teaching practice. Instead, a more complex problem was revealed.

Although the exploratory nature of this study found support in such statements, this was not seen to preclude the need to ground it within a paradigm with explicit assumptions, and which could provide a theoretical framework for describing the work as a piece of systematic inquiry. The naturalistic paradigm described by Guba and Lincoln (1982) and Lincoln and Guba (1985) provided such a framework. This paradigm is described in the first section of this chapter. The section concludes with a description of the study design. The second section describes the methodology or set of procedures developed for the study. The last section

of the chapter describes the communities, schools, teachers, and children that were involved in the study.

**The Naturalistic Paradigm: A Theoretical Framework
for the Design of the Study**

Guba and Lincoln (1982) argued that "paradigms are axiomatic systems characterized essentially by their differing sets of assumptions about the phenomena into which they are designed to inquire" (p. 233). They described paradigms which guide human activity, at least in the western world. They argued that paradigms can be understood in terms of a set of underlying axioms about the phenomena of inquiry, and that a paradigm for inquiry should be chosen whose axioms best fit the assumptions about the phenomena.

Comparing the Rationalistic and Naturalist Paradigms

Guba and Lincoln (1982) described two paradigms to support systematic inquiry. These were the rationalistic and the naturalistic paradigms. They also described five dimensions and the contrasting axioms of the two paradigms which are summarized in Figure 4. One point about the naturalistic paradigm often misconstrued is the degree to which knowledge is understood to be shared and transferred from one instance or knower to another. As Guba and Lincoln pointed out,

Figure 4. Five contrasting axioms in the rationalistic and naturalistic paradigms.

<u>Rationalistic Paradigm</u>	<u>Naturalistic Paradigm</u>
Reality -single, tangible, convergent, fragmentable, commonly experienced	-multiple, intangible, divergent, holistic, idiosyncratically experienced
Inquirer/respondent relationship -independent	-interrelated
Nature of truth -context-free generalizations as statements - focus on similarities	-context-bound working hypotheses -focus on differences
Explanation of action -understanding of real causes provides control or manipulation of action -actions occur in predictable and replicable sequences of events	-action not explained but attributed; deemed plausible, but actions unmanipulable -action is a process rather than a series of events
Role of values in inquiry -value-free	-value-bound

Note: Adapted from Guba & Lincoln (1982)

understanding is assumed to transfer from one situation to another, but the state of one's knowledge about a given situation is never assumed to be complete, or completely shared.

Guba and Lincoln (1982) agreed with its advocates that the rationalistic paradigm is eminently suitable for certain investigations, as for example in the physical sciences. However, they argued, it has proven inadequate for studies in the human sciences where it has been associated with problems of three kinds. First, ethical and procedural difficulties have arisen in imposing rigorous design standards in human contexts. Second, the transfer of research into practice, especially educational research, has been limited. Finally, there has been a poor fit between the underlying axioms of the rationalistic paradigm and axioms underlying many phenomena in inquiries in the human sciences.

In recent years, these three problems have frequently characterized debates in educational research, which, lacking a traditional disciplinary foundation, has often found itself at the interface between paradigms of inquiry. While critics of the rationalistic paradigm have been accused of an unwillingness or inability to apply the necessary rigour to the inquiry process, there has been increasing pressure on educational researchers to recognize the problems described by Guba and Lincoln (1982). Profound changes in western notions of control of information and the ethics of interpersonal relations have pervaded many discussions about

educational research. For example, Carr and Kemmis (1986) argued that an appropriate extension of the professional autonomy of teachers would mean that "research findings could not be regarded as something that teachers accepted from researchers and slavishly implemented" (p. 9). At the same time, shifting epistemological and metaphysical views have shaken the previously unassailable axioms of the rationalistic paradigm and supported those underlying the naturalistic paradigm (Hayward, 1987). Guba and Lincoln (1982) emphasized that the question of paradigm was a question of fit of the underlying axioms of a paradigm and of a topic, and for this reason, the demands of research in the human sciences were better served by the naturalistic paradigm.

The Naturalistic Paradigm and This Study

The naturalistic paradigm was selected as the theoretical framework for this study. The rationale and methodological implications of this choice are described in this section.

Matching the Parameters of the Study to the Naturalistic Paradigm

All three of the problems identified by Guba and Lincoln (1982) were reflected in the parameters of the research problem in this study. Ethical issues involved in contemporary research into human topics were considered paramount in making any decision as to the inquiry. There

was also a commitment to developing a piece of educational research in which teachers could participate and that could be applicable and useful to the field. Finally, the broadly-described concept of language in this study assumed axiomatic stances more similar to the naturalistic than the rationalistic paradigm.

As well, the naturalistic paradigm is intended for use with qualitative data which was the kind of data that was to be collected here. Other parameters of the research problem in this study that matched the naturalistic paradigm were its exploratory nature, the need to collect data in naturally occurring contexts, and the need for data to reflect as wide a range of contexts and occurrences of dyadic classroom discourse as possible. The parameter of children's age was not considered to affect the paradigm choice.

Given the above specifications, the naturalistic paradigm was seen as a good fit for the study and was used as the theoretical framework to guide its design. One variation made here pertained to the role of a priori theory. Guba and Lincoln (1982) argued that "the naturalist does not search for data that fit his or her theory but develops a theory to explain the data" (p. 235). It was assumed here that ignoring all previous knowledge about a topic is not possible and that the theoretical literature must play a role throughout the inquiry process. Similarly, Lampert and Ervin-Tripp (1993) claimed that in both inductive and deductive

approaches "every investigator who studies language must recognize that underlying assumptions have an influence in the decisions that are made at every step of the construction process" (p. 172).

Additional Methodological Parameters

The parameters of the research problem in this study were described in Chapter One and provided the basis for selecting Guba and Lincoln's (1982) naturalistic paradigm as the theoretical framework for the study. Guba and Lincoln described five methodological implications of the naturalistic paradigm which were also considered as parameters of the research problem.

The first two parameters, a preference for qualitative data and for data collected in naturalistic settings, matched parameters initially specified in this study. The third was the use of an inductive rather than a deductive process of inquiry, which Guba and Lincoln (1982) argued was a predisposition of the naturalistic paradigm. Next, they argued that an inductive inquiry process implies an emergent, rather than a preordinate study design, in which the events of each phase help frame those of the next. Finally, naturalistic inquiry also implies the reliance on knowledge that cannot be defined at the outset, or tacit knowledge, in contrast to propositional knowledge which can be immediately expressed. Guba and Lincoln stated that the

researcher "admits and builds upon tacit knowledge"(p. 245), but attempts to recast it into a propositional form as soon as possible. Tacit knowledge can be likened to what has been termed procedural knowledge elsewhere (Karmiloff-Smith, 1986). In contrast to explicit knowledge, which is knowledge that can be consciously accessed, procedural knowledge can only be represented behaviourally. This kind of knowledge is typified in children's knowledge of sentence forms. While they may be able to produce correct forms, they cannot explain their understanding of the rules required for this task. These methodological implications of Guba and Lincoln provided three more parameters for the theoretical framework which would guide the study design.

Approaches for an Inductive Inquiry

Several approaches were identified that were seen as useful in developing a methodology for this kind of study. The first related to sampling in an inductive inquiry, and the second to defining a unit.

Another approach provided direction for the cyclical procedure of sampling, data collection, and data analysis typical in an inductive inquiry. This was the grounded theory approach described by Strauss and Corbin (1990). A fourth approach, the networks analysis process described by Bliss, Monk, and Ogburn (1983), related specifically to the second research question about methods for describing dyadic classroom discourse.

The approaches of both Strauss and Corbin (1990) and Bliss, Monk, and Ogburn (1983) provided guidance for analyzing data from the bottom up or atheoretically, rather than beginning with theoretically derived and preconceived categories. However, as Lampert and Ervin-Tripp (1993) stated, analyzing data involves more than developing a set of descriptors and "frequently requires the development of a highly structured and hierarchically arranged system that can be used not only to relate variables to one another, but also to generate and test hypotheses" (p. 170). Both approaches provided guidance in constructing such a conceptual framework.

The four approaches are described in more detail below. Their role in this study is described in the study design (see pp. 94-101).

Sampling

As Marshall and Grossman (1985) pointed out, justifying a sample for this type of study is an impossible task since "one must know the universe and all its relevant variables" (p. 55). They stated that the compromise meant sampling the phenomenon as widely as possible considering both settings and people.

Lincoln and Guba (1985) described the sampling technique in an inductive inquiry as purposive sampling in contrast to representative or random sampling. They stated that "purposive sampling attempts to

maximize the scope and range of information obtained" (p. 234). They explained that an initial sampling unit is identified, but then modified on an ongoing basis in response to the data analysis, and that the criteria for completion of sampling is informational redundancy.

A similar approach to sampling was described by Strauss and Corbin (1990). They noted that in the initial phase of this approach, the focus is on identifying as many categories as possible to account for as much variation as possible, and so sampling needs to encompass as wide a range of contexts as possible. However, they also stressed the need for consistency in sampling by ensuring that the various possible contexts are sampled systematically.

Defining the Unit

Strauss and Corbin (1990) were ambiguous about the notion of a unit only stating that this was the decision of the researcher. However, Lincoln and Guba (1985) provided some explicit guidance. While conceding the disparity among researchers on this problem, they argued that a unit should have two characteristics. It should be heuristic, and it should be the smallest piece of information that can be examined and interpreted independently of other information except for the broad context of the study.

The Grounded Theory Approach

Grounded theory was originally described by Glaser and Strauss in 1967 as a process for theory generation in the social sciences. It makes no assumptions about the axiomatic nature of the phenomenon to be studied, and Strauss and Corbin (1990) considered it an appropriate tool for inquiry into various phenomena in various fields. However, Lincoln and Guba (1985) argued that a grounded theory approach was "a necessary consequence of the naturalistic paradigm" (p. 204).

In a grounded theory approach, there are four phases. The cycle of sampling, data collection, and data analysis may continue through all four phases, and the four phases are differentiated by different forms of data analysis. The first phase, called open coding³, is directed at identifying, labelling, and categorizing discrete instances of the phenomenon of interest. The other three phases are directed at unravelling the causal factors of the phenomenon. As this study excluded the explanation of cause and effect, only the first phase, open coding, was relevant here.

A grounded theory approach matches the demands of naturalistic inquiry in several ways. First, it is an inductive and theory-building process consisting of a set of techniques used to conceptualize the data, to

³Open coding and the following terms in this chapter are defined in the glossary in Appendix A: constant comparison, theoretical sensitivity, concept, category, in vivo codes, verbal structures, nonverbal structures, nonvocal structures, and Year 2000 approach.

build connections among the concepts, and gradually to form hypotheses about the phenomenon of study. Second, although it might be possible to predetermine a study design using a grounded theory approach, it is more likely that the approach will cast the study design as emergent. Finally, grounded theory was developed with the idea that data collection and data analysis are interwoven, with analysis directing the ongoing process of sampling, making it a particularly useful approach for conducting research in a naturalistic setting. As well, the approach recognizes the need for theory that can relate as directly as possible to practice and provides opportunities to collaborate with those from whom data is being collected. All of these points made the grounded theory approach a good match for the demands of this study.

The sampling, data collection and data analysis cycle. Instead of sampling, data collection, and data analysis occurring in a single sequence as in a deductive research process, in a grounded theory approach they occur in repeating cycles of the three procedures. Each phase of data collection is followed immediately by a data analysis session, and modifications to sampling and data collection for the next phase are made.

Initially, sampling is focused on identifying a wide range of descriptors of the phenomenon in question. Then "through the interplay of data collection and data analysis" (Strauss & Corbin, 1990, p. 178), concepts and the relationships among them are gradually accumulated.

Strauss and Corbin stressed the need for flexibility in this approach. Flexibility, they explained, was the adaptation of the research process to pursue aspects of the phenomenon that had not been foreseen but were seen to add to the accumulating perspective on the subject. They argued that flexibility was especially important when exploring new areas “because it allows the researcher to choose those avenues of sampling that bring about the greatest theoretical return” (p. 178). Strauss and Corbin provided little guidance for data collection procedures, only commenting on the need for researchers to be skilled in interviewing or observing. However, they described how the data collection process may be modified on-site as the relevance of particular information presents itself to the researcher.

Data analysis in the open coding phase of a grounded theory approach. Strauss and Corbin (1990) described two fundamental processes in data analysis in a grounded theory approach. First, units of data are compared and contrasted to develop concepts and categories. Second, questions are asked about the nature of the phenomenon, what it represents, and its purpose. Through these twin processes, or the constant comparison process, the assumptions of the researcher about the phenomenon are questioned, explored, and extended. Crucial to the approach is what Strauss and Corbin termed theoretical sensitivity. This sensitivity facilitates the analysis and helps uncover tacit knowledge of the

researcher, including that developed through personal and professional experience and theoretical knowledge.

Analysis in open coding proceeds through four steps. First, units of raw data are identified. Then, through the twin processes of compare/contrast and question asking each unit is labelled as a concept with similar phenomena given the same name. The next step involves developing more abstract categories to group the various concepts identified. Strauss and Corbin (1990) emphasized that providing labels for concepts and categories was crucial in facilitating the process. They cautioned researchers not simply to describe the phenomenon, but to categorize it. They also recommended that researchers be wary of the use of terms taken from the research literature. They said that these terms come "loaded with analytic meaning and may already be considerably well developed in their own right" (p. 68), and may already have standardized definitions. The researcher may impose this standard definition upon the data, limiting or constraining the inductive inquiry process. Strauss and Corbin encouraged researchers to use what they called in vivo codes developed from the language in use in the inquiry process. In developing the categories, one identifies their defining properties, and then clarifies and describes these properties.

Networks Analysis

Bliss, Monk, and Ogburn's (1983) networks analysis approach was developed for use with language data. As in this study, the authors assumed that to account for language adequately required a broadly described concept of language. They argued that "any adequate account of such data must inevitably be in terms of complex and inter-related perceptions" (p. 1), and that "an analysis of qualitative data which does not capture such complexity, subtlety and detail loses much of what the data offers" (p. 3).

Data analysis in a networks analysis approach. Bliss, Monk, and Ogburn's (1983) approach was developed specifically for describing samples of language through a categorization process. They defined a set of possible relationships among categories. These were mutually exclusive choices, simultaneous choices, and recursive choices, and they described a technique for mapping the relationships among categories. They included an other category so that all cases in the data could be coded, an approach also advocated by Lampert and Ervin-Tripp (1993). The approach did not define particular categories of language, and each use of the approach was intended to be individual and not necessarily applicable to other pieces of research. They emphasized that nothing in their approach constrains the categorization process, and decisions about category labels and the specificity of categories were made by the researcher.

The system described a set of notations for the possible connections that occur within the categorization process. Categorizations could be mapped using the notation system to reveal the internal organization within a particular sample of language. Their approach provided for describing language on various dimensions simultaneously, or as broadly-described.

Study Design

The major part of the study and its design involved the first two research questions and the development of methods for recording and describing dyadic classroom discourse. An inductive inquiry process was developed to address these two questions within the theoretical framework described above. The third question involved adaptations of the methods developed in the first two and was addressed differently.

Developing Methods for Recording and Describing Dyadic Classroom Discourse - An Inductive Inquiry Process

Typically, in a deductive inquiry process, sampling is established in advance, followed by a data collection phase and then by a data analysis phase. In contrast, the inductive inquiry process here followed the grounded theory approach and was conceptualized as repeated cycles of sampling, data collection, and data analysis procedures. Each cycle

represented some modification of some aspect of the procedures.

Modifications were made according to a set of criteria established at the outset to define and guide the research process. The criteria themselves were also understood as modifiable within the terms of other criteria in the set.

Criteria for the research procedures. The first part of the research process was defining the set of criteria. According to the Oxford Dictionary, a criterion is defined as a "principle or standard that a thing is judged by" (Fowler & Fowler, 1982, p. 225). The purpose of the set of criteria was twofold. First it served as a standard by which to identify the preliminary procedures for the study. Second, it guided the modification of these procedures throughout the research process. The first entries to the criteria set were the parameters defining the study, as described above.

Guba and Lincoln (1982) also described more specific criteria for a study designed as an inductive inquiry. They identified the four traditional criteria of a systematic inquiry providing trustworthiness of findings in the rationalistic paradigm. These were internal validity, external validity, reliability, and objectivity. They argued that equivalent constructs for these four criteria can also be found within the naturalistic paradigm. They stated that parallel constructs were credibility, transferability, dependability, and confirmability, and suggested techniques

to help meet these four criteria in research designs. These criteria and the list of suggested techniques to support them are summarized in Figure 5.

Sampling criteria were also added. According to Lincoln and Guba (1985), sampling should be purposive and continued until there is informational redundancy. According to Strauss and Corbin (1990), sampling should also be systematic. Two additional criteria were identified. The first was logistical and understood as a preference for easier, simpler, or quicker approaches over those that were more complex or lengthier, given that other criteria were met. The second was understood as a preference for accuracy and completeness in all phases of data collection and analysis.

The above criteria would apply to all aspects of the study. Two other criteria specific to the second research question about methods for describing this genre of discourse were identified. From the networks analysis approach came a criterion for categories which were to be defined as mutually exclusive choices, simultaneous choices, or recursive choices. Another criterion related to the basic unit of analysis. It was to be heuristic and the smallest piece of data that could be examined independently. Lists of criteria specific to each part of the research process are provided in the methodology.

Figure 5. Four criteria for a systematic inquiry and techniques to support them.

<u>Criteria</u>	<u>Techniques</u>
Truth value - Credibility	<ul style="list-style-type: none"> -prolonged time in context where data is collected -sufficient observation to identify nontypical characteristics -peer debriefing with others uninvolved in the study directly -triangulation using a variety of data sources or methods to cross-check the data -collection of archival material such as videotapes and other materials which can be used at a later date to check hypotheses -member checks done continuously throughout the study and at the end in which data and interpretations are continually checked with those from whom the data is collected
Applicability -Transferability	<ul style="list-style-type: none"> -theoretical sampling to maximize range of information collected and provide the most demanding grounds for theory testing -thick description to provide enough contextual information to support a reconstruction of the experience and to support judgements about transferability of interpretation in that context to another context
Consistency -Dependability	<ul style="list-style-type: none"> -use of overlapping methods as in triangulation -stepwise replication in which data and inquiries are split into groups and using same processes -dependability audit which ascertains whether methodological steps were done using a record of the methodology
Neutrality -Confirmability	<ul style="list-style-type: none"> -triangulation -practicing reflexivity often taking the form of a reflexive journal -confirmability audit which ascertains that findings can be traced back to original data in some systematic manner

Note: Adapted from Guba & Lincoln (1982)

Preliminary procedures. Preliminary procedures were established at the outset for sampling and data collection that conformed to the research criteria outlined above. Consistent with the emergent quality of the study design, preliminary procedures were expected to function as "a tentative guide from which to begin observation and analysis" (Marshall & Grossman, 1985, p. 149). These procedures centred around preliminary methods for recording and describing dyadic classroom discourse. Possible methods for recording were considered to be audiotaping, videotaping, and observational field notes. As field notes were considered to provide only a limited sample of language, the audio and videorecording methods were selected. Methods for describing dyadic classroom discourse were considered to be transcription and coding. As Edwards (1993) noted, a transcription process is a system for describing discourse. The transcript provides a focus on particular events minimizing distracting ones. It also involves making choices about what information should be coded, and how to organize and display it in both written and spatial forms, all choices that will affect the reader. Lampert and Ervin-Tripp (1993) defined coding as the classification and labelling of discrete categories of events consisting of identifying the events, choosing labels, and matching the labels or codes to instances of the particular events.

Preliminary techniques for recording and describing the discourse samples were taken from the pilot studies and other previous experience

with such techniques. Preliminary ways of conceptualizing the language sampled were taken from the discourse literature described in Chapter Two.

The modification procedure. The work of Bliss, Monk and Ogburn (1983) and Strauss and Corbin (1990) provided general guidelines for the procedure of modification through which results are derived in this type of study. As data were collected, the modification procedure would be used to revise the methods of recording and describing dyadic classroom discourse, as well as other aspects of the research procedures as necessary. Judgements made in the modification procedure were to be grounded in the set of criteria, one of which was the reference to a broadly-described concept of language as described in Chapter Two. Conflicts between criteria in making modifications would be noted as limitations of the study.

For purposes of this study, this procedure was defined more specifically. Central to the modification process were the research criteria. They were the standard by which modifications of the preliminary procedures would be made. The modification procedure was defined as consisting of three steps, although in practice it was expected that the process would often be recursive and non-sequential. First, as data was collected and analysis was begun, observations would be made about both methods of recording and describing dyadic classroom discourse as well as

any aspect of the research procedures. Second, an assessment would be made of the fit between these observations, the preliminary procedures, and the set of criteria. Third, when a lack of fit was identified, modifications would be made. The modification process can be conceptualized as successive approximations between the research procedures and the set of criteria. The results of the study represent the stage at which the research procedures no longer required that changes be made to better fit the set of research criteria.

The sources of observations in the modification process were to be the teacher, the researcher, or other parties, such as teacher's aides, principals, or members of the university community with an interest in the study. The process incorporated the technique of constant comparison described in the networks analysis and grounded theory approaches. The role of theoretical sensitivity encompassing theoretical knowledge, professional experience, and personal experience as described by Strauss and Corbin (1990) was considered integral to the process. It could facilitate the inductive process and help create propositional statements about the procedures. The working view of language as described in Chapter Two was a major reference for theoretical knowledge in this process. As well, it was expected that tacit knowledge would be the source of many observations and would become propositional knowledge through the research processes.

Finally, with specific reference to the conceptualizing of discourse, a process of concept, category, and network construction was outlined. Strauss and Corbin's (1990) distinction between concept and category was adopted as were the category types of mutually exclusive choices, simultaneous choices and recursive choices, as well as an other category, as specified by Bliss, Monk, and Ogburn (1983). Finally the notation system of Bliss, Monk, and Ogburn was also adopted.

For purposes of this study, six types of possible modifications were identified. The first was not a true modification but was considered useful to identify given the exploratory nature of the study. This was the identification of a potential problem, one that under slightly different circumstances, either in this study or in future work, might require a modification. The second type was maintaining the ongoing procedure as no discrepancies between criteria and procedure were identified. The third involved revision of a procedure. The fourth type was the adding of new procedures, and the fifth the excluding of a procedure. The last was a modification needed but not made.

Adapting Methods for Classroom-Based Use

The third research question was not included in the major part of the study design described above. As the purpose of the question was only

to suggest possible adaptations, several informal procedures were identified to elicit these ideas.

In summary, the study design was grounded in the parameters of the research problem. The naturalistic paradigm formed the theoretical framework within which to build the study design. It was primarily the lack of previous work in this area as well as the commitment to a broadly-described concept of language that determined the choice of an inductive inquiry process. Several approaches were selected to support the inductive research process, and using these, first the study design was developed, and then the procedures to address each of the research questions. These procedures are described in the following section.

Methodology of the Study

In this section, the methodology of the study is described. First, sampling procedures are addressed, followed by preliminary procedures for recording dyadic classroom discourse, and then, preliminary procedures for describing dyadic classroom discourse. For each part of the research process, the relevant criteria are described. Some criteria were not used in establishing the preliminary procedures but were relevant later in the modification process. The modifications made to each set of preliminary procedures are described in Chapter Four as part of the results

of the study. Last, procedures for addressing the third research question which asked how methods of recording and describing dyadic classroom discourse can be adapted for classroom-based use are described.

Criteria for Sampling Procedures

The set of criteria used in selecting the schools, teachers, classes, children, and contexts were:

1. Because dyadic classroom discourse was understood as talk between one child and a teacher in its naturally occurring context, teaching practices had to include a reasonable proportion of this form of interaction.
2. Dyadic classroom discourse was understood within a broadly-described concept of language.
3. As the research problem involved the language of young children, it was necessary to locate teachers who had primary classrooms.
4. Ethical considerations made it crucial that the research not detract from or interfere in any negative way with the learning environment in the classroom from the children's, teachers', parents', or administrators' points of view. As the data needed to be collected in its naturally occurring contexts, the enacting of the study should be as non-disruptive as possible. This meant it should not place the teacher under any unusual amount of stress, and also that classrooms where there was the likelihood of extraordinary interruptions to regular classroom events should be

avoided. Consideration should be made as to the frequency of recording sessions in terms of adding to the stress of the teacher.

5. There was a commitment to making the research as applicable to the participating teachers' practice as possible, and to include them in the research process. This meant that the study must be seen by teachers as adding directly to their knowledge of the children in the class and to their teaching practice, and that they had to show interest and willingness to participate in the study.

6. Data should be collected in as wide a range as possible of contexts and occurrences of dyadic classroom discourse. Sampling should be purposive or theoretical meaning that schools, teachers, and children should be selected to represent as broad a range as possible.

7. To meet the criteria of credibility, Guba and Lincoln (1982) advocated prolonged time in a context. It was considered desirable to spread the data collection over as long a period of time as possible.

8. Data should be collected systematically across all contexts.

9. Sampling should continue until informational redundancy is reached.

10. Logistical demands of classroom schedules and other factors would need to be considered as sampling proceeded.

Preliminary Procedures for Sampling

The following procedures were established to meet the above criteria. For logistical reasons, it was decided to limit the study to schools in one school district. First, consent was obtained from the university human subjects committee and the school district official responsible for research projects. Both processes involved assurances that children's learning and teachers' professional status would be in no way jeopardized by this research. While no clear requirement as to the number of teachers and children was known at the outset, it was decided that three classrooms in three different schools should provide sufficient variation and quantity of data.

Because of the criterion of sampling until informational redundancy was reached, no definite number of samples of dyadic discourse could be predetermined. However, a block of ten weeks was identified initially as being an adequate time period for collecting the recordings. After enough samples had been collected, an additional sample was also to be collected as archival material as specified by the criterion for credibility.

Sampling of Teachers

Teachers who might participate were identified at first through informal discussions. These occurred through the researcher's

discussions with teachers while supervising student teachers, through contacts with teachers who had taken courses she had taught, and through other school district staff. The informal discussions permitted the researcher to describe the study in detail to the teachers, and to provide opportunities for the teachers to ask questions about it. It also permitted the researcher to ascertain their willingness to participate and interest in the project. As well, the researcher and teachers used these discussions to decide if the classrooms were likely to provide the fairly stable environment needed to prevent the study being disruptive or stressful to teachers or children. They also provided an opportunity for the researcher to decide if the schools and classrooms would provide the desired degree of variety in the data, and if there was a sufficient occurrence of dyadic classroom discourse in the classroom.

To meet the criterion for variety in the data, it was desirable that the three participating teachers have classrooms spanning the age range in the primary division. Some variation among them as to age, training, and teaching style was also considered desirable to provide a more varied sample. The first three teachers who volunteered were all women, but otherwise provided a good range of contexts. They were given the pseudonyms of Elizabeth, Laura, and Judith. Their classrooms represented the range of primary age groups. Judith had a kindergarten, Elizabeth a split grade one/two, and Laura a grade three class. There was

variation among the three teachers in training, age, and teaching style, as described in the detailed descriptions at the end of this chapter. As well, it was considered likely that they and their classrooms would provide the stable environments necessary for data collection.

Sampling of Communities and Schools

To obtain further variety in the data, it was decided that the three teachers should be in three different schools. Again this criterion was met by the three teachers who volunteered. The schools were given pseudonyms with Judith, Elizabeth, and Laura in Middletown School, Newtown School, and Oldtown School respectively. The three schools represented variation in community composition and school atmosphere. Detailed descriptions of the communities, schools, teachers, and classrooms are provided in the last section of this chapter.

Once informal agreement to participate was given by the teachers, the researcher approached the principals in each school to inform them of the nature of the study and to obtain their formal consent to proceed with it in their schools (see Appendix B for the letter requesting principals' consent). The teachers were then asked to provide their formal written consent to participate in the study (see Appendix C for the letter requesting teachers' consent). These statements of formal consent were designed to meet the ethical criteria in the study.

Sampling of Children

The number of children to be observed was limited to six in each class, as a pilot study had indicated that in the audiotaping procedure a maximum of six children could be followed at one time (see Appendix D). Although the logistics of the audiotaping procedure limited the number of children who could be followed in one session to six, two other reasons limited the sampling procedure to the same six children throughout the study. First, it was expected that continuous observation over a period of time and range of contexts would provide the richest source of information to the teachers about a child. Second, practical experience suggested that interpretation of meaning in a language sample within a broadly-described concept of language might involve the history of exchanges between a teacher and a child, rather than just the immediate context. Such a complex context would have been impossible to develop with a changing sample.

The first criterion for choosing the six children was parental consent. Given that the data were to be collected in a natural context, it was assumed that it would be difficult to exclude children other than the six focus children from the data collection process. For this reason, the consent of all parents was initially requested (see Appendix E for the letter of parental consent). The six focus children were chosen from those with

parental consent. The teacher was given the following criteria and asked to choose children for whom the information provided by the study would be most beneficial. For logistical reasons, children with any severe articulatory problems were excluded, as this would make data transcription difficult. Other criteria related to the need to obtain as varied a sample of data as possible. Three of the children were to be judged as among the most competent in terms of communication and interaction, and to include one boy and one girl. The other three were to be judged as least competent in terms of their communication and interaction, and to include one boy and one girl. The total number of boys and girls in each sample was to be equal. Competent, interaction, and communication were not defined because professional experience with teachers had indicated they would have little difficulty making a distinction of this kind and so would identify children who represented a range of variation in the class. The decision as to which children would be followed was not made until the researcher had spent a familiarization time period in each classroom, and the teacher and researcher had discussed the choices together. The eighteen children identified were the focus children for the study. Detailed descriptions of these children are provided in the last section of this chapter. To maximize the study's benefit to the teacher and children, teachers were also informed that it was likely that the study

could provide information on other children and to consider this possibility as the study progressed.

Sampling of Contexts of Dyadic Classroom Discourse

Two factors were understood as defining context in these classrooms. One was time and the other was curriculum areas.

Sampling of timeblocks. Logistical limitations on sampling of time blocks were imposed by the length of tapes. Audiotapes of 30 minutes or 45 minutes per side were considered as usable. Longer tapes were not judged to be reliable. The videotape battery pack would only run for one hour with the videotapes providing only 30 minutes of recording each. Because the data were to represent naturally occurring contexts, the breaks in the class schedules were used to help define the length of a data recording session. The natural boundaries in the day were morning entry, morning recess, noon, afternoon entry, and afternoon dismissal. These boundaries defined three large time blocks per day for the grade one/two and grade three classes, and two large timeblocks for the kindergarten class, who only had a half-day morning schedule.

Scheduled classes such as music, computer, physical education, and library sometimes broke these time blocks into approximately half (see Appendix F for the three weekly class schedules). Also, teachers often planned work sessions within these large blocks that were approximately

30-45 minutes. For these reasons, the length of the typical activity session was 30-45 minutes. Because dyadic classroom discourse was defined as occurring in natural contexts and the onset of an episode of such discourse could not be identified in advance, it was necessary to take an uninterrupted record in a recording session. The data recording was designed as a form of running record observation in which one obtains a "detailed narrative account of behaviour recorded in a sequential manner as it happens" (Beatty, 1990, p. 9). Unlike an anecdotal record or an event sampling technique, a running record includes all behaviour that occurs within a block of time. Because 45 minute tapes could be used, sessions were defined as 45 minutes. It was expected that sometimes recording sessions would be a little shorter than the 45 minutes, and sometimes it would be possible to carry out two consecutive recording sessions within one timeblock.

To obtain a systematic sample, it was planned that data should be recorded from most, if not all time blocks. However, this schedule could not be set up in advance. Frequent unexpected shifts in primary grade schedules, and unexpected sickness of teachers would prevent advance scheduling of recording sessions. Instead, it was agreed between the teachers and the researcher that schedules would be discussed on a weekly basis. A master recording schedule for each class was constructed on which to track the sessions recorded (see Appendix G for master schedule).

At the outset, it was planned that two recording sessions per class would be made each week for a total of ten weeks, up to and including the weeks preceding Christmas, when it was expected that some additional variation would occur in the data as schedules and activities changed. Context was understood to mean time as well as activity, and it was considered desirable to spread the recording over the full ten week period in each class to maximize the temporal contexts from which data were recorded. This was also expected to reduce the possibility of stress on the teacher from having too many sessions being recorded close together.

Sampling of curriculum areas. Systematic sampling also meant recording sessions across all areas of the curriculum in each class. The subject areas were considerably different in the three classes, reflecting the different practices associated with primary grade children at different developmental levels and different teaching assignments in specialty areas. In the kindergarten class, subject areas were identified as physical education, math, language arts, centres, book time, and teacher-directed integrated activities. In the grade one/two class, they were language arts, math, centres, book time, buddies, social studies, and teacher-directed integrated activities. In the grade three class, the subjects were language arts, math, social studies, computer, physical education, book time, and integrated activities. In all three classes, exit and entry routines were also identified as another area to be sampled. While further dyadic exchanges

were known to occur outside the classroom, these were not included as recording them might be disruptive to other members of the school and raise issues about the presence of other individuals on the tapes.

It was expected that the amount of dyadic discourse in different sessions would vary substantially. However, as the purpose of the study was to obtain as varied a sample as possible, it was considered important to sample the full range of contexts in which dyadic discourse occurred, rather than to focus on those in which it was likely to be more densely concentrated.

Criteria for Procedures for Recording Dyadic Classroom Discourse

The first research question asked what methods for recording dyadic classroom discourse could be developed. Criteria specific to this question were identified and preliminary procedures for recording were established. The criteria are described in this section and the procedures in the following section. The criteria were:

1. Dyadic classroom discourse was understood within a broadly-defined concept of language.
2. Ethical considerations meant assuring that teachers had no reason for believing their practice to be undergoing negative criticism, and that all forms of their practice were accepted, of interest, and of value. They also

meant that recording processes should not interfere with the learning environment in any negative way.

3. There was a commitment to ensure that teachers saw the research process as useful and informative and that they felt included in it.
4. The criteria of credibility and transferability meant that there should be prolonged time spent in the context of data collection. This would provide sufficient opportunities to make observations and provide contextual information to support interpretations made about the data, and to check with teachers regarding observations and modifications made to recording methods.
5. Criteria for dependability and confirmability meant that documentation of the ongoing procedure should be kept showing changes made and the rationale for them.
6. The basic unit should be heuristic and the smallest piece of information that can be examined independently.
7. Procedures should be chosen where possible that are the most efficient in terms of time and effort.
8. The criterion of accuracy and completeness meant attempting to obtain recordings that included all aspects of dyadic classroom discourse in a particular sample and to attempt to meet the sampling criteria as completely as possible.

Preliminary Procedures for Recording Dyadic Classroom Discourse

As discussed in the study design, recording in this study included both audiorecording and videorecording techniques. The comprehensive nature of these techniques combined with the sampling procedures meant that the recordings were likely to meet the criteria of a broadly-described concept of language. Preliminary procedures for recording dyadic classroom discourse were in two phases. First there was a familiarization phase and then recording sessions began. The basic unit was considered to be a single recording session. To help meet the criteria for dependability and confirmability, a research notebook was developed to assist the modification process. Initially, it consisted of a journal format in a section of a binder that was to accompany the researcher on all visits and was always available for making notes as observations were made. In it, modifications of the preliminary procedures with the rationale for the change were recorded. It was also expected that some entries would be questions about the procedures being used and that these questions would stimulate the modification process.

Familiarization with Classrooms

Once the three classrooms were selected and formal consent obtained from the teachers and principals, a schedule to make regular visits to the classrooms was established with each teacher. In these visits,

the researcher assisted in the role of a volunteer. This was not an unfamiliar role in primary grade classes in this school district as parents were encouraged to visit classrooms and to participate in activities. Visits were scheduled for twice a week, and for approximately half a day, alternating between mornings and afternoons. These visits were designed to help meet the criteria of credibility and transferability by providing opportunities to spend time in each setting. They also helped meet ethical criteria by introducing the researcher gradually into each classroom.

Specifically, these visits were expected to achieve the following purposes:

1. The researcher would be introduced to the children and her purpose explained in terms the teacher felt the children could understand.
2. The researcher would learn the children's names and begin to become familiar with the developmental levels of the children in this group.
3. The children would become familiar with the researcher as seen by their increasing willingness to approach her to ask for assistance or to talk.
4. The researcher would become familiar with the routines of the school and classroom by assisting in the classroom in the role of a volunteer, as well as accompanying the teacher to the staff room and talking to other staff members.
5. The researcher would become familiar with the expected norms for children's interaction in each of the classrooms and the patterns of interaction typical for various children.

6. The researcher would introduce the recording equipment to the teacher, and children would have the opportunity to see it and ask questions about it.

7. Parental consent would be obtained, and the teacher and researcher make the decisions about the focus children for the study.

The familiarization phase was planned to continue until the above purposes were met, and it was judged by both the researcher and teacher that the researcher had become a reasonably familiar figure in the classroom, and the children's activities were not being unduly affected by her presence. The familiarization phase was expected to last approximately three weeks in each of the classrooms, after which the data recording would begin.

Recording Dyadic Classroom Discourse

Two forms of preliminary recording methods had been developed through the pilot studies. One consisted only of audiorecording, and the second used the audiorecording method in combination with videorecording. At the outset, it was assumed that videorecording would be more intrusive and distracting, and as one purpose of the study was to develop a tool practical for classroom-based use, the simpler technical requirements of the audiorecording procedure were seen as desirable. For these reasons, it was initially decided to limit the

videorecording to every fourth session, and through the modification procedure make decisions about the effects and effectiveness of the two types of recording. The master schedule was used to track the collection of the two types of recordings.

Audiorecording. The initial audiorecording method used in this study was developed in the second pilot project (see Appendix D). The equipment was an Aiwa stereo cassette recorder which was of the walkman type, with a clip to fasten it to a belt. It was placed on a fabric belt for the duration of the project so it could be worn by any of the teachers no matter what they were wearing. The unit included a stereo microphone attachable to a collar or pocket. The unit had two sets of rechargeable batteries. These would be changed after every 120 minutes of recording. The brand of audiotape chosen was Maxell UR-90, a highly durable tape good for conditions of rewinding and relistening as necessary in the study. Piloted audiorecordings using this equipment were very clear for all interactions of the teacher with the children near her. Both lexical and prosodic qualities were clearly recorded.

The initial procedure consisted of making the audiorecord, and making an observational record that tracked the ongoing exchanges throughout the session. This record could also record other incidental information that might be important to understanding the context, but was unlikely to appear on the audiotape, such as nonverbal features of an

exchange, or some other concurrent event in the room. The following steps were defined for making the audiorecording:

1. Equipment is prepared by ensuring there is a blank tape in the deck and placed on the right side.
2. Equipment is positioned by the teacher who puts on the belt with the deck attached and fixes the microphone where it is comfortable.
4. Recording is begun by switching on to record at the beginning of the session to be recorded.
5. The tape is allowed to run for the length of the session. If the teacher is involved in some other activity when the session ends, rather than interrupt her, the teacher can wear it until a convenient break occurs to remove it.
6. If a clearly marked large group activity expected to occupy 10 minutes or more occurs, taping is interrupted and resumed afterwards.

Making the observational record involved tracking the teacher throughout the session and identifying the sequence of episodes and cues to mark the beginning of the ones with the focus children. It was defined by the followings steps:

1. An observational record form is used (see Appendix H for a sample form).
2. The initial time for the session is recorded as well as the class and date.

3. For the focus children, the initial of the child with whom the teacher is interacting is recorded in the appropriate grouping column. Under cues, any verbal or non-verbal cues that would help identify this aural exchange on the tape recorder and any additional contextual cues that are judged to be important are recorded.
4. The initial of the next child with whom the teacher is recorded in the next column down, under the appropriate grouping heading, and a running record of time is maintained in rough approximation to the changing events using the researcher's own wristwatch.
5. The initials of other children with whom the teacher interacts are entered in the sequence of occurrence.
6. Additional notes are recorded in the Notes section at the bottom of the page. These notes are later entered into the research notebook.

Videorecording. The videorecording procedure was also developed in the second pilot project (see Appendix D). The equipment was a Quasar VHS Camcorder with four 30 minute video cassettes designed for it, and a Sony VHS Video Cassette Recorder. The videotape chosen was Fuji A/V Pro T-120 as it was considered to be highly durable under conditions of rewinding and rewatching as would be necessary. The camcorder had a battery pack making possible portable and highly mobile operation of the camcorder. This was assisted by the unit's light weight of approximately 1.2 kilograms.

The videorecording procedure also included the audiorecording method described above to provide a clear acoustic record, as the internal mike on the videorecorder did not provide a clear aural record when the camera was any distance from the speakers. However, as the videorecorder was equipped with a zoom lens, a clear visual record could be obtained from a distance that was not overly intrusive. The videorecording procedure involved the following steps:

1. Equipment is prepared by ensuring there are at least two blank video cartridges for use, one in the camera and the other in a pocket, and that the audio equipment is also prepared as described above.
2. Recording is begun by setting the date and time indicators so that this information is recorded onto the videotape.
3. The camera is focused on the teacher throughout the session, and the researcher moves around the room as necessary to maintain this focus. Location, height, and direction of the camera are adapted as necessary to record interaction between the teacher and the focus children.
4. When the first 28 minutes of recording are completed, a message appears in the lens of the camera warning the researcher of the upcoming end of the tape, and she judges the best time to switch tapes, trying to do it while the teacher is talking to a child other than one of the focus children.

Criteria for Procedures for Describing Dyadic Classroom Discourse

The second research question asked what ways could be developed to describe dyadic classroom discourse. Criteria specific to this phase of the research are listed below followed by the preliminary procedures designed to initiate this phase of the research. The specific criteria were:

1. Language was understood as broadly-described as described in Chapter Two.
2. Ethical considerations included ensuring the confidentiality and anonymity of participants in all versions of the data. They also included extending the reassurance to teachers that no matter what teaching practices were observed and recorded, that in no way were they being judged negatively.
3. There was a commitment to ensure that teachers saw the research process as useful and informative and that they felt included in it.
4. Knowledge that is tacit was recognized as well as propositional knowledge.
5. The criterion of credibility and transferability meant collecting contextual information relevant to interpretation of the data and providing opportunities to check with teachers about observations and modifications made to describing methods.
6. Documentation of the ongoing process should be kept showing changes made and the rationale.

7. The basic unit of language should be heuristic and the smallest piece of information that can be examined independently.
8. Procedures should be chosen where possible that were the most efficient in terms of time and effort.
9. The criterion of accuracy and completeness meant that description of dyadic classroom discourse should reflect the recorded samples as accurately as possible.
10. Categories for describing dyadic classroom discourse should fit the mutually exclusive choice, simultaneous choice, or recursive choice types identified by Bliss, Monk, and Ogburn (1983).

Preliminary Procedures for Describing Dyadic Classroom Discourse

As described in the study design, describing dyadic classroom discourse was understood to include transcription and coding methods. The basic unit was an episode based on Gumperz (1986) and Van Dijk (1990). It was defined as a self-contained interactive exchange between a teacher and one child. For purposes of dependability and confirmability, the research notebook was to be used to document observations and modifications during transcription and coding.

Transcribing Dyadic Classroom Discourse

Transcription was seen as the process for describing structural features of the samples of discourse. Structural features identified in the preliminary procedures were drawn from the discourse literature as described in Chapter Two. These were turn taking patterns, topic structure, the basic unit of analysis, and contextualization cues. For transcription purposes, the first three were organized under the heading of discourse level structures. Contextualization cues were organized according to verbal, nonverbal and nonvocal elements, as described by Saville-Troike (1985). Verbal elements consisted of non-standard words like 'yeh' as well as standard forms of words and sentences forming the lexical and syntactic units in discourse. Nonverbal elements were those that were verbal and involved sound, or lack of it, but were not words. These included children's vocalizations as well as prosodic elements such as intonation, stress, volume, and pauses or silences. Nonvocal elements were defined as all cues that convey meaning without the use of sound, for example, eye contact, proximity, and gestures.

It was expected that reference to the working view of language throughout the modification process would change the preliminary conceptualization and ways of transcribing these features as well as adding new ones. However, given the emphasis on the role of context in the working view of language, contextual features were added at the outset.

Although initially only the researcher and teachers had access to the transcripts, to meet the ethical criterion, all participants were to be identified only by initials in the transcripts. At the end of the research process, the initials would be converted to pseudonyms for increased confidentiality. The equipment to be used for replaying tapes was either a Sanyo or a Sony double deck cassette recorder.

Audio transcription. From the piloting process, it was known that transcripts could be made by combining the observational record and the audiorecording. The field notes provided contextual details, the sequence of turns through a session, and cueing words for the focus episodes. This process involved listening and entering text and transcript conventions directly into a word processing program. However, considerable rewinding and relistening could be necessary to obtain an accurate and complete record. The preliminary set of features to be transcribed and transcription conventions are summarized in Appendix I. Conventions were adapted from Gumperz (1982) and the pilot studies.

Video transcription. Initially videotapes were to be transcribed in the same format as audiotapes but by using the videorecording in combination with the audiorecording rather than the observation field notes. However, several features were to be added when transcribing from videorecordings. These were: (a) more complex descriptions of actions that accompanied, initiated or terminated the episodes; (b)

proximity; (c) gaze direction and eye contact; (d) head movement such as nods; (e) hand movements such as pointing, shoulder tapping, raised hands and presenting of some object for the other to see; and, (f) facial expressions such as smiles. These structures and transcription conventions are also summarized in Appendix I.

Coding Dyadic Classroom Discourse

Coding was understood as a process for describing functional features of the discourse samples. Initially, the triad of referential, social, and expressive functions that appeared common to the classification schemes of language functions as well as of speech acts was adopted for conceptualizing and coding functional features. The meaning of function here was restricted to intent. This definition recognized the confusion in schemes of language functions and speech acts. It also conformed to the descriptive focus of the study following from the sociolinguistic orientation to classroom discourse. This was also the position advocated by Kess (1992) in reference to studies of speech acts.

Given the recognition of affect in the working view of language, it was also included at the outset in the coding process and was to be coded as positive, negative, or neutral. Meaning was to be coded as direct or indirect, and as conventional or idiosyncratic. Given the likely complexity of coding, it was decided that meaning would not be included initially in

the coding. As the definition of discourse here was the language between teacher and child, coding was to be done for both the teacher's and child's language in each episode.

Steps for coding were to begin with the first transcript proceeding episode by episode with codes entered on the coding forms (see Appendix J). Visits were to be scheduled with the teacher to discuss the researcher's coding within one to two days of recording. Integrating the teacher's interpretations into the coding process was planned to proceed transcript by transcript. The teacher and researcher would discuss the researcher's coding of the previous session, and the teacher's interpretations would then be added in the appropriate columns on the coding forms. To meet the ethical criterion, the researcher would have to ensure that discussions about the transcripts were not judgemental or negatively cast. It was expected that these discussions would provide insight into children's and teachers' classroom activities and so meet the criterion of applicability to teachers' purposes. The discussions would also help meet the criteria for credibility and transferability as they would provide an opportunity to check with teachers regarding observations and modifications made to transcription and coding methods and to add contextual information to the samples. Both theoretical sensitivity of the researcher and tacit knowledge of the teachers were expected to be involved in the coding

process. A major component of the researcher's theoretical sensitivity was the working view of language.

Through the modification procedure, it was expected that the preliminary concepts would diversify rapidly, followed by categorization of concepts and the construction of a network of concepts following the networks analysis approach described by Bliss, Monk, and Ogburn (1983) (see Appendix K). However, there was no preliminary concept of how the network might finally look or how the structures might connect with the descriptors of intent, affect and meaning. Each version of the network would be used by the researcher and the teacher as a reference for coding subsequent transcripts which in turn would result in modification of the network.

Adapting Methods for Classroom-Based Use

The third question in the study asked how methods developed in the first two questions might be adapted for classroom-based use. Two research procedures were defined at the outset. The first was the use of a semi-structured interview after completion of the study (see Appendix L). In this interview, teachers' suggestions would be requested for adapting the methods developed through the study. It was anticipated that the research procedures addressing the first two questions would raise other points and these would be integrated into this interview at that time. The

second procedure was the use of the research notebook to record comments make observations about possible adaptations throughout the course of the study.

Descriptions Of Communities, Schools, Teachers, and Children

The descriptions of the communities, schools, classes, teachers and children were written by the researcher at the end of the study. They were then reviewed by the three teachers to ensure their agreement with the descriptions. The three communities represented in this study were located in one school district in a single city in British Columbia. The names of the schools, teachers, and children are pseudonyms.

Communities and Schools

The three schools were located in three different communities in the city. Here they were called Oldtown, Middletown, and Newtown.

Oldtown

Oldtown, Laura's school, was in the oldest part of the city and close to the downtown core. The property in this area included both low-income multiple family housing, and single family dwellings. Families were similarly mixed. However, according to Laura, there was a higher proportion of mid to low-level income families in this community,

including a number on welfare. There was also a range of ethnic backgrounds.

Oldtown School had 15 full time equivalent teaching positions in the year of this study. As with many schools in the district, it had experienced considerable staff turnover in recent years. Both the principal and vice principal were new and there were several new staff members. There were considerable differences among staff members as to educational philosophy, and this appeared to be causing some tension within the school. Visitors were not made to feel very welcome, and although there were some dedicated parents involved with school activities, they were few in number, despite the fact that it was designated as a community school. The school's physical condition was poor, and it was in need of considerable renovation.

The composition of this school was somewhat unusual. The catchment area bordered that of a school with a particularly good reputation. Many families within this school's catchment area had arranged to have their children attend the other school. These tended to be the more affluent and professional members of the community, and often those with more stable homes. As a result, the population of Oldtown School did not represent the area, and it had a disproportionate number of children from single-parent homes with parents with a low level of education, and difficult and unstable home circumstances.

Middletown

The community of Middletown was on the outskirts of the city and was a suburban area which was first developed about 30 years ago.

Housing here was generally uniform and less expensive than in much of the city. Families were typically working class or lower middle class, and a number were on welfare or some form of government assistance.

Different ethnic groups were represented liberally in the community, many of whom were new immigrants and spoke no English. Middletown School had had 20 full time equivalent teaching positions in the year of the study. It had the same principal for six years and a turnover of only one position in the previous year. The staff appeared to be a cohesive and supportive group, and visitors were made to feel welcome. According to Judith, parents were often involved in school activities. The school's physical condition suffered from poorly controlled heating, among other things.

Newtown

The community of Newtown was the furthest away from the city centre of the communities in the study. It bordered a suburban area recently developed and representing more exclusive properties. Other parts of the area included older and less valuable properties, as well as

subsidized housing. According to Elizabeth, families were generally middle class, and included a number of professional people. Families of various ethnic origins lived there, but were usually fluent speakers of English. Newtown School was only three years old at the time of the study. In the past year, it had had 11 full time equivalent teaching positions. When the school opened, the principal had hand-picked his staff, who were required to share a common school philosophy that was generally known as a Year 2000 approach. Several years of layoffs and cutbacks had resulted in staffing changes, and at the time, only half of the original staff, including the principal remained. Some tension between the original and newer staff members was observed. However, most staff members worked well together, and visitors were made very welcome. There were a number of school and community projects ongoing at any time, but in Elizabeth's opinion, parental involvement was low. The school was bright, pleasantly coloured, and very comfortable.

Teachers and Classrooms

Oldtown School - Grade Three

Laura's grade three class had 17 boys and 9 girls. Three children were designated as E.S.L. and one as special needs. The children had individual desks and the arrangement of them changed over time, including arrangements of rows, pods, and one large circle. There was a

corner where the whole group could meet on the floor for stories and discussions, but most work was done at the children's own desks. At the beginning of the year, according to Laura, only one child in this class could have been identified as having the composite profile of a stable home background, two parents, well-balanced socio-emotionally, and at least average in cognitive development. A number of the children had problems in several areas. The class contained more than a typical number of difficult children. It seemed evident at the beginning of the school year that only a teacher with Laura's degree of expertise, experience, and commitment could have managed to keep this group working cooperatively and productively.

Laura earned her B.Ed. in 1983 and had taught for over 20 years at various grade levels. This was her first year teaching grade three. Trained originally in a model of teaching where lessons were teacher-directed and subject-specific, Laura had modified her approach over the years to include more integrated and child-directed activities. Her teaching at this grade level was a balance of the two techniques with constant attention to having the children meet the traditional standards expected at this grade level, even though she might not always use traditional teaching techniques. She placed a high emphasis on values related to respect for others and for adults, for example, refusing to let a child interrupt a conversation she was having with another adult. Other values

emphasized in her teaching were hard work, persistence, the value of achievement, and cooperation. She was especially concerned with children coming to understand how to choose and control their own behaviour and ultimately their own lives and was an active participant in reality therapy and quality school programs.

Laura worked persistently with this group to attempt to have them catch up and meet the grade level expectations. She drew on a very high mental and physical energy level to keep the class functioning productively as a group, and to provide the direction, encouragement, and support to help the children make progress. Her effort and commitment with this group of children was evidenced by the change in the group over the period of the study. By February, they had become much more focused, cooperative, and self-controlled.

Middletown School - Kindergarten

Judith's kindergarten class had 10 boys and 11 girls. The classroom had four table areas usable for various activities as well as the conventional kindergarten centres such as house and make-it centres. Judith considered her class at the beginning of the year to be exceptional in comparison to previous kindergarten groups she had taught, and also in contrast to the afternoon group. One of the main reasons for this was the high number of E.S.L. children who constituted almost half the group.

Several of these children spoke no English at all, and others, although speaking more English, seemed quite unfamiliar with the expectations in a school setting. As well, among the non-E.S.L. children, there were three boys who were particularly difficult, one girl who often resisted the teacher's direction, and one special needs girl. The E.S.L. children came from stable homes with two parents, but the non-E.S.L. Canadian children more typically came from homes with some degree of disruption or lack of stability. In a discussion in December, Judith said that the group "is becoming more cohesive but I still hear myself making far too many comments. It bothers me and it doesn't happen in the afternoon group".

Judith completed her B.Ed. in 1994 and had taught for over 20 years. She was trained as a special education teacher and taught for one year in grade three, four years in special education at the intermediate level, and then moved into teaching at the kindergarten and grade one levels which she had taught for 16 years. She had been a strong advocate of kindergarten teaching approaches, and had served as president of the district Kindergarten Teacher's Association. Judith's teaching style was very relaxed and informal but also required that children follow directions much of the time. She had very specific expectations for children's behaviour and ensured that these were met consistently. She placed a high value on children learning to respect others, and like Laura, would not allow children to interrupt her or each other. She was especially

concerned with children learning to take responsibility for their own behaviour and their own needs, for example, discouraging parents from helping the children on and off with shoes and jackets, and responding very positively to signs of children's initiative, responsibility, and self-direction. She believed that this approach built self-esteem which she saw as the foundation for risk taking, and thus learning. She often constructed a situation to provide children with the opportunity to ensure that they accomplished a task on their own, providing only the minimum possible assistance.

Newtown School - Grades One/Two

In Elizabeth's class, there were 11 boys and 13 girls with 17 in grade one and 7 in grade two. The class was arranged around a square in the middle which held the various reading series used by the children and several comfortable chairs. Elizabeth read to the group in this area. Another large area was at one side where the children gathered with Elizabeth for calendar and blackboard discussions. Scattered around the rest of the room were various tables and chairs where children chose their own places at these for work sessions.

The children came largely from middle class homes, many of which were two-parent working families. Various ethnic groups were represented in the class, and two children were classified as E.S.L., and one

as special needs. This group were respectful and cooperative with Elizabeth, but also high-spirited, energetic, and enthusiastic about their school activities. Their positive regard for Elizabeth was evident in numerous ways, and she was in constant demand to discuss ideas, share bits of their lives, or to provide help with school activities.

Elizabeth received her B.Ed. in 1986 and had been teaching for seven years, all with primary children, and had been at Newtown School in the same classroom for the three years since it first opened. Her pre-service training had stressed small group language and math learning, but through early in-service training she developed a whole language approach, and she blended both teacher-directed and child-directed approaches in her teaching. However, within the teacher-directed activities there were many opportunities for children to participate, and she had developed a repertoire of skills to keep activities moving along quickly, and to maintain a high level of energy and enthusiasm in the children. Although Elizabeth could be very firm with children, she maintained a patient and respectful manner, even with children who demanded much of her. Elizabeth valued the fun-loving and spontaneous nature in young children and sought ways to help them learn without restricting their personalities or active nature. She valued the love of ideas, literature, and curiosity about the world, and her values

were always evident in her teaching. Her personal commitment to the children and her pleasure in working with them pervaded the classroom.

The Focus Children

The focus children in each class are described below. The descriptions are taken from the discussions of the transcripts between the teachers and the researcher. The children's ages, families, and ethnic backgrounds are described, as well as affective qualities between the teacher and children, and qualities related to the child's communication patterns. The names are all pseudonyms.

Oldtown School - More Competent Children

Clara. Clara was 8:8 at the outset of the study. She was Oriental and her family consisted of her mother, father, and older sister. Laura, her teacher, described Clara as an intelligent child who although shy, responded willingly and shared her ideas readily when asked. She was very focused and purposeful in her exchanges with others. As Laura put it, "Every time I throw the ball to her, she picks up on it" (November 30).

Tom. Tom was 8:8 when the study began. He lived with his mother and older sister. When Tom approached his teacher, he came with a problem clearly defined that needed solving. He was straightforward, and talk with his teacher was substantive, focused, and

purposeful. Laura said that when redirection was required, she needed to provide little input before he responded. Laura was often able to joke with Tom.

Don. Don was 8:1 at the beginning of the study. He lived with his mother. Don was a very bright boy who interacted willingly in conversations with his teacher. He remained focused and purposeful in these exchanges which were largely substantive. He was very articulate and could easily specify the details of a situation going on in the class. However, Laura also felt that there was something going on under the surface with Don that she did not understand, and he was not always willing to meet class expectations.

Oldtown School - Less Competent Children

Jared. Jared was 8:5 when the study began. He lived with his mother and two older brothers. Laura found that he was fairly straightforward when focused, but that her exchanges with him frequently revolved around getting him focused. He often needed a lot of repetition before he could grasp the teacher's expectations. Laura also suspected that when he approached her, his purpose was often simply to get attention.

Charlene. Charlene was 8:2 when the study began. She was from a First Nations background and lived with her mother, stepfather, and two younger brothers. Laura found her communication patterns to be

irregular, sometimes being very direct, and other times very elusive. Sometimes she appeared to shut down and not respond and needed a lot of repetition before she would allow herself to be directed. However, she also approached adults frequently, apparently seeking reassurance and attention. She often needed more detailed, clearer, and repeated instructions to begin a task than did the other children. However, Laura also suspected that sometimes Charlene was playing a game to sustain the attention, and that she often enjoyed attention that other children would probably dislike.

Wayne. Wayne was 8:3 at the outset of the study. He lived with his father and older sister. He was below average in language arts, but in all subject areas, Laura often found Wayne frustrating because of his frequent demands for attention, his rejection of praise, and his constant self-deprecation. Laura said "he'd rather have an argument or a fight than not get my attention". She said that he had developed a range of defense mechanisms and distracting strategies in his talks with her and often seemed to evade responsibility for his own learning by playing games that maintained her attention and by denying his understanding.

Middletown School - More Competent Children

Esther. Esther was 5:2 at the beginning of the study. Her family was Canadian and consisted of her mother, father, and younger sister and

brother. Esther was described by Judith as a very conforming child and concerned about being a good girl. Judith said that she had developed a lot of strategies to get what she wanted, but also had a lot of good social skills.

Marcella. Marcella was age 5:7 at the beginning of the study. Her family consisted of her mother, father, and older sister. Judith described her as a very bright and competent child, but also very assertive and manipulative of other children and her teacher. Judith also said that she wasn't the kind of child with whom she wanted to sit down and work. Judith considered it possible that Marcella attempted to avoid interaction with her, which she believed interfered with Marcella's opportunities for learning. Marcella also frequently checked to make sure Judith did not catch her breaking rules.

Graeme. Graeme was 5:3 at the beginning of the study. He lived with his mother, father, and baby brother. Graeme was very bright and purposeful in his activities. He was capable of monitoring and controlling his own behaviour very well. He seemed to realize immediately if his response had not been what Judith expected, and he could quickly modify it. However, Judith described him as aggressive and getting a lot of pressure from home to behave more appropriately and consistently in the classroom. Judith also found him lacking the kind of verbal and facial

mannerisms that often give a young child charm and likability, and resenting negative attention.

Middletown School - Less Competent Children

Jennifer. Jennifer was 5:9 at the beginning of the study. Jennifer's family was Canadian and consisted of her mother, father and younger sister. She was designated as a special needs child. Judith and other professionals who had worked with Jennifer agreed that she wanted to control the activities of those around her, including the teacher. As Judith put it, "She wants to direct traffic. . .She wants to be the teacher." Jennifer was seen to ask for considerable attention, but much of it ended up as negative attention. Judith found that she needed to be much more direct with her to ensure Jennifer understood expectations, but Judith was also concerned that Jennifer not be seen by the rest of the class as always being criticized, as she felt Jennifer was not well liked by the other children.

Joe. Joe was 5:8 at the beginning of the study. He lived with his father, two older brothers and his stepmother, who was pregnant at the time. He tended to cling to Judith and demand a great deal of her attention. Without her direction, his activity often seemed random or purposeless. Judith noted that she always had to remember that he was "this great big body and still quite an immature little guy". However, she

noted also that his charm and likability helped him in having positive exchanges with her and other adults despite his erratic behaviour.

Paul. Paul was 4:9 at the outset of the study. His family was East Indian and consisted of his mother, father, and baby brother. Judith was concerned that Paul did not get his fair share of teacher attention. She saw him as a passive boy who relied on nonverbal rather than verbal means to interact with her. However, she also stated that he had very good social skills which she believed had been carefully fostered by his extended family with whom he did many activities.

Newtown School - More Competent Children

Caitlin. Caitlin was 6:7 at the study's outset. Her family consisted of her mother, father, and older brother. Elizabeth observed that Caitlin's mother was particularly domineering, giving Caitlin little opportunity to talk, make decisions or to express herself. However, she also noted that Caitlin was bright and capable of achieving her own intentions in a conversation, but used strategies that sometimes had a negative effect.

David. David was 6:3 at the beginning of the study. He was from an Oriental family, and both English and Chinese were spoken at home. He spoke fluent English. He lived with his mother, father, and older sister. Academically and socially he was advanced and highly motivated to succeed. Because of his strengths he had the appearance of being able to

communicate effectively, although through the course of the study less effective patterns were observed.

Alex. Alex was 7:5 at the beginning of the study. His family was Greek. He lived with his mother, father, two younger brothers, grandmother, grandfather, three aunts, and three uncles. His immediate family spoke fluent English and Greek, and both were spoken in the home. He was considered by Elizabeth very advanced for his age both academically and socially. His communicative skills were excellent across various contexts.

Newtown School - Less Competent Children

Carrie. Carrie was 5:11 at the outset of the study. She lived with her mother, father, and older brother, but also spent considerable time with other adults at the family business. Although she appeared less mature early in the year, it became evident that she was about average academically and socially and in communication skills.

Cindy. Cindy was 6:1 at the beginning of the study. She lived with her mother who was very young and unemployed. They lived in subsidized housing. Academically, Cindy was very advanced, but socially she had a number of problems. She was capable of achieving her own intentions in a conversation but also used strategies that had a negative effect.

Ben. Ben was 5:11 at the beginning of the study. His family was Oriental but they spoke fluent English, and little Chinese was spoken at home. He lived with his mother, father, and younger brother. Academically his teacher considered him below average, but socially quite competent.

In summary, the three communities were considerably different in terms of socioeconomic status, stability, and family composition. The schools and staffs varied considerably in philosophy, cohesiveness, and general atmosphere. Variety was also evident in the values and teaching styles of the three teachers. However, what did not vary among the three was their effectiveness in maintaining a productive learning environment, and in their understanding and commitment to the best interests of the children. All three teachers were considered exemplary by their principals, by a school district official responsible for coordinating school services, and by the researcher. The children represented a wide range of profiles ranging from all-round competence and likability to several who appeared to have few features in their favour. A number of children showed a mixture of features, such as high competence but not being particularly likable, or vice versa. Each group of focus children included a range of ethnic backgrounds.

Summary of the Chapter

This chapter described the theoretical framework and methodology for the study, including the communities, schools, classrooms, teachers, and children in the study. The theoretical framework was grounded in the naturalistic paradigm as described by Guba and Lincoln (1982). It adopted the methodological parameters described by Guba and Lincoln as well as their criteria for a systematic inquiry. Several techniques with similar theoretical assumptions to those of the naturalistic paradigm were adopted from other sources. These were used to provide more explicit guidelines for developing the methodology of the study.

The major part of the study involved the first two research questions. This part was designed as an inductive inquiry in which only preliminary procedures to initiate the research process were defined at the outset. A modification procedure to make revisions to these preliminary procedures throughout the course of the study was also established.

In this chapter, the preliminary procedures for sampling including schools, teachers, and children, as well as contexts and occurrences of dyadic classroom discourse were described. Preliminary procedures for recording dyadic classroom discourse including steps for audiorecording and videorecording were also described, as were preliminary procedures for describing dyadic classroom discourse that included transcription and coding of the recorded discourse samples. Procedures for addressing the

third research question which was not part of the inductive inquiry process were also outlined. Finally, the three communities, schools, classrooms, and teachers were described, as well as the six focus children in each class. These descriptions focused on parameters that might be expected to reflect differences related to teacher-child discourse.

CHAPTER FOUR

RESULTS

The previous chapter described the study design and methodology. In this chapter, the results of the study are described. The results for the first two research questions can be understood as the final set of modifications made to the methods for (a) recording dyadic classroom discourse and (b) describing it. Results for the third research question which considered how the methods of recording and describing dyadic classroom discourse might be adapted for classroom-based use are a summary of the comments made by both the teachers and the researcher on this question.

The first part of this chapter accounts for the inductive research procedures that addressed the first two research questions. It describes the modifications made to the preliminary procedures for recording and describing dyadic classroom discourse. The second part of the chapter summarizes the results of the study for each of the three research questions.

Accounting for the Research Procedures

In the inductive inquiry process used here, data were analyzed cumulatively rather than in a single step as in deductive inquiries. Accounting for the research procedures meant accounting for changes made to procedures throughout the cycles of sampling, data collection, and data

analysis. Two of the research criteria focused specifically on this problem. These were the dependability and confirmability audits described by Guba and Lincoln (1982) (see Figure 5 on p. 97). The research notebook was used to document this information. The accounting process describes the modifications made to procedures by relating the modifications to the set of research criteria. Modifications sometimes involved only one criterion. Other times, judgements among two or more competing criteria were necessary. Generally, preliminary procedures for sampling and recording were robust, and many were maintained. However, some potential problems were identified, and some additions were made. Where revisions did occur, they required no second revision. In contrast, modifications to the procedures for describing dyadic classroom discourse involved exclusions, revisions, additions, and revisions to revisions, and only a few aspects of the preliminary procedures were maintained throughout. As well, modifications were made to criteria and to the modification procedure itself. The modifications to each set of procedures are summarized below. Detailed documentation of each set is provided in Appendices M, N, O, and P.

Modifications to Sampling Procedures

Sampling decisions were made in advance about the communities, schools, teachers and groups of children who would participate in the study, and decisions about the focus children were made during the familiarization

phase. Several discrepancies were observed between the selected samples and one sampling criterion, but based on a consideration of all criteria, no modifications were made. The selection of participants as described in Chapter Three remained constant throughout the course of the study. However, potential problems with both focus children and teachers were identified. These became evident as the data recording schedule lengthened, and would likely increase in probability of occurrence as the length of a study increased.

While few changes occurred in the original sampling decisions about participants, modifications were made in the sampling of contexts. Many logistical difficulties arose with the preliminary weekly recording schedule necessitating modifications. Procedures for obtaining a systematic sample required few changes, but another variable, days of the week, was identified and incorporated into the sampling.

It had been estimated that ten weeks should be sufficient to collect recordings until informational redundancy was reached. However, numerous conflicts delayed the taping sessions including the cancellation of sessions and problems with equipment, and taping extended over four and a half months. Redundancy began to appear after approximately 7 recordings, and 10 were taken in each setting, providing a total of 417 episodes. Some recordings did not get transcribed or discussed because of time constraints. These became archival material.

Modifications to Procedures for Recording Dyadic Classroom Discourse

Preliminary procedures for recording were in two phases, familiarization and then recording. Other than the scheduling adjustments mentioned above, the familiarization phase proceeded as planned. The pilot studies had focused on developing methods for recording dyadic classroom discourse. Audiorecording and videorecording methods were tried and adapted several times in the second pilot study, and became the methods described in the preliminary procedures. No aspect of these methods was deleted, but details were added. Modifications were also made to the processes accompanying recording. Modifications are summarized below. Detailed descriptions of the modifications are provided in Appendix N.

Audiorecording

Several potential problems with preparing to audiorecord were identified. These all appeared to be related to the compactness of the audio tapedeck and lack of indicators of the unit's functioning. While these details may appear minor, beginning a recording session was often done in a busy context with the teacher and children talking and a number of events happening concurrently. Often a child or the teacher would also be talking to the researcher. Equipment preparation required a method that checked each of these details systematically.

Making the accompanying observational record proceeded as planned,

but its accuracy became more questionable as experience with the two methods of taping was gained. It also became evident that no amount of modification could increase the observer's ability to observe and record the amount of detail in some episodes.

Videorecording

Several refinements to the preliminary procedures for videorecording were added as the researcher developed more skill and familiarity with this recording method. Despite initial concerns about the relative complexity of this process, no malfunctions were sustained long enough to interfere with the videorecording.

It became apparent that the videorecording method was less complex than had been anticipated. As well, it was observed that audiorecording appeared to be more intrusive than videotaping, because of the difference in the role of the researcher. Combined with the limitations of the observational records noted above, these observations were used to change the proportion of videotaping to audiotaping in the study, and equal numbers of the two types were obtained.

Processes Accompanying Recording

A major addition to recording procedures was developing the role of the researcher. More than any other aspect of the recording process,

developing this role depended on the researcher's experience in primary grade classrooms. It involved the accumulation of skills and knowledge of primary level classrooms collected over a number of years in these contexts.

Another addition was the development of routines for handling of equipment and tapes. Unlike the small scale of the pilot work, the number of tapes and items of equipment being handled on a daily basis required the development of routines to ensure their correct identification and maintenance. Although the detail developed may seem overly laborious, it was found necessary within the schedule of this study.

Modifications to Procedures for Describing Dyadic Classroom Discourse

Describing dyadic classroom discourse was understood to involve two methods, transcription and coding. Both methods involved techniques and the conceptualization of the discourse in the samples. Transcription involved contextual and structural features, and coding involved features of function, affect, and meaning. The major reference for the modification of the features was the working view of language as described in Chapter Two.

Modifications to Transcription Procedures

Techniques for transcription were relatively simple and only several modifications were made to them in the research process. However, many modifications were made to the conceptualization of features of the discourse

being transcribed, as well as to the transcription conventions used to represent these features. One modification was made to the criteria in this phase of the study. It is discussed first. Details of modifications of transcription procedures are provided in Appendix O.

Criteria. Only the criteria for accuracy and completeness and for ease and efficiency of processes of data description were relevant to the modification of transcription procedures. The first modification was to clarify these two criteria.

Two principles termed authenticity and practicality described by Edwards (1993) were used to define these criteria more carefully. Authenticity reflected accuracy and completeness, and practicality the logical criterion.

It became evident that these two principles often functioned as a check on one another. For example, judgements were made about how much new information should be added until a transcript became unreadable. It also became evident that these decisions were directly related to the audience. For example, for the classroom teacher and researcher both of whom had considerable knowledge of the context, information could be omitted without a loss of authenticity. Both readers could recreate the events using their contextual knowledge and their memory of the events. For a reader who had not been present, and especially one unfamiliar with the context, the principle of practicality would dictate that much more information would need to be transcribed. It was also seen that the judgement about practicality

could change. For example, as both teachers and the researcher became increasingly familiar with working with the transcripts, additional information could be added, without loss of readability.

Transcription techniques. Four modifications were made to the transcription techniques. One involved a refinement of the techniques for using the audio and video tapes together while transcribing the videorecordings. Another involved the attempted use of a transcriber, an audio deck designed specifically for playback for transcription. This technique was not retained due to the poor quality of sound reproduction and the schedule on which it was available. The third modification was improving identification of transcripts by adding a header. Finally, it was decided that as long as transcripts were only to be read by the researcher and the teacher, identification of participants in the transcripts need not be limited to initials which made the reading of the transcripts more difficult. Pseudonyms would be used when material was prepared for other readers.

Contextual and structural features and their transcription conventions. One of the first steps in using the preliminary description of features was to identify additional qualities that had been assumed, but not stated explicitly. These implicit qualities were considered part of the preliminary procedures, and not as modifications. Only minimal changes were made to contextual features. However, only a few of the preliminary definitions of structural features remained unmodified throughout the analysis of the transcripts. The

definition of discourse structures underwent considerable modification.

Verbal, nonverbal, and nonvocal elements were not extensively redefined, but their transcription conventions were.

Some features were maintained initially, but then later revised. For example, interruptions were first maintained, but later revised five times. Other features were identified through the transcription analysis and added to the list of structures being transcribed. Some additions represented qualities that are probably typical of dyadic discourse in the context of classrooms. These included language about language⁴ involving such features as reading, the speaking of letter names, and the articulation of a phoneme for a letter, and also terms of address.

Intonation was initially excluded temporarily, but never reintroduced. Its exclusion was based on the complexity the intonation curves added to transcripts, but also because it was observed that teachers in reading transcripts were able to recreate much of this information.

Modification to Coding Procedures

The preliminary procedures provided only minimal direction for this aspect of the research process. Multiple modifications were made to the inductive research procedures, and they developed into three different phases

⁴Language across the curriculum and the following terms are defined in the glossary in Appendix A: strategy, knowledge, and knowledge use.

characterized by different demands of the coding process. The first two phases spanned the recording and discussion of discourse samples with the teachers, ending when informational redundancy was reached. The third phase was a refinement of the coding established in phases one and two and involved only the researcher. Although coding primarily involved the conceptualization of the discourse in the samples, one technique was identified. In the course of the study, considerable modification and development was made to features of intent, but not to affect or meaning. The modifications are briefly described below. Detailed descriptions of all modifications are provided in Appendix P.

Coding processes - phase one. The first modification to the coding processes was made before the first coding discussion session with teachers. A set of four questions was developed to help focus the teachers' coding on the dimensions to be coded (see Appendix Q). The next modification was to the scheduling of the transcript discussion sessions providing more flexibility to the research schedule.

Beginning with the first transcript, a set of modifications was made to the organization of the sessions. It was estimated that the preliminary procedures for coding would be too complex at first for both the teacher and researcher. It was decided to audiotape the discussion at first, and then use the teacher's taped comments to add codes to the coding sheets later. The first coding discussion sessions affirmed the complexity of the task, but also the

potential value of this activity to the study. With reference to various criteria, a different approach to coding discussion sessions emerged based on an open-ended discussion of the transcripts. These sessions accomplished several purposes. First, discussions developed about classroom activities, teaching practices, and about particular children and their background and development, often extending beyond the issues and children in the transcripts, as seen in Figure 6. This quality was expected to help meet the need for the study to be useful from the teachers' perspectives.

The discussions also provided the opportunities for the researcher to discuss details of the study procedures, obtain the teachers' opinions about them, and for the teachers to ask questions, all contributing to the participation of the teachers in the research process. As well, this process provided an array of descriptors and a more insightful consideration of transcripts than had been anticipated. The preliminary descriptors of intent and affect were abandoned and instead in vivo codes were taken from the discussions. Early in phase one, it became evident that the amount of information conveyed by the transcripts from the teachers' perspectives was voluminous. The intensity of the teachers' discussions coupled with constraints on their time affected how systematically the questions for each episode could be addressed. The primary focus of the teachers was almost always teacher's intent. Codings of teacher's affect and children's intentions and affect were collected, but less systematically than planned, and it was

Figure 6. Sample of episode and discussion of episode showing application of discussion sessions to teachers' practice.

Middletown: Transcript #12, Episode # 2

LISA TAKES AWAY THE YARN.

JUDITH do you want a paper plate Jennifer ///
huh / well here you go ///

JUDITH FINISHES PUTTING THINGS AWAY AND THEN GOES BEHIND LISA AS SHE RETURNS TO THE CLASSROOM.

Discussion of Episode #2

(Judith fills in details about what is happening that were not on tape. Jennifer was sort of looking around. She hadn't asked for a paper plate.)

JUD: She hadn't asked for a paper plate but she looked like she wanted one. I'm just anticipating.

ACL: That's a typical pattern for her. She comes up. She may go "Mrs. J. " but usually she waits and eventually you get to her. She does that quite nicely. She doesn't interrupt or bug or anything. She just hangs in there and eventually she gets what she wants. She does that quite well.

JUD: And that's what we want kids to learn that they can have what they want most of the time but there are ways you can get it and there are times when you can. Timing is everything.

ACL: And she seems to be doing quite well with the timing whereas Cody has no sense.

JUD: Kevin has no sense. Amy has no sense. Those kids that sit there in circle and you're having a conversation about something and they put their hand up and say " my dog has fleas".

Note. 1. Changes made to excerpts from transcripts and transcript discussions included here are: (a) initials or names are changed to pseudonyms, (b) formatting in different fonts in transcripts is all changed to font of the text but using uppercase to designate gloss, (c) all transcription conventions have been standardized to the final forms developed in the study, and (d) boys other than the focus children are all called Kevin or Cody, and girls, Lisa or Amy. In the discussions, the researcher is identified as ACL.

decided that only teachers' intentions could be pursued systematically through to the end of the study.

As codings began to proliferate, it became readily obvious that the use of the audiotapes for the constant comparison process was inadequate. Despite the logistical factor, discussion tapes were transcribed. As well, a qualitative data analysis program called Hyperqual (Padilla, 1990) was introduced to the coding process. In its capacity to sort and resort by any given code, use of the program greatly facilitated the coding process. The program also provided a research memos function which was used subsequently in place of the handwritten research notebook.

Coding processes - phase two. Coding procedures were modified when the teachers became familiar with the transcripts and when the descriptors occurring in the discussions began to show some redundancy. Phase one spanned the first five or six transcripts. In phase two, templates derived from the networks were introduced into the coding sessions. The teacher and researcher examined each episode and coded it using the template. Anomalies with the templates were discussed, and changes or additions to codes made. Unexpectedly, the teachers found working with the templates easy, and discussions of several transcripts could be done in the same session. This phase spanned the remaining transcripts when informational redundancy was reached.

Coding processes - phase three. Phase three was developed after it was

believed that coding was complete. A first attempt at reporting the results of the study at the end of phase two revealed difficulties in describing the coding, although it was not clear why. A third phase of coding was developed using different coding processes.

No attempt was made to retain the unique terms used by each of the teachers. Instead, codes were defined by some combination of features incorporating information from the discussions as well as from the transcripts. The same definitions were applied to the three sets of transcripts.

In this process, one problem related to the criteria for dependability and confirmability became evident. There was no system being used to track the modifications being made to the codes. The coding process, especially in phase three, involved many comparisons, even in designating a single code. The completed set of codes at the end of each phase was available, and a number of research notes had been entered into the Hyperqual research memos file while coding, but these notes did not encompass all the modifications made. The fact that any change made into the Hyperqual program was automatically saved meant that no records of the process of change were readily available.

This problem was mostly related to the coding of concepts of intent. Categorizing and network construction was done on paper providing a record of modifications. Nevertheless, much of the thinking and logic behind the modifications was not recorded.

By the end of this phase, the comparing and contrasting of the different features resulted in a substantial decrease in the number of codes, with one set of codes being used for all three sets of transcripts instead of individual sets for each teacher. Subtypes of many descriptors were identified as were ways in which different descriptors differed from one another.

Through the phase three revisions, it was observed that the phase two sets of codes had been characterized by several qualities. Some of the terms used by the teachers were redundant. Others were used ambiguously. Many of the codes previously identified separately became recoded as a subtype of another. Although by the end of phase three, it was generally obvious how to code a feature of an episode, certain features remained perplexing, most notably, episodes with particular children, and the coding of affect.

Techniques. Both theoretical sensitivity and tacit knowledge were recognized in advance, but their roles were unclear. In phase one, a technique in which theoretical sensitivity and tacit knowledge were integrated was developed. In the process of developing this technique, the limitations of the researcher's knowledge when interpreting episodes was revealed. The limited knowledge of the researcher, the tacitness of teachers' knowledge, and the use of theoretical sensitivity by the researcher are illustrated in the discussion in Figure 7. Because of the limitations of the researcher's knowledge, separate entries of the researcher's and teachers' codings were not retained.

Features of intent, affect, and meaning. In the preliminary procedures, intent was to be coded as referential, social, or interactive, affect as positive, negative, or neutral, and meaning as direct or indirect, and conventional or idiosyncratic. The first modification was the abandoning of the initial descriptors of intent and affect and instead taking codes directly from the teachers' language. In discussions of intent, it was found that intended and apparent effect tended to blur together. To help conceptualize intent as intended effect, codes of intent were phrased in the infinitive form. At first, intent appeared to be composed of three constituents, but later as two, identified as strategy and knowledge. Both were understood as the language of the teacher but defined in terms of the intended effect on the child. In turn, strategies were also categorized in terms of the child. Knowledge was the values or expectations held by the teacher for the child. Although subsequently many changes were made to the conceptualizing and categorizing of strategies and knowledge, the definition in terms of intended effect on the child was retained.

In contrast to intent, the conceptualization of affect was not well developed. Identifying forms of affect was much more tenuous than identifying forms of strategies and knowledge, and latterly only the presence of affect in the episode was coded. Its identification was often difficult usually requiring the teachers' interpretation. It had been expected that conceptualizing meaning might change substantially through the coding

Figure 7. Sample of episode and discussion of episode illustrating the researcher's limited knowledge and the tacitness of a teacher's knowledge.

Middletown: Transcript #17, Episode # 10

JOE APPROACHES AND WATCHES AND WAITS. HE LEAVES AND LOOKS AROUND THE FLOOR.

PAUL APPROACHES TO FAR AND WAITS. HE HAS THE GLUE STICK WITH THE TOP STUCK ON.

JOE where do we put these ///
 JUDITH LOOKS UP.

JUDITH u::m / ...

JOE on your chair ///
 o::r / HE IS LOOKING AROUND FOR A PLACE.

JUDITH um / ...how about / how about / just start / how about starting a pile for me // right there beside the paint pots ///

Discussion of episode #10

ACL: This is one of those complex embedded ones. It reminds me of the planes getting stacked up trying to get down. He first of all has to wait.

JUD: I'm surprised he waits.

ACL: Not long. But in this case he goes and finds another possibility which is okay.

JUD: And here again I'm always very interested in how careful I am with Joe.

ACL: How do you mean? What's careful here?

JUD: () Joe figure it out?

ACL: So is that what you're doing here by umming? You're giving him think time?

JUD: I'm giving me think time I think.

ACL: Okay you're not giving him think time. You're giving yourself think time as to how to handle it. So you're thinking about hira not really about where to put the papers.

JUD: Right.

ACL: Fascinating for me. I look at that and I'm thinking well you're trying to figure out where to put the papers and it hasn't crossed my mind that what you're really trying to do is

JUD: And I don't think I'm going how do I handle this. But I'm going he's asked a reasonable question how am I going to - Not - I'm even saying that - But instead of saying to someone else oh put it somewhere. To Joe I'm much more careful in saying why don't you start a new pile.

ACL: More of a deliberate quality?

JUD: I think again because I want - because it would mean something to him to get to start the pile.

ACL: With other kids it would be a neutral issue.

process. However, no changes were made.

Initially, each episode was to be coded for intent, affect, and meaning. However, a very early observation was that individual episodes often did not appear to correspond to single features of intent, affect and meaning. Instead several codings might be made in one episode, but not identified with separate sections of the episode.

In summary, the criteria of dependability and confirmability audits specified that research procedures must be recorded in some systematic way. The accounting process described above was designed to meet these criteria. Inherent in this process was documentation on how the other research criteria were met.

Results

In the remainder of this chapter, the results for each of the research questions are presented. The results are understood as specific to the parameters of the study.

Methods for Recording Dyadic Classroom Discourse

The first research question asked what methods for recording dyadic classroom discourse could be developed. In this study, methods for both audiorecording and videorecording of dyadic classroom discourse were

developed. Methods were to include techniques for recording or describing the discourse samples and ways to conceptualize the sampled language. However, recording methods consisted primarily of techniques, and conceptualization of the discourse recorded is not discussed separately. First, the audiorecording method is described, then the videorecording method, and then the two methods are compared.

The Audiorecording Method

Equipment. Audiorecording equipment consisted of an Aiwa walkman type cassette recorder with rechargeable batteries attachable to a belt, with a stereo microphone attachable to a collar or pocket. Maxell UR-90 audiotape was used. Sanyo and Sony double deck recorders with a high speed dubbing function were used for duplicating and transcribing audiorecordings.

Recording. The recording process began by ensuring the pause button was taped in the on position. A routine check was made to ensure that batteries were correctly placed, the microphone correctly connected, and a blank tape was placed on the correct side in the recorder. The teacher put on the belt and recorder and attached the microphone. The unit was switched on to record and left to run for the 45 minute session, and then taken off when convenient for the teacher. An observational recording was completed by the researcher during the session. The record began with entering the date, class and starting time of the session. Time was then entered at five minute

intervals. The initials of the children the teacher interacted with were entered in the sequence in which interaction occurred in the appropriate group's column, and additional nonverbal and nonvocal cues to help identify the episode were recorded for the focus children. Any additional notes about the session were made.

Problems with the audiorecording method. Although this method was considered adequate here, two problems were identified. First, it was not readily apparent if the recording unit was taping. A unit that clearly indicates ongoing function would be preferable. Second, in the observational record, nonverbal, nonvocal and contextual features were often not well recorded. The quality depended on frequency, and length of successive interactions with children, and so this information was recorded unevenly across different episodes. Although the quality of recording improves with practice, there is a limit to the comprehensiveness of the technique.

The Videorecording Method

Equipment. Videorecording equipment was a Quasar VHS Camcorder that weighed approximately 1.2 kilograms and had four camcorder video cassettes. The battery pack's charge lasted approximately one hour, but the length of the cartridges was only 30 minutes each. Tape used was Fuji A/V Pro T120. A Sony VHS video cassette recorder was used for duplicating and transcribing the videorecordings.

Recording. The videorecording method included the audiorecording method described above but excluding the observational record. The first step in videorecording was to prepare and start the accompanying audiorecording. Then, one blank cartridge was placed in the camera and a second in a pocket. The battery pack was put in place, the unit switched on, and date and time indicators set so as this information would be recorded onto the tape. After about 28 minutes of recording, a warning appeared in the viewing eye to indicate that the cartridge was almost finished. It was exchanged for the other at a moment judged the least disruptive of the taping.

Throughout the videorecording session, the camera was focused on the teacher. The focus for location, height and direction was adjusted as she moved around the room. The zoom feature was used to obtain close-up recordings of nonvocal details, such as gaze direction, facial expression and other nonvocal information once an episode was begun.

The researcher did not hold the camera flush against her eye but about three centimetres away. She kept both eyes open which permitted a focus on the interaction through the lens with one eye and a focus on the rest of the classroom with the other. When a forthcoming episode was identified, the camera focus could be shifted so that the current episode was to one side of the field and the approaching child at the other side, permitting all of the initiation of the new episode to be recorded. One other effect of this technique was that the researcher could blend into classroom activities more

easily since she could make eye contact with children around her. Because there was an independent audiorecording, she could sometimes make brief comments to children while recording. The researcher positioned herself and the camera around the perimeter of the room and on the opposite side from the teacher. It was found that from this position termination of an episode could be contained within the field. The zoom function could be used to obtain detailed information after an episode was initiated. Adopting this position also meant that episodes could not be initiated behind the camera and that the researcher and camera were out of the way of ongoing class activities.

The audiotrack of the camera was used for making verbal notes during recording. This was possible as the main audiotrack for the session was being recorded onto the audiorecorder worn by the teacher. Such notes included details about the onset of an episode that had occurred out of camera range, about a forthcoming episode, or about a response made by a child or the teacher relating back to an episode that had been terminated, such as a child's compliance or a teacher's visual check on the child's activity. Other notes, such as a child's absence or other factors affecting the sampling could also be added. These verbal notes were transferred into the research notebook at the time of transcription.

Problems with the videorecording method. A potential problem related to the ease of adjustment of the camera features. As there was

considerable movement throughout a recording session, it was easy to accidentally change such functions. However, a feature of the camera was its display of operating information in the viewfinder, and such accidents could be corrected almost instantaneously. One problem that was not resolved here was the need to use two camcorder cartridges to tape a 45 minute session. A better match between length of recording session and camcorder cartridges would be desirable.

Comparing Audio and Video Recording Methods

Initially it was assumed that videorecording would be more intrusive and a more complex method than audiorecording, making the audiorecording method preferable. However, various observations contradicted this assumption. One problem was the incompleteness of the observational record that accompanied the audiorecording. Episodes of dyadic classroom discourse were often brief and occurred in densely packed sequences, sometimes one embedded within another. Recording all the necessary cues to transcribe the audiotapes was often difficult, and recording of other contextual information impossible.

In contrast, the videorecording technique provided a more complete and accurate recording. Most nonvocal features were recorded as well as contextual features. Also, there were two audiotracks and sometimes children's talk that was at a distance from the teacher, and so not recorded

onto the audiorecorder, was picked up on the audiotrack of the videorecorder. Also, the dubbing of verbal notes provided additional information about a session.

In audiorecording, the role of the researcher when taking field notes changed considerably from the familiarization phase and other times when she was in the classroom. There were often few opportunities to make eye contact or a verbal response, even to redirect a child away from the researcher. It was difficult to move around the room, sometimes resulting in the researcher's position interfering with classroom activity when it moved into her proximity. For these reasons, the audiorecording method was considered intrusive in this study.

In contrast, intrusiveness of videotaping was lessened by the positioning of the researcher and camera around the perimeter of the room and at a distance from the teacher. The proximity of the researcher to ongoing activity remained relatively constant. Also, videorecording permitted the researcher to control her interaction with the children in the room, in particular to make eye contact and use facial expression to communicate with them.

In summary, methods for audiorecording and videorecording of dyadic classroom discourse were developed in the study. The videorecording method was considered to be more accurate and complete and less intrusive.

Methods for Describing Dyadic Classroom Discourse

The second research question asked what methods for describing dyadic classroom discourse could be developed. Two types of methods were necessary for describing dyadic classroom discourse. These were transcription and coding. Transcription methods involved techniques for transcription and the conceptualization of structural and contextual features being transcribed. A sample of a single complete transcript is provided in Appendix V. Coding methods involved techniques for coding and the conceptualization of features of function understood here as intent, affect, and meaning. The network in Figure 8⁵ provides a summary of all the features identified in transcription and coding.

Transcription - Techniques

Equipment. In the transcription method developed here, the equipment used was the double deck units and the video cassette recorder described in the previous section. Despite the repeated rewinding and replaying tapes, there were no problems with any of the equipment or tapes throughout the research process. A transcription machine was used briefly but the quality of the reproduction was not as good as with the double deck units.

5. Figure 8 is oversized. It is located in the map pocket at the end of the volume.

Transcription. Transcription of both types of recordings involved identifying an episode with a focus child, listening and/or viewing it, and entering the features to be transcribed directly into a word processing program using their transcription conventions. Rewinding and relistening to parts of the episode usually were necessary to get a complete record of all elements. In transcribing the videotapes and their accompanying audiotapes, both tapes were allowed to run with the videotape about one second ahead of the audiotape. Emerging episodes were identified on the videotape and both tapes stopped simultaneously. Information about the context and the onset were entered into the transcript and then the videotape restarted and all information available on it transcribed. Then the audiotape which provided most of the verbal elements was restarted and this information added to the transcription. Verbal information missing from the audiorecordings, such as children calling across the room to the teacher, was sometimes available on the audiotrack of the videotape.

Transcripts were identified on every page by a header containing date, recording session number, school/class identification code, and page number. While transcripts were only being read by the teacher and researcher, children's full or partial names were used. Pseudonyms were substituted when the material was prepared for other readers.

Transcription - Contextual and Structural Features

The definitions of contextual and structural features and of their transcription conventions as they were developed in this study are described below. There is no attempt to provide frequency or distribution of occurrence of features, as this was not the purpose of the study.

Contextual features. Context was understood to include the identifying information for each transcript. This was the date, recording session number, the school/class code, and recording type recorded in the transcripts' header. As well, context was considered to include the ongoing activity of the entire class, where activity was understood to include both actions and speech. The class was understood primarily as the teacher and the children, but other participants such as principals and parents were also included. When the normal role of the child was in any way different, such as the days when a child was designated special helper, this information was included. Finally, context included real time recorded in five minute blocks. Other than the header, all contextual information was recorded in gloss which was differentiated from the episodes in the transcript by Chicago 12 font.

Structural features - discourse structures -episodes. The basic unit of discourse in this study was an episode. Episodes were recorded in New York 12 font. To help differentiate them easily in the transcripts, they were bracketed and numbered in the left hand margin. They were recorded in a vertical spatial arrangement (Edwards, 1993) with the speaker's name flush

left, followed by indent, followed by verbal and nonverbal information. Any nonvocal elements framing the episode or integrated into it were recorded in gloss but also indented. In the study, eight variations on the basic form of an episode were identified. These forms are summarized in Figure 9.

Structural features - discourse structures - turn taking patterns.

Episodes were understood to be composed of alternating turns between the two participants in the dyad. Six variations on the standard type of turn pattern were identified here. Turns were composed of sentence-like, phrase-like, and cloze segments. Turn patterns, segments of turns and the transcription conventions related to them are summarized in Figure 10. Onset and termination patterns were identified as a special form of turn pattern. They were the sequences of turns used to open and close episodes. Three variations on the basic form of onset pattern and two variations on the basic form of termination patterns were identified. The different forms of onset and termination patterns are summarized in Figure 11.

Structural features - discourse structures - topic structure. Topic structure was originally defined as topic selection, introduction, maintenance, and change. The topic of the episodes was almost always a subtopic of the classroom activity in progress, and so topic selection and introduction were not relevant, although a few instances of topic selection and topic shift did occur. No observations about topic maintenance were made.

Structural features - discourse structures - location. Location was identified

Figure 9. Types of episodes.

<u>Episode Type</u>	<u>Definition</u>
Basic	- self-contained interactive exchange between a teacher and one child with turns occurring contiguously, with a clear initiation and termination, including any preceding and following activity that frames the exchange, and independent of other exchanges with other children
Interruption	- episode is begun by an interruption into another exchange; even if no response, it is considered an episode as no response can be a type of response
Linked	- episode is begun within another episode with another speaker such that the border between the two episodes is unclear
Contingent	- episode is a response to a previous episode
Compound	- episode is a continuation of a previous one
Renewed	- episode is terminated and reinitiated and continues as if not terminated
Interrupted - Terminated	- episode is interrupted by a third party and terminated
Interrupted - Sustained	- episode is interrupted by a third party and episode is continued after the interruption
Overlapping	- episodes may overlap with a speaker maintaining several episodes with different participants but no interaction among the episodes

Figure 10. Turn taking patterns and segments of turns and transcription conventions (TR CONV).

<u>Type of Turn or Segment</u>	<u>Definition</u>
Basic	- episodes are organized as alternating turns between the 2 participants with a turn defined as the speech of one participant and the endings of a turn defined by syntax, falling intonation and longer pause than at the end of sentence-like segments TR CONV: Vertical spatial arrangement with speaker's initials flush left, tab, then speech; end marked with triple forward slash
Ambiguous Endings	- one element defining ends of turns may be missing
Delayed Turnover	- ending may be longer than normal TR CONV: Quadruple forward slash
Empty Turn	- there may be no evidence of a turn taken creating an empty turn
Scripted Turn Patterns	- may form alternating pairs such as question-answer or statement-confirmation
Interruptions	- one speaker in the dyad takes a turn before previous turn is complete; TR CONV: interrupting speech inset approximately under point of interruption in previous turn
Asides	- interruption may be by one participant taking a turn to address a third party; resembles a theatrical aside
Segments - Sentence-like	- sections of turns that are sentence-like with endings defined by a combination of syntax, falling intonation, enough pause for a breath TR CONV: Double forward slash
Segments - Phrase-like	- sections of turns that are phrase-like with endings defined by a combination of syntax, rising intonation, and no pause for a breath TR CONV: Single forward slash
Segments - Cloze	- sections of turns that end by incomplete syntax, rising final tone, extended final phoneme, and usually eye contact

Figure 11. Types of onset and termination patterns.

<u>Type of Pattern</u>	<u>Definition</u>
Onset Patterns	
Basic	- a 2 part sequence with addressee responding immediately to addressor, with both turns being speech, action, or both
Recursive	- when no response to attempt to initiate, attempt is repeated either using the same structure or a different one
Failed	- initiation received no response
Delayed	- no response to initiation attempt, but no recursive phase and response occurs but is delayed
Termination Patterns	
Basic	- a 2 part turn pattern with the second turn being an immediate response to the terminating move of the first turn, and both turns being speech, action, or both
Recursive	- a 3 part recursive sequence with response to termination eliciting another response
Simple	- implicit only marked by end of topic and a shift away from the orientation to the partner

here as a discourse structure. Although typically participants in a dyad may be close together throughout an episode, other locations of episodes were identified. Episodes could be conducted over a distance, while both participants were moving, and also over a shift in location. This was recorded in gloss within the episode.

Structural features - verbal elements. All verbal content was transcribed. This included incomplete words, morphemes that were not standard English, and single phonemes. As well, unintelligible content was indicated in the transcripts, where possible with a paraphrase or gist of what seemed to be said. Extended vowels, extended final consonant sounds such as <sh> and <th>, and repeated consonants were also transcribed. Three specific forms of verbal content were identified. The first was language about language. The second was variations of terms of address. The third was the pronunciation of a phoneme instead of naming a letter. Verbal elements are summarized in Figure 12 with their transcription conventions.

Structural features - nonverbal elements. A variety of nonverbal elements were transcribed. Some were clearly distinguishable. These were vocalizations such as laughing and coughing, and inbreaths and outbreaths. However, the other nonverbal elements were less clearly identifiable, and were identified if judged as differing from normal for the speaker. These elements were volume, time between words, speed of speech, articulation, and tone. Nonverbal elements and their transcription conventions are

Figure 12. Verbal elements and their transcription conventions (TR CONV).

<u>Elements</u>	<u>Definition</u>
Basic Verbal Content	- includes incomplete words, morphemes that are not standard English, single phonemes TR CONV: conventional English spelling
Unintelligible Content	TR CONV: located in turn as empty parentheses or paraphrase within parentheses
Extensions of Vowels and Final Consonants	TR CONV: double colon after the letter
Repeated Consonants	TR CONV: repeated letter
Language re Language	- words spelled or letters named TR CONV: upper case letters with space between letters
	- words read TR CONV: upper case letters with no space between letters
Terms of Address	- names other than the normal form TR CONV: for less formal forms, name followed by a down arrow and for more formal forms, name followed by an up arrow
Phonemes for Letters	TR CONV: inside single quotations

summarized in Figure 13.

Structural features - nonvocal elements. Nonvocal elements that were identified were actions accompanying episodes, gaze direction, eye contact, hand movements, proximity, facial expression, and head movements. These elements with their related transcription conventions are summarized in Figure 14.

Coding - Techniques

One technique for coding dyadic classroom discourse was developed. This was the use of theoretical sensitivity and tacit knowledge. Tacit knowledge was elicited through the discussion process in which the researcher drew on her theoretical sensitivity to encourage teachers to think more reflectively about the transcribed events. Theoretical sensitivity for the researcher included her experience in primary grade classrooms, her personal experience, her knowledge of classroom discourse, and the working view of language. She suggested to teachers possibilities that elicited more sophisticated explanations of the teacher's intentions in a particular episode. The tacit knowledge of the teachers elicited through this process often added considerable insight and complexity to the discussions.

Coding - Intent

Two dimensions of teacher intent were identified. These were termed knowledge and strategy. In Alexander, Schallert and Hare's (1991) conceptual framework for describing knowledge and its terminology in work in

Figure 13. Nonverbal elements and their transcription conventions (TR CONV).

<u>Elements</u>	<u>Definition</u>
Vocalizations	- chuckling, laughing, giggling, singing, groans, throat clearing, tongue clicking, coughing, idiosyncratic forms such as Urrgh TR CONV: In gloss in location in turn in L.A. font
Inbreaths and Outbreaths	TR CONV: HH for inbreaths and hhh for outbreaths in gloss at location in turn
Volume	- markedly different than normal TR CONV: Font 14 for higher volume and font 10 for lower volume
Time between words	- less than normal TR CONV: equal sign joining the 2 words
	- markedly more than normal TR CONV: double period
Speed of speech	- accelerated beyond normal or slower than normal TR CONV: Italics for accelerated and letters separated by periods for slower
Articulation	- clearer than normal TR CONV: in gloss at location in turn
Tone	- affective information identified subjectively TR CONV: in gloss at location in turn in San Francisco font

Figure 14. Nonvocal Elements and their transcription conventions (TR CONV).

<u>Elements</u>	<u>Definitions</u>
Actions Accompanying Episodes	TR CONV: in gloss
Gaze direction	TR CONV: in gloss
Eye contact	TR CONV: in gloss
Hand Movements	- tapping on arm, directive holding of shoulders, presenting of object to be seen, pointing, tapping on book or other object, raised hand, non-directive touches, preventing movement, demonstrating topic, holding shoulders. TR CONV: in gloss
Proximity	- close proximity was relative to the teacher and was not enough for another child to enter the space; mid range proximity was between close and far; far was enough space for another child to enter to initiate an episode; further than far was beyond far TR CONV: CLOSE, MID, FAR, FARFAR in gloss
Facial Expression	- subjectively identified TR CONV: in gloss
Head Movements	- included head turning, shrugs, nods, head shaking TR CONV: in gloss

cognition and literacy, they differentiated between knowledge and knowledge use. The authors defined knowledge as "an individual's personal stock of information, skills, experiences, beliefs, and memories" (p. 317). Their definition was adopted here. They described knowledge use as how knowledge is activated or processed. This concept was seen as similar to the concept of strategy developed here. Strategies were understood as tactics used by the teacher to accomplish some effect in a child. More simply, strategies were how a teacher attempted to help a child use or acquire knowledge. In the analysis of teacher intentionality, every episode was coded for both knowledge and strategy.

Coding - Intent - Strategies

All strategies were defined by the property of tactics used by the teacher to accomplish some effect in a child. However, they were distributed along a continuum according to the directness of the teacher's attempts, and organized into categories accordingly. At one end was a category called No Immediate Effect. It contained strategies which had no recognizable relationship to knowledge building with children. Next a category called Interaction was identified where the purpose was only to open up an interactive exchange. The next category was termed To Obtain Information. This category had no explicit connection to knowledge use by children. However, it can be understood as strategies used to inform other types of

intervention. The next two categories, termed Child's Current Activity and Child's Next Activity did not focus on children's knowledge directly.

However, these strategies are frequently assumed to support or contribute to children's learning indirectly. In the last category, termed Child's Understanding, strategies were all identifiable as direct intervention in the state of children's knowledge. Following are more detailed descriptions of these strategies. A number of subtypes of strategies were also identified, some more clearly than others. Those that appeared more strongly are described. However, it is assumed that others, not identified here, could also be found.

No immediate effect. Three types of strategies were identified within this category. These were termed to think, to amuse self, and to hide meaning. The to think strategy was a way for the teacher to obtain time to think about a situation without having any impact on the children as when Laura says "to say why" in the following episode.

LAURA IS TALKING TO ANOTHER CHILD BESIDE CHARLENE.

CHAR you know what Mrs. L///

LAURA IS STILL TALKING.

my mum told me don't ever say why to someone
because it's rude///

LAURA to say why ///

CHAR yeh///

(Oldtown: Transcript #6, Episode #8)

All three teachers identified several episodes where their intent was to hide meaning from a child although it might be interpretable by an adult, especially one familiar with the setting. One example of this strategy was the following.

ELIZ CONTINUES DIRECTING OTHER CHILDREN TO FINISH ASSESSMENT TASK.

ELIZ Cindy can you do me a favour///
two favours// put that on your head and put the book
away///
for me// please///
(Newtown: Transcript # 3, Episode # 2)

The teacher explained that the meaning for her in this case was "to put that bloody thing on her head and leave it there."

Interaction. Only one type of interaction strategy was identified. This was termed to initiate. This strategy was seen as specialized for opening an episode with a child or to accept a child's opening of an episode. The first turn by Laura in the following transcript was identified as an interaction strategy.

LAURA IS MONITORING OTHER CHILDREN'S WORK.
SHE COMES TO JARED'S DESK.

LAURA Jared how's it going /// HE DOESN'T LOOK UP.
LAURA POINTS TO HIS PAGE.

LAURA what's that /// HE LOOKS UP.
(Oldtown: Transcript #16, Episode # 4)

To obtain information. This category contained two strategies termed to query and to assess. Queries were defined as obtaining information unknown to teachers.

Two subtypes of queries were identified. The first was requests for information that a child may or may not have, such as information about a television show they watch regularly. The second subtype was a demand for information where the child had no choice about providing the required information such as in the following example.

LAURA LEANS OVER TO CHECK ON WORK AT THE
STORY PROBLEM STATION.
LAURA Jared / where's your pencil ///
JARED HOLDS UP HIS PENCIL.
JARED right here
LAURA is that yours or Kevin's///
JARED mine///
LAURA MOVES ACROSS ROOM.
(Oldtown: Transcript #10, Episode #6)

The to assess strategy differed from a query in that the teacher knew what answer or action she considered right, but wanted to know if the child could say or do it, as in the following example.

PAUL PRINTS HIS BEAR.
PAUL um /I passed it to Lisa ///
JUDITH that's good // now you need which bear ///
PAUL Mummy Bear ///
PAUL HE DIPS STAMP IN THE PAINT.
(Middletown: Transcript #5, Episode #2)

Child's current activity. Eight strategies were identified in this category. The first three were to stop, to reinforce, and to reinforce-negative. They were all characterized by being judgements made by the teacher on a child's past or current activity. In contrast, the other five strategies in the category, to solve, to resolve, to sustain, to facilitate, and to redirect, all involved some direction of the child's activity.

To stop was seen as a minimal teaching strategy. Its only purpose was to stop the child's current activity. There was no expectation of choice or even a response from the child other than complying. When any other activity was elicited, it was not categorized as to stop. This strategy was used where a child's safety was in question, as well as where a teacher's tolerance for more

complex teaching strategies was minimal.

To reinforce was defined as indicating approval for an activity in which the child was engaged or had just completed. It could be accomplished in various ways. One of the most common forms was the use of explicit comments stating the value of the activity. These included words such "good", "amazing", "right", and "okay", as well as statements referring to expectations such as in the following example.

LAURA I'm glad you remembered one space Wayne// ()
numbers///
(Oldtown: Transcript #6, Episode #2)

Another way to reinforce was accomplished was by attending to or responding to a child's ideas or work by listening, showing interest, or asking questions as in the following.

ALEX Mrs E you know where the one two threes are //HE
IS POINTING TO THE AREA. You can use a little piece
of tape and you can stick em up there///
ELIZ what to have them hanging down///
ALEX yeh ///
ELIZ let's try one// put your name on it and I'll try
one///
(Newtown: Transcript #9, Episode #20)

Other forms of to reinforce were ensuring children got what they requested when their behaviour had been appropriate, agreeing with them, thanking them, and statements that confirmed their knowledge or choices.

To reinforce-negative was a strategy indicating disapproval for an ongoing or newly completed activity. It was also accomplished in various ways. One way was by ignoring the child's comment or request or continuing

the episode, but not on the topic introduced by the child. Another way was by explicit statements such as "no," "no you don't," and "don't be silly." An implicit form was identified for this strategy, often in the form of questions such as "why would you do that" or "what are you doing," or expressions such as "pardon" and "excuse me." Another implicit form was statements that disagreed with the child, as in the following.

ELIZ I can see four pencils ///
 BEN all of them are broken ///
 ELIZ ELIZ LIFTS ONE OUT OF HIS BOX
 well look this one is perfectly fine///
 (Newtown: Transcript #9, Episode #16)

To solve was defined as the teacher identifying and solving a problem for a child with no attempt to explain or to help the child understand the process and no expected or required subsequent responsibility by the child. To resolve was also defined as the teacher solving a problem for a child but where the child introduces the problem to the teacher.

To sustain was a strategy in which the teacher attempted to have the child continue with an activity longer than the child may have intended. It involved explicit direction about the activity and was oriented to completion of the activity. It did not include any attempt to improve the child's understanding.

Very closely related to to sustain was to facilitate which was differentiated by the teacher adapting the activity in some way for the child, again with no attempt to improve the child's understanding of the activity, or

why or how the teacher was adapting it. Examples of to sustain and to facilitate are provided in the following examples respectively.

LAURA IS STILL OBSERVING AND MAKING BRIEF COMMENTS TO INDIVIDUAL CHILDREN.

LAURA keep copying Wayne ///
Wayne / you're playing///
you need to keep copying///
(Oldtown: Transcript #6, Episode #9)

JUDITH Paul / could you do me a favour ///
PAUL uh huh ///

PAUL IS HOLDING A PAPER TOWEL IN FRONT OF HIM AND WAVING IT.

JUDITH I see a puddle / on that chair there ///
PAUL yeh ///

JUDITH IS DIRECTING HIM TOWARDS THE CHAIR.

JUDITH do you see a puddle on the chair ///
PAUL ()

JUDITH what could you do for me / what do you think I want you to do///
see the puddle ///

PAUL yes ///

JUDITH what do you think I would like you to do ///

PAUL () HE LOOKS UP AT HER.

JUDITH please / thanks yeh ///

(Middletown: Transcript # 6, Episode #4)

To redirect was a strategy in which the teacher attempted to make a change in a child's current activity. It appeared in various forms. Two forms involved what teachers sometimes refer to as on-task activity. Redirection could involve getting a child started or on-task and also getting a child back on-task when they had begun an activity but were no longer focused on it, as follows.

APPROACHES JARED AND KEVIN AT THE BOOKSHELF

LAURA Jared what are you doing with four books Jared////

Jared///
 what's your job///
 Jared///
 what's your job///
 to read a book///
 JARED
 LAURA how many books do you need///
 (Oldtown: Transcript #1, Episode #5)

In some cases the redirection was from an undesirable activity back to the expected activity, although not necessarily successfully as in the following example.

LAURA LOOKS OVER AND SEES DAN AND KEVIN BOTH WORKING ON THE NUMBER BOND STRIPS AT CODY'S DESK. THEY ARE SUPPOSED TO BE WORKING AT THEIR OWN DESKS.
 LAURA excuse me / do you think the teacher doesn't know///
 you're sitting in your desk // are you /Dan// and doing them///
 DAN DOESN'T LOOK UP OR GO BACK TO HIS DESK AND LAURA TURNS AWAY.
 (Oldtown: Transcript #10, Episode #20)

Still another form of redirection involved redirecting a child's current activity to a different one, but one that had not previously been established with the child as in the following case.

ASSUME ALEX ASKED A QUESTION BUT NOTHING EVIDENT ON EITHER TAPE.
 ELIZ LOOKS UP AT ALEX TO GIVE NAME OF THE GAME.
 ELIZ uh / what time is it Mr. Wolf ///
 ALEX IS LOOKING AT SOMETHING ON THE CHAIR BESIDE HIM.
 so can you just waitt find something quiet to do for about three minutes ///
 ALEX LEAVES.
 (Newtown: Transcript #14, Episode #4)

Finally, instances where teachers attempted to engage a child in a new activity were considered a form of redirection, as were attempts to focus a child's attention at a more complex level of an activity.

Child's next activity. This category of strategies was characterized by teachers' attempts to influence the child's next activity. One strategy in this category was to be directed. This strategy involved statements of what the child should do next. The following was a typical example.

JUDITH Graeme / would you move my shoes out of the way
 please and put them there for me please///
 (Middletown: Transcript #5, Episode #4)

Another strategy in this category was to be chosen. Here the teacher's intention was to have the child choose his/her next activity. In one form of this strategy, the child was provided several possibilities and told to choose. In the other form, no set of possibilities was provided. Two other strategies in this category were termed to be permitted or to be prevented. They consisted of the teacher giving permission for a subsequent activity requested by a child or denying permission for a subsequent activity requested by a child.

Child's understanding. This category was characterized by teachers' direct intervention with the state of the child's knowledge. Five strategies were identified in the category. They were to have observe, to transmit, to strengthen, to develop, and to have self-assess. The five strategies were distinguished by the level of learning expected. To have observe was seen as the simplest stage of developing understanding. To transmit, to strengthen

and to develop were all seen as more active teaching and learning strategies. To have self-assess was considered to make a more sophisticated demand on children's knowledge and learning.

To have observe was often referred to as modelling by the teachers but was relabelled here to reflect teachers' intentions in terms of effects on the children. It was characterized as having children observe, and like to transmit, did not require any indication of how well the child understood.

To transmit was a strategy characterized by providing new information to the child. This strategy usually was characterized by no turns by the child. An example of this strategy is the following.

GRAEME LOOKS UP AT HER BUT NO RESPONSE AND HE LOOKS BACK DOWN AND CONTINUES CUTTING. JUDITH STARTS TO MOVE AROUND TO GRAEME'S SIDE.

JUDITH I'm laughing/ because you have your tongue out// when you're cutting // and when people do hard things /when people do hard things / JUDITH BENDS OVER CLOSER TO GRAEME. they often stick their tongue out to the side of their mouth //I do it all the time/// JUDITH STANDS UP AND STARTS TO MOVE BACK BUT THEN LEANS OVER GRAEME AGAIN WATCHING HIS CUTTING. GRAEME REMAINS FOCUSED ON HIS CUTTING.

(Middletown: Transcript #17, Episode #3)

To strengthen was defined as a child having some knowledge about the activity and the teacher reminding him/her about what they had already been told. There was no new information, nor was the information being reorganized. The emphasis was on understanding the activity. It was also characterized by the teacher attempting to elicit signs of understanding from

the children as in the following example.

LAURA we said not to number ahead Charlene // you had a problem numbering ahead last time / I've asked you not to number ahead / you continue to do it // you understand what I mean don't number the numbers ahead ///
do you understand that ///
do you understand what I'm saying ///
kay / do each number as you get to it // here's number four // now miss a space here / and number five is here // miss a space// ok / so number six will be here /because you're missing this space / do you understand what I mean ///
do you understand that Charlene ///
pardon ///
yes ///
CHAR thank you // alright/ / number six what is it ///
LAURA I mean five ///
zero / plus -- put the zero right there / good girl ///
LAURA MOVES TO T.
(Oldtown: Transcript #7, Episode #6)

To develop was characterized by the introduction of new ideas to the child, but unlike to transmit was interactive. Teachers expected or elicited some kind of response from the children as illustrated in the following example.

JUDITH Graeme // Graeme //can you please come here ///
GRAEME what ///
JUDITH both of you boys /ok //these are not green shelf toys that you're playing with that I see //and what I hear is you two boys being quite noisy //this is green shelf time and I need to see you sitting with something from the green shelf toys on a table or on the floor /working quietly /I'm busy doing journals right now and when I do that I need to be able know that you can work quietly please //can you do that //what do you think Graeme //what is it that I need you to do ///
GRAEME get green shelf toys ///
JUDITH and --

GRAEME play with them ///
 JUDITH why ///
 GRAEME we / because these stuff are noisy ///
 JUDITH uh huh / and and what am I doing Graeme / can you tell me ///
 GRAEME talking ///
 JUDITH yes I'm talking but what am I doing here with the children / I'm talking to you right now but what should I be doing ///
 GRAEME concentrating and telling the kid what to do ///
 (Middletown: Transcript #1, Episode #14)

To have self-assess was identified as a teacher's intention to have the child identify what they didn't know. An assumption in this strategy was that the identifying of what is unclear would somehow help the child better understand what was expected. In contrast, in the strategy to assess, there was no expected effect on a child's understanding. This strategy is illustrated in the second of the following successive episodes.

GRAEME STARTS TO PLAY WITH HOCKEY EQUIPMENT.
 JUDITH GOES OVER TO TALK TO HIM.
 JUDITH excuse me / what is it that you're doing ///
 GRAEME playing hockey ///
 JUDITH well I think you better go sit on the bench ///
 no you go and sit on the bench with Kevin // thanks ///
 JUDITH SENDS THE CLASS TO THE DIFFERENT STATIONS.
 JUDITH COMES OVER TO THE BENCH TO TALK TO GRAEME AND KEVIN. SHE SPEAKS TO EACH BOY SEPARATELY.
 JUDITH and you are going to miss a turn / why ///
 GRAEME I was playing around and I wasn't supposed to ///
 JUDITH you took a turn and you weren't supposed to // thank you // at least you knew ///
 (Middletown: Transcript #8, Episode #3-4)

Coding - Intent - Knowledge

Alexander, Schallert and Hare's (1991) framework describing

knowledge differentiated among what they called conceptual knowledge, metacognitive knowledge, and construction. Conceptual knowledge was structured into three parts termed discourse knowledge, content knowledge, and word knowledge. Discourse knowledge was knowledge of language and how it is used. Content knowledge was knowledge about one's physical, social, or mental world. Word knowledge was defined as both the labels and the concepts represented by these labels, and so was considered to overlap with both content and discourse knowledge. Metacognitive knowledge was described as knowledge about knowledge. Construction referred to the interaction between prior knowledge or individual knowledge and the state of the surrounding world. As they explained, "in this interface, the learner builds a meaningful framework from existing knowledge that will facilitate the interchange between what is already known and what is to be understood" (p. 331). These three categories of knowledge were used to organize the description of knowledge here. However, no examples of metacognitive knowledge were identified.

Conceptual knowledge - discourse knowledge. Two types of discourse knowledge were identified. The first was text structure knowledge which was defined by Alexander, Schallert and Hare (1991) as the knowledge required to communicate effectively at the word, sentence, or text level. Here this definition was interpreted as including the knowledge required to read and write, as well as to structure language orally beyond a knowledge of words, as

with graphophonemic cues and lexical elements. One type of text structure knowledge was related to story structure as in the following case.

CINDY APPROACHES HOLDING UP HER PAGE. ELIZ
 READS CINDY'S STORY.
 ELIZ I GOT A TREE FOR CHRISTMAS AND I DECORATED
 IT //
 where did you put it ///
 CINDY um / in the corner ///
 ELIZ I'd kinda like to know that if I was reading your story ///
 CINDY IS SMILING. THERE IS EYE CONTACT
 THROUGHOUT THE EXCHANGE.
 (Newtown: Transcript #5, Episode #7)

Another type related to conventions of print as illustrated in this example.

LAURA do you put a period at the end of your name Charlene //
 is it an end of a sentence ///
 (Oldtown: Transcript #6, Episode #24)

Other forms of text structure knowledge related to story genre and components of different types of written work such as date and page numbers.

Alexander, Schallert and Hare (1991) identified two other forms of discourse knowledge. The first was syntactic knowledge, which for purposes of this study was included in text structure knowledge. The other was rhetorical knowledge which they defined as an understanding of how to match text structure knowledge to different audiences. While they explained how such knowledge is portrayed in the use of different written forms, most examples found in this study related to knowledge about conversation, as in the following case.

CINDY APPROACHES SMALL GROUP.
 CINDY can I have a jewels paper///
 ELIZ no///

CINDY I'm done///
 ELIZ bye///
 CINDY I'm colouring my
 ELIZ you didn't listen to me///
 CINDY I'm / all done my
 ELIZ bye
 CINDY models now///
 ELIZ bye///
 goodbye///
 CINDY what do I after I've done them all///
 ELIZ IGNORES CINDY NOW AND SHE LEAVES.
 ELIZABETH GOES BACK TO DISCUSSION WITH THE SMALL
 GROUP.

(Newtown: Transcript #2, Episode #2)

Conceptual knowledge - word knowledge. Alexander, Schallert and Hare (1991) described word knowledge as being knowledge of vocabulary. Here knowledge of phonemic and graphophonemic elements was also included in the definition of word knowledge as in the following example.

BEN HAS BEEN WATCHING ELIZ HELP THE OTHER CHILDREN. SHE STANDS UP AND LOOKS DOWN AT HIS WORK.
 ELIZ now 'a' 'a' 'spa' --
 BEN LOOKS UP AT HER QUICKLY AND THEN STARTS WRITING AGAIN.
 HE LOOKS BACK UP AT HER.
 BEN () an S ///
 ELIZ now / it's not an S sound /it's not an S // it's a different letter///
 HE IS LOOKING UP AT HER. HE WRITES AND THEN LOOK UP AT HER.
 ELIZ now how's the magic letter on the end ///
 HE FINISHES AND LOOKS UP AT HER. SHE IS FOCUSED ON ANOTHER CHILD'S WORK. HE LOOKS BACK DOWN.
 (Newtown: Transcript #11, Episode #6)

Conceptual knowledge - content knowledge. Content knowledge was defined by Alexander Schallert and Hare (1991) as knowledge of one's mental,

social or physical world. Here, several forms of social knowledge were identified. One was knowledge of the roles and responsibility of oneself and of others, as below.

JUDITH Jennifer remember / you're not a teacher / you're just a kid // you're doing your work / they're doing theirs ///
(Middletown: Transcript #6, Episode #17)

Another form of social knowledge identified was knowledge of rules, norms, routines, or procedures of the social group. Sometimes the reference was the broader community, but usually it was the classroom, as in the example below.

JUDITH Joey / you are dropping apple all over my brand new book ///
laughs
go get me a paper towel please / kay ///

JUDITH RETURNS TO READING WITH THE OTHERS.
JOE RETURNS WITH THE PAPER TOWEL.

JUDITH thanks Joey ///

THE BITS OF APPLE ARE CLEANED UP.
JOE STAYS AND WATCHES STILL EATING THE APPLE.

JUDITH Joey / *laughing* you're really worrying me with that apple ///

JUDITH CONTINUES READING WITH OTHERS.

JUDITH go put that in the garbage ///

JOE LEAVES
and your banana peel ///

JOE COMPLIES.

JUDITH CONTINUES READING.
JOE RETURNS AND WATCHES.

JUDITH Joey / I asked you to do something before you did this ///

JOE PUTS IT AWAY.

JUDITH thanks
(Middletown: Transcript #5, Episode #15)

Three forms of physical knowledge were identified. They were knowledge about personal care, knowledge about physical objects, and

conceptual knowledge, such as concepts of size, colour, number, and shape. The only knowledge identified relating to the child's mental world was knowledge about emotions which typically involved teachers attempting to have children recognize and identify their feelings as below.

JUDITH you read that whole book Joe // how do you feel about
 that ///
(Middletown: Transcript #3, Episode #5)

Construction. Initially identified as learning attitudes, this group of descriptors was later categorized under Alexander, Schallert and Hare's (1991) heading. Five different types were identified. One was the willingness to follow instructions or routine. In the example below, Judith is ensuring Joe will follow the routine already underway.

JUDITH HELPS CHILDREN WITH SNACKS AND HAS BRIEF
CONVERSATIONS WITH SOME OF THEM.

JUDITH ok Joe Joey what are you going to do ///
 I'm glad to see that you're getting your . . . your table
 wiped / make sure you *do a good job* // then / what will
 you do///
JOE get a book////
JUDITH how ///
 how will you read///
JOE nicely///
JUDITH what is the other word I'm looking for///
JOE quietly///
JUDITH you got it///

(Middletown: Transcript #3, Episode #2)

Another type was the willingness to be self-directed or to show initiative as shown below in Elizabeth's encouragement and support for

Alex's ideas and initiative.

- ALEX Mrs. E I have a ar I think I have a neat art um art-making thing with these bananas in pajamas ///
- ELIZ what ///
- ALEX we could get some clay which is yellow clay
ELIZ FOCUSES ON HIM & LEANS FORWARD ON THE TABLE.
- ELIZ oh:: that's a wonderful idea // we could make them ///
- ALEX yeh / with clay and then we could put them / cause we could make the () too
- ELIZ for their head do you know what we should do though we should / how do we make the strips ///
- ALEX you just get a piece of blue clay and stretch it out and roll it // HE IS DEMONSTRATING WITH HIS HANDS. so roll it
- ELIZ so we could make them stand about this big /// SHE DEMONSTRATES WITH HER HANDS.
- ALEX and then put place them on a piece of paper then put em up and them make sure they don't fall off ///
- ELIZ that'd be fun // we maybe do that on Monday afternoon ///
- (Newtown: Transcript #9, Episode #15)

Other types were termed persistence, willingness to participate or investigate, and willingness to attempt to solve problems.

Coding - Affect

Affect appeared as linked to intent. Sometimes affect substituted for knowledge and sometimes both were identified. Six types were identified. These were physical feelings, feelings of being liked or being interesting, feelings of being responsible, helpful, important, or worthwhile, feelings of anger, feelings of sadness, and feelings of success. Although explicit

statements were observed, typically, it was expressed implicitly. For example, in the following case, Elizabeth explained that because of her knowledge of Caitlin, she looked for opportunities like this one for the child to feel important or responsible.

ELIZ can you peek your do me a favour // peek your head out
the door and just tell me if those people are all
working ///
ok ///
(Newtown: Transcript #3, Episode #22)

Similarly in the following example, the child's name of William has been modified. The teacher explained that she often used endearments of this kind to show children that she liked them.

LAURA Billiam // how are you doing ///
(Oldtown: Transcript #7, Episode #7)

Coding - Meaning

Meaning was understood as involving all aspects of structural features and features of intent. As well, two properties of meaning were identified. These properties reflected particular combinations of structure and intent. The first property was termed direct-indirect and reflected the explicitness of the teacher's intent in the particular structures used. Both the episodes cited in the previous section were coded as indirect as the teacher did not explicitly state what her intention was about the children's feelings. In both, contextual information is necessary to make the interpretations provided by the teacher. In contrast, meaning was typically coded as direct when teachers were giving instructions.

The second property was termed conventional-idiosyncratic.

Identification of conventionality was a subjective judgement based on the personal experience of the researcher. If the usage was common within this context, it was labelled conventional. If the usage appeared unexpected, unfamiliar, or unique, it was classified as idiosyncratic. An episode could be indirect but conventional if the indirect form was commonly used and understood by the group of speakers. A typical example was when teachers ignored children's attempts to initiate an episode. Whereas no lexical information was provided to the child, ignoring a child was considered a conventional way to provide negative reinforcement related to their knowledge of conversation. One example of idiosyncratic meaning was the following.

PAUL I need the baby bear ///

 JUDITH PREPARES THE STAMP.

JUDITH Mrs. J is going to look like chocolate pudding ///

PAUL yeh ///

JUDITH *laughs* JUDITH HANDS HIM THE BABY BEAR STAMP.

 (Middletown: Transcript #5, Episode # 2)

In the above episode, Judith and Paul were working with brown paint and Judith explained that her comment was intended to show Paul a non-conventional way of viewing adults' roles. Another example was the following in which the teacher was willing to recognize an idiosyncratic quality in the child's work, although the child seemed unwilling to accept that recognition.

CARRIE APPROACHES AND SHOWS ELIZ HER JOURNAL LOOKING UP AT HER.
 CARRIE ()
 ELIZ IS READING AND SHE LOOKS AT HER.
 ELIZ you know what you did ///
 ELIZ HANDS HER BOOK BACK TO HER AND CARRIE STARTS TO LEAVE. ELIZ WATCHES HER GO.
 you did everything backwards ///
 go get a mirror / go into the bathroom / and take that //
 go look at in the mirror // take your book in the bathroom ///
 that's amazing ///
 CARRIE SITS DOWN
 no / do it ///
 you don't want to ///
 ELIZ WALKS OVER TO HER AND CROUCHES DOWN TO LOOK AT IT AGAIN. THEY BOTH LOOK AT THE BOOK.
 ELIZ how did you do that ///
 CARRIE ()
 ELIZ I don't think I could do that // let's see ///
 CARRIE I had it upside down ///
 ELIZ oh you had it upside down // you did it upside down ///
 CARRIE () I did ///
 ELIZ wow:: // that's hard to do ///
 (Newtown: Transcript #11, Episode #8)

A Network for Dyadic Classroom Discourse

The features of structure and intent as described in previous sections were organized into a network (Bliss, Monk, and Ogburn, 1983). In this approach, a phenomenon is described in terms of its constituent parts and their relationships, which could be of three kinds. Categories could be co-occurring, mutually exclusive, or repeated choices. One other type of relationship was identified here. It was an optional category choice in which any, all, or none of the descriptors could be selected.

The network in its final form is provided in Figure 8 (see map pocket). It illustrates the features of dyadic classroom discourse that can be found in any single episode as identified in this study. A crucial feature was the recursiveness of choices indicating that episodes of dyadic discourse often had multiple codes for the same feature. Here no way of assigning these multiple codes to different parts of the episode was attempted. As well, no attempt was made to indicate how different features interact or correlate.

Adapting the Methods for Classroom-Based Use

The third research question asked what suggestions could be made for adapting the methods developed in questions one and two for classroom-based use, which was understood to include both pre-service and in-service teachers. Suggestions were compiled from teachers' comments throughout and following the study and from the post-study interviews. The interviews were based on the questions in Appendix L with additions relating to ethical considerations, the teachers' roles and contributions to the study, and details about recording and describing methods. These comments were used first to assess the value of the methods developed, and second to consider what adaptations might be made to the methods to make them usable by teachers.

Assessing the Value of the Methods

The teachers made numerous comments about the value of the methods used in the study. They commented on the value for both pre-service and in-service teachers.

The values for in-service teachers. Some comments addressed the value of the research processes generally. For example, when Judith was asked if the study had any negative impact on her and her class, she replied:

Absolutely not. I have all kinds of things to say about how it helped me to be reflective, how it helped me to look at children. It was very positive for me and because it was positive for me it would be positive for the children.

She added: "doing a project like this really highlights the complexity of teaching and the many facets of classroom life." Elizabeth commented that "what we were talking about was so vital to teaching and it released the richness and depth . . . in the transcripts." Elizabeth decided to use selected aspects of the approach for her own M.A. thesis research and she purchased the same audiorecording equipment. Judith stated that "I am absolutely convinced that we need this kind of a tape recorder [the audiorecorder] in a school", an opinion shared with Laura.

The teachers also commented on specific ways that the methods were valuable. They especially emphasized the value of the transcript discussions for purposes of reflection upon their teaching. The research process required that they set aside time to examine and reflect upon an artifact from their teaching, the transcripts. The lack of time for this process in the usual

teaching schedule was altered due to participation in the project. As Laura stated emphatically when asked if the study had been valuable: " Oh yes because I haven't made the time for reflection It was excellent for me . . . personally and professionally."

Of particular note was the opportunity for collaboration with another professional. As Elizabeth explained, opportunities for gaining the viewpoint of another professional are rare in teaching. She observed that three different levels of understanding were evidenced through the study. On-line understanding was that experienced by the teacher in real time interaction in the classroom. The reading of a transcript added a second level of understanding, and the discussion of the transcript provided a third level with the collaborative talk making it particularly useful. Similarly, Laura explained:

You were doing one job and I was doing another and then we are looking at it together and reflecting and reflecting and looking and talking and it comes outThe richness that you get more so than self-reflection. Reflection together in partners.

A second specific value related to observation in classrooms. Elizabeth stated that the three levels of understanding made clear the limitations of standard observational processes. Similarly, Judith observed that only when she saw the transcribed interaction with Jennifer did she see evidence of the child's competence that she had not noticed in her daily observations, not even listening to the tape. More generally, Judith stated that the process "helped me to focus and to look at kids in a very specific way."

A closely related feature was the value of the recorded interaction for purposes of reporting and discussion with parents or other professionals, such as the next year's teacher, the speech therapist, or the principal. For example, Judith explained how she could use the transcripts to help her convince Jennifer's mother about Jennifer's competence, a judgement that the mother had been resisting. She said " I was able to say to her mother I have just looked at a transcript of exactly what your child has said and I'm amazed at really how well she does." Judith went on to say that she often made statements about a child, for example when report writing, and then wondered where the supporting evidence was, but that transcripts of this kind provide that kind of evidence. She also noted how much could be recreated from memory when reading a transcript that would likely be lost otherwise. Finally, Judith suggested the potential value of transcripts or recordings as a basis for discussions where a teacher is seeking insight into a child. She argued that the demonstration was crucial in such circumstances explaining how she might say, "I have a funny feeling about this kid . . . these're the kinds of things I see or hear."

Another specific type of reference made by the teachers was to the kind and quality of information about the language used as found in the transcripts. They all remarked on what they had learned about classroom discourse. Laura stated that the transcripts were "absolutely fascinating and so rich in information." She also commented that "I always used to think that

the communication process was basically fairly simple but now I've learned how complex it is. . . . It was a major eye-opener. . . . It was very rich in the learning process. She added that teachers don't know what they are doing when communicating in the classroom and that "good teachers don't know why they are good." Judith noted that her discussions with student teachers in the past had involved many aspects of the discussions in the study, but she now could see how to ground such discussions in explicit observations, such as the connection between a child's pattern of interruption and the teacher's pattern of managing episodes.

All three teachers observed aspects of their language with children that disturbed them. For example Judith noted that "You really see the interruptionsIt just goes on and on. It's amazing how many interactions you do have." At a later date, she observed: "It worries me. It looks so choppy. . . . I'm constantly carrying different conversations. . . .I wonder if that's a good thing." Similarly, Elizabeth observed about one of her transcripts: "But talk about incomplete. It's just so funny to see it written down." Laura also made a rather dubious discovery. She observed that her interactions with needier children were more complex than with more competent children as she tried to respond to the more complex needs of the former, and as she said, "Yeh well I'm trying to cover [a lot of ground] but maybe that's not always good."

The values for pre-service teachers. The three teachers all remarked

on the value of the recording and discussion methods for use with and by student teachers. As Elizabeth remarked, "wouldn't it be wonderful to plug student teachers in . . . and the discussion coming out of it." Judith stated, "I would recommend to any student teacher that when they're teaching a lesson to have one of these things [the audiorecorder] and go home and listen to what you said and listen to what the kids said." Judith was also convinced of the value of being able to discuss such recordings with student teachers. Similarly Laura said that she now discussed student teachers' interactions with children, something she hadn't done in the past because her knowledge in this area had been implicit and she couldn't articulate it.

Elizabeth commented that basic to the teaching process is the relationship with children, which is mediated through the interaction structures and strategies, but that when students start they have to deal with so many complex aspects of the teaching process that it might be difficult to focus on these communication processes. She suggested that perhaps student teachers should have the opportunity to concentrate on their interaction with children before beginning their formal teaching practica, or that teaching practica should be differently organized to accommodate this kind of learning.

Suggestions for Use by Teachers

All three teachers advocated the use of some form of the research processes by other teachers and student teachers. However, the complete

research protocol was recognized as not being viable under most circumstances. As Laura said, "I would like to . . .but realistically . . .but if someone like yourself came along I'd jump on it." Judith stated that use of these methods was tenable but that it must be highly selective.

They also remarked on the possible reluctance of other teachers to try these methods, given their labour intensiveness. Elizabeth noted that unless teachers were interested in language they might not consider the process worthwhile, but at the same time, they would not know what it was they would learn. Judith suggested that teachers could be encouraged to just take the first step and to not think that they had to carry out the complete process.

Suggestions for recording. Familiarity with use of equipment was not considered a problem by any of the three teachers. They all agreed that audiotaping was probably the more adaptive technique, at least to explore the process initially. It was less likely to be intimidating, was very practical in terms of equipment and ease of use, required no additional support for taping, and the audiotapes could be easily replayed. It was suggested that if teachers focused on only two or three children in a recording session there would be no problems with identifying their voices. They agreed that they found that most problems in identifying children and their language could be overridden by some combination of context and memory, and it was suggested that the problem of identification of speakers, solved in the study through the field observation record, could be solved by learning to dub

children's names on to the tape.

Judith's comments suggested that the type of recording should be related to the purpose of the teacher. She noted that videorecording would be a good choice "if you want to demonstrate learning to parents." She noted that in videotaping the focus is on the classroom and the bigger picture, but in audiotaping the focus is more on an individual child. Laura suggested that it would very useful to videotape for purposes of discussions with children about their attitudes and feelings. Elizabeth noted how videotaping could provide information about what a teacher might be filtering out in the busy context of a classroom. However, Judith stated that "what you get from just listening to an audiotape is a huge step," and generally audiotaping would be more adaptable for teachers. For example, she noted that you can put tapes in the car deck on the way home. Judith suggested several uses of audiotaping methods. She said that it would make "an absolutely wonderful evaluation tool with a child just bending over and saying what have you done here." She added that the teacher would have to remember to use the child's name.

Two other uses for audiotaping suggested by Judith involved teaching the children how to use the taperecorder. One application might be when they were working in a small group so as she and the children could later go back and listen to how the group was doing. A second application was when a child wanted to read to her and there wasn't time but she could listen to the tape later.

An obvious problem with audiotaping would be the loss of nonvocal information. The researcher suggested that it might be possible where teachers are recording selectively to step back after an episode and dub this information onto the tape in the same way she had done at times throughout the research process.

Suggestions for transcribing. Although the taping process was not regarded as a problem, the process of transcription was seen as too laborious by all three teachers. As Judith said: "I think it has huge merit. I loved it going through it with you . . .but I'm not sure if I could be disciplined enough and have the time to do that." Again, it was suggested that it would need to be guided by a clear purpose. It was thought that taping and listening or viewing repeatedly would be both informative and feasible. Judith suggested the possibility of transcribing only selected episodes such as with one child, or in particular classroom contexts. She further suggested that selecting episodes with a child, from one tape, only twice a year would provide a rich source of information. As a substitution for transcribing, she said that teachers could listen to the taperecordings with other assessment tools, for example class lists, and check for specific features of children's interaction, such as amount and quality of participation.

Suggestions for coding and discussion. In the coding process, the researcher observed that the teachers had tended to read transcripts like a story, often needing her direction to stop, analyze, and code them

systematically episode by episode. She suggested to the teachers that the templates developed in the study, or a variation of them, could be used from the outset to help teachers focus their observations and coding, a point agreed upon by all three teachers. Several other suggestions would be relevant if transcripts or recordings were to be discussed. Laura remarked on the problems of discussions held in staffrooms and schools in general, with interference from phones, conversations, and interruptions, and Elizabeth noted similar problems. Elizabeth suggested that designating a specific time for discussion would be most desirable, as would presumably a location free from interference.

Summary of the Chapter

In this chapter, the results of the study were described. In the first part, the process of accounting for the inductive research procedures used to address the first two research questions was described. This accounting process summarized the modifications made to the preliminary procedures by reference to the research criteria. The results were understood as the final set of modifications to methods for recording and describing dyadic classroom discourse. In the second part of the chapter, the results for each of these questions were described. Finally, to address the third research question, the teachers' comments on the value of different aspects of the methods

developed, and their suggestions for adapting them for classroom-based use were summarized.

CHAPTER FIVE

SUMMARY, DISCUSSION, AND IMPLICATIONS

In this chapter the background, design, and results of the study are summarized. Next, the results of the study are discussed and their limitations. Finally, implications of the work and possibilities for future research based on the study are reviewed.

Summary of the Study

This study was an exploration of methods of recording and describing dyadic classroom discourse. Dyadic classroom discourse was defined as the discourse between the teacher and one child in naturally occurring contexts. Previous research in classroom discourse had focused mostly on large and small group interactive exchanges, and dyadic interaction was not well represented in the literature. This form of discourse typically involves constantly shifting locations and orientations of participants amid a high level of classroom activity. The first two purposes of the study were (a) to develop methods to record this form of classroom interaction, (b) to develop methods to describe it. Methods were understood to include techniques for recording and describing dyadic classroom discourse which were audiorecording, videorecording, observational recording, coding and transcription. Methods also included the concepts and conceptual

frameworks necessary to describe this form of discourse and these were a prominent feature of the study. A third purpose of the study was to suggest ways that methods developed in questions one and two could be adapted for classroom-based use such as observation and reflective practice.

A number of parameters defined the research problem. A major parameter was the use of a broadly-described concept of language as the theoretical reference for the work. Others were a focus on young children, ethical considerations, and the applicability of the work to the teachers' classroom practice. As well, the study design needed to be exploratory, and in turn, account for the range of contexts in which dyadic classroom discourse occurs. Finally, it was expected that the data in this study would be qualitative.

Background to the Study

Little in the theoretical literature related to techniques for recording and describing dyadic classroom discourse, but it did contribute to the conceptualizing of it. The background to this study consisted of two parts. First were studies of features of discourse that had been identified in large and small group interaction in classrooms. These features formed a preliminary concept of dyadic classroom discourse. Second, in response to the criteria for a broadly-described concept of language, a working view of language was developed as a reference for the work.

Features of Discourse from Previous Studies of Classroom Discourse

Previous studies of classroom discourse described language along dimensions of structure and function. Turn taking patterns such as Mehan's (1979) study of the IRE pattern in large group events have been some of the most frequently studied structures. As well, topic structure, the definition of the basic unit, and what Gumperz (1982) referred to as contextualization cues have all been structures addressed in studies of classroom discourse. The broader literature on discourse was used to examine these four types of structures in more detail.

There have been two major approaches to function in classroom discourse. One has used schemes of language functions such as Halliday's (1975) or Tough's (1976). In the other, the schemes of speech acts developed by Austin (1962) and Searle (1979) have been adopted and sometimes revised. However, a number of problems with both approaches have been identified.

The Working View of Language.

Rather than a structural/functional perspective, the working view of language took a developmental perspective which incorporated features of structure and function. It also considered affect and meaning. A cognitive-interactionist perspective, sometimes known as constructivism, and a social-interactionist perspective were reviewed. These were considered to be complementary rather than contradictory perspectives, and an integrated

cognitive-linguistic-social interactionist perspective was hypothesized.

Fundamental to this perspective were inherent cognitive processes motivating individuals to both make sense of their surrounding world and to influence it. Context, understood to include both the physical and social-communicative world, played a key role in providing information that might conflict with the individual's current views, and so demand a reconceptualizing of these views. Through this process, meaning was seen as negotiated between individual meaning and contextual meaning. The nature of language was seen as shaping and being shaped by this interaction.

The role of affect was seen to be acknowledged widely (e.g., Goffman, 1988; McCann & Higgins, 1990), yet with little insight into how it is structured, and how it interacts with language. Meaning was considered to consist of all features of the interactive process described above. As well, it was hypothesized that meaning includes two relationships among these different features. One relationship referred to the negotiation between individual and contextual meaning suggesting that there is shared and unshared meaning in any event, a quality likened to what Grice (1989) termed conventionality. The second relationship was between structural and functional features of language, and the potential for structures to reflect function in any given event to varying degrees, sometimes necessitating reference to contextual features for interpretation of the meaning. This quality was likened to what Grice termed dictiveness.

Design, Methodology and Results

Study Design

The design of the study was grounded in the parameters of the research problem. The naturalistic paradigm described by Guba and Lincoln (1982) matched the research parameters and was used as a theoretical framework for developing the study. The study was defined as an exploratory and inductive inquiry in which procedures are not preordained but emerge in response to the collection and analysis of data. The grounded theory approach described by Strauss and Corbin (1990), and the networks analysis approach of Bliss, Monk, and Ogburn (1983) were selected to help develop the methodology of the study.

Methodology

Methodology in an inductive inquiry involves repeated cycles of sampling, data collection, and data analysis. Here, the study design was grounded in a set of research criteria assembled from the research parameters, other methodological criteria for this kind of study, and from other sources identified in the study design. These criteria were used to construct a set of preliminary procedures to initiate the inquiry process, and to guide the modifications of these procedures throughout the study. Embedded within these procedures were the preliminary methods for recording and describing dyadic classroom discourse. As each cycle provided new observations about

the methods, modifications were made to them. The inquiry process was considered complete when a new cycle provided no new observations requiring further modifications.

To address the third purpose of suggesting ways to adapt methods for classroom-based use, comments were collected throughout the study and post-study interviews with the teachers were held. From these notes, suggestions for adapting methods were made.

The classrooms in the study were in three different schools in the same school district. As required by the study design, they represented considerable variation in composition. They varied in community composition, school atmosphere, and the experience and training of the teachers, as well as representing the full range of the primary division. Recording sessions represented the range of activities in each classroom, but only the teacher's dyadic discourse with six focus children was transcribed.

Results

There were varying degrees of modification of the preliminary forms. Results were understood as any unmodified preliminary forms and final modifications on the remainder.

Methods for recording dyadic classroom discourse. The audiorecording methods employed a battery operated walkman type cassette recorder worn by the teacher with an attachable stereo mike. Audiorecording required an

accompanying observational record. Problems with this technique were never satisfactorily resolved. They involved the necessary distancing of the researcher to make notes, and the uneven quality of the observational record.

Videorecording methods employed a battery operated camcorder controlled by the researcher and an accompanying audiorecording using the same techniques as above, but excluding the observational record. Details of the videorecording methods included positioning of the camera in the room and the integration of the researcher into classroom activity while recording. Videorecording was considered less intrusive than audiorecording, and provided a more accurate and complete record.

Methods for describing dyadic classroom discourse. Methods for describing classroom discourse were transcription and coding. Transcription involved repeated rewinding and relistening to the tapes. A technique for transcribing from the combined audio and video recordings was developed. The primary technique developed for coding involved the combined use of theoretical sensitivity and tacit knowledge in the coding process. Transcription involved conceptualizing of contextual and structural features. Structures were the unit of discourse, called an episode, turn taking patterns, onset and termination patterns, topic structure, location, and verbal, nonverbal, and nonvocal elements. Transcription conventions were developed for all features.

Coding involved the conceptualization of features of intent, affect and

meaning. Each coding of intent involved coding for both strategy and knowledge and/or affect. Strategy was understood as teaching tactics defined in terms of their effects on children's learning. Twenty three strategies organized into six categories were identified ranging from those identified as no immediate effect intended for the child to those in which the teacher attempted to intervene directly with the child's understanding.

Two categories of knowledge were identified with a total of five types. The only aspect of affect that was developed in the study was its role in intent. Six types of affect were distinguished. For each instance of intent, meaning was coded for conventionality and dictiveness.

The features of structure, intent, affect, and meaning were organized into a network following the networks analysis approach. This network illustrated the possible features for any episode.

Adapting methods for classroom-based use. Suggestions for adapting the above methods were similar for all three teachers. They all agreed on the significance of this kind of observation for practising teachers. They recommended that recordings be used as an artifact to support a reflective discussion between or among teachers on a regular basis. Although they all agreed that videorecording provided valuable information, they also agreed that a modified audiorecording method was the more viable approach for classroom-based use. They also agreed that a template based on the networks would be very useful as an observational guide for teachers.

Discussion of Results

The results of the first two research questions study are discussed here. Given the limited results of the third question, it is not discussed further, but its results are considered in the implications of the study. The points discussed here all emerged out of examination of the results as presented in the previous chapter. Except perhaps tacitly, they did not contribute to the inductive process. However, they draw on observations entered into the research notebook throughout the study and teachers' comments in the post-study interviews.

The Viability of Methods for Recording and Describing

Dyadic Classroom Discourse

Despite the active and often noisy context of dyadic classroom discourse, audio and video recording methods judged to be potentially viable were developed. As well, viable methods for transcribing and coding the features of the recorded dyadic discourse were developed. These methods needed to recreate as accurately and completely as possible the conceptual structure of dyadic classroom discourse. However, methods also needed to be practical and meet certain ethical considerations. The viability of the methods developed here is discussed below in terms of these factors.

Accuracy and Completeness of Recording Methods

Both audio and videorecording methods provided recordings from which reasonably complete and accurate transcriptions could be made. The quality of both types of recordings was supported by the fact that the transcriptions made from either supported discussion of the transcribed events. Also, teachers stated that they had not noticed differences in the transcripts according to the type of recording. This may have been due to their ability to recreate the context allowing them to fill in missing details from audiorecorded sessions. One visible indication of the accuracy of the recordings was the few occurrences of unintelligible content in the transcripts. However, the making of the observational record affected the completeness of the audiorecording, and the quality of the audiorecording was seen as partially dependent on the quality of this record. In contrast, videorecording provided a more reliably complete record.

The Ethical Tenability of Recording Methods

A major concern when recording in naturally occurring contexts is the possibility of intruding on the activity of participants with adverse effects. It had been expected that teachers, in particular, might become resentful of the research process, especially as the schedule lengthened, or when they were coping with increased stress, such as at Christmas. However, no indications of such problems appeared, even when one teacher was coping with severe

personal and professional concerns. One even commented that she had looked forward to the recording sessions.

The viability of the methods developed here may have been partly due to the type of recording equipment. Both the walkman worn by the teachers and the camcorder used by the researcher were small, portable, and likely familiar pieces of equipment to both children and teachers. They were not cumbersome or obtrusive and included no heavy cords, tripods or other attachments as might come with recording equipment. Another factor that the teachers cited was the role of the researcher. As one teacher put it, she fitted into the routines of the teacher and the children, and when done recording "just rolled up her shirtsleeves and helped out". Another commented that she never felt judgement was being passed on her or the children, and that there was mutual respect between researcher and teacher.

The Intrusiveness of Audio Versus Video Recording

At the outset, it was assumed that videorecording would be more intrusive than audiorecording, but this distinction was not upheld. Although teachers agreed that videorecording seemed more disturbing, they all became quite accustomed to it, as did the children. One factor might have been previous experiences of these teachers. All were experienced teachers and comfortable with their own practice, and all had previous experiences being observed and videotaped. Another factor, suggested by the teachers'

comments, may have been aspects of the method developed here, such as the camera being located at a distance, a technique made possible by use of the zoom lens. Another possible factor appeared to be the role of the researcher in using the different techniques. Although the technique for audiorecording using the walkman recorder was considered easy and unobtrusive by the teachers, it also necessitated the researcher making the observational record. In this role, she could not interact in even a minimal way with ongoing classroom activity. In contrast, the videorecording method allowed her to blend into classroom activity without compromising the quality of recording. As one teacher put it, when taking notes, her role was that of an observer, but when videorecording it was that of a participant.

Practicality and Authenticity of Transcription

As Edwards (1993) noted, the method of transcription needs to enable the researcher to focus on the events of the interaction with a minimum of distraction. Here this logistical criterion applied not just to the researcher, but also to the teachers. As well, the transcripts needed to record the information in as accurate a manner as possible. The transcription method developed here met both these criteria.

However, both the readability and accuracy of the transcripts may have been dependent on particular aspects of the study design. It seems likely that reading a transcript is facilitated when it is one's own experiences that are

transcribed. On the other hand, it also seems likely that if the reading and the memory of those experiences had not concurred, questions might have been raised, and reading would not have proceeded as easily as it did.

A factor that may have contributed to the readability of the transcripts was the gradual introduction of transcript conventions as they were developed. The early transcripts were simpler than later ones, perhaps allowing teachers to gradually develop reading fluency of them.

The exclusion of intonation from the transcription of nonverbal features was unique to the conditions of this study. If teachers had not been so adept at repeating the intonation patterns as they appeared on the recordings, it would have been necessary to find a way to transcribe this structure. However, the use of an intonation curve would probably not have been practical. Given the significance of intonation in discourse, this problem would need to be resolved if transcripts were to be used by parties who had not been present.

Practicality and Authenticity of Coding

Most of the research protocol surrounding coding involved the inductive inquiry processes of the study. Only one coding technique, the combined use of theoretical sensitivity and tacit knowledge was identified, and with little elaboration, which might suggest that coding is a relatively simple process. However, this is likely misleading. Coding was never the transparent process that had been assumed at the outset where it was thought

the researcher and the teachers could consider each episode and assign a single code for each of intent, affect, and meaning. Although this approach had been recommended elsewhere, such as in Pinnell's (1985) discussion of analyzing language functions in classrooms, the first attempts to do this were instantly abandoned as it seemed that too much of the episode was untouched by this technique. The subsequent integration of theoretical sensitivity and tacit knowledge into coding provided the depth seen as necessary to interpret the classroom exchanges, but also made coding more complex and uncertain. Towards the end of the study, coding did become easier. Use of the templates, the experience of the teachers and the researcher with the process, as well as the increasingly clearer set of codes all likely facilitated it. One factor that tempered the difficulty of coding was the possibility of assigning multiple codes for intent, knowledge and/or affect, and meaning to a single episode.

In summary, within the parameters of this study, audiorecording and videorecording were both considered potentially viable methods of recording dyadic discourse in primary grade classrooms. However, the quality of the audiorecordings was affected by the quality of the observational record, in contrast to videorecording which reliably provided a more complete record. At the same time, videorecording was considered less intrusive than audiorecording. The transcription techniques developed here provided

transcripts that were readable and also considered to recreate the recorded events accurately enough to support insightful and reflective discussion. However, they might be less adequate where transcripts are to be read by someone who has not participated or observed in the transcribed activities. The coding technique integrating theoretical sensitivity and tacit knowledge was seen as providing much insight into the process, but also as demanding and ambiguous.

Developing the Conceptual Structure of Dyadic Classroom Discourse

A major aspect of the study was the attempt to develop the conceptual structure of dyadic classroom discourse. Given the broadly-described concept of language underlying the study, it was explored along dimensions of context, structure, intent, affect and meaning. However, for various reasons, some aspects of these dimensions were developed more extensively than others. The conceptual structure that emerged is discussed below with consideration of the scope and limitations of the development of its different features.

Contextual Features

The transcription of context was limited to immediate details that had occurred within the recording session or immediately preceding it. Given the role of context in the working view of language, this depicting of context

seems very limited, and alone would not likely have been judged adequate for the coding of episodes. However, the discussions with teachers included large amounts of time devoted to contextual factors precluding the need for extensive transcription of complex contextual features. At the same time, the role these features played in the discussions illustrated the inextricable role that context plays in interpreting discourse.

Structural Features

Defining units. The basic unit of discourse in the study was the episode which was composed of single or successive turns of teacher and child. Turns were composed of sentence-like and phrase-like segments. The initial choice of the basic unit was guided by the criterion that it be the smallest piece of information that can be examined independently and was defined as a self-contained interactive exchange between a teacher and one child. In other words, episodes were initially defined by their internal structure. However, consideration of the nine forms of episodes differentiated in the study showed that they were also distinguished by their relationship with other episodes.

Instead of being definitive of an episode, independence was seen as one variation on a more general quality, the interrelationship between or among episodes. This observation conflicted with the notion of defining a unit as self-contained as Gumperz (1986) argued, or as a complete communicative

event as stated by Van Dijk (1990). Instead, the definition of a unit here resembled Schegloff's (1984) argument that units should be defined by their relationship to the larger structure. Similarly, Schiffrin (1994) argued that it has been difficult to define units of discourse in the mutually exclusive manner of constituents of sentences. This quality of interrelatedness may apply to units of discourse more generally, but not always be as readily apparent as in the swift succession of episodes of dyadic classroom discourse.

A similar quality had been part of the original definitions of segments of turns and was extended here. Turns and segments of turns were partially defined by internal structures, and partially in relationship to one another. For example, the pause at the end of a turn was defined as longer than at the end of a sentence-like segment, which was longer than at the end of a phrase-like segment.

Another quality defining units of discourse here characterized episodes, turn taking patterns, and onset and termination patterns. For each of these structures, a basic or typical type and variations on this type were identified. This seems similar to the concept of marked and unmarked forms found in studies of linguistic structures more generally. Some of the variant patterns may represent miscuing, or lack of knowledge of how to carry out the basic form by children, and the range of structures represented here may be peculiar to dyadic classroom discourse with young children. However, at least some variant forms, such as overlapping episodes, cloze type segments,

and asides as turn taking patterns, were seen to be constructed by teachers.

Management of turns. The types of turns identified here showed evidence of both types of management systems described in Chapter Two. Signalling systems were intrinsic to all turns, as well as to segments of turns. However, the identification of scripted turn patterns as a variant form indicated that only some turns were characterized by a ritualized quality. To some degree, the non-scripted quality of other turns may reflect this particular age group. Not only may young children still be learning the rules governing conversation generally, but they may also still be learning conventions of classroom discourse. However, it is also possible that dyadic classroom discourse is relatively non-scripted.

Topic structure. The initiation of the topic with the whole group of children followed by the individual episodes referring back to it added to the sense of interdependence of episodes. However, in contrast to the complexity of topic structure in other studies of discourse, such as the multiple levels of topic structure described by Norris and Hoffman (1993), its structure here seemed very simple.

Various factors may have constrained development of topic structure. One factor may have been that in all three classes, activity was almost exclusively teacher controlled with all children doing one of several predefined activities at the same time, albeit in different places, positions, and groupings, and working with more and less proficiency. The topic was

predefined, and the expectation was that children stay focused on it. A related constraint may have been the brevity of episodes. Teachers were limited in the amount of time they could spend with an individual child. Two interconnecting factors could have enforced this time limit. One was the teacher-child ratio. The other was that the activity or topic was generally planned to span a limited time period, typically about 45 minutes. Teachers likely felt an obligation to check with most, if not all children in this time period, limiting the time that could be spent with each child. The limitations on topic structure seen here might not be seen in other settings where time and activities are differently organized.

Finally, Silliman and Wilkinson (1991) discussed the complexities of manipulating the topic in classroom conversation. The children here may have lacked adequate knowledge of the complexities of topic manipulation to support extensive variation within a single episode.

Location. Although its status as a structure of discourse might be questionable, location was included here. The notion of a physical frame for a turn or episode had not been previously considered, perhaps because it is typically assumed to remain stable throughout a given unit of discourse, and so goes unnoticed. However, episodes were observed where the physical frame changed, such as when the teacher and child shifted locations within an episode. As for units of discourse, location also exhibited a typical-variant form. The variant forms added to the sense that dyadic episodes are not

somehow independent or private, but an inextricable part of an intricate and complex interaction structure in classrooms.

Verbal, nonverbal, nonvocal elements and contextualization cues. No attempt was made at the outset to identify contextualization cues. Instead, it was considered that examination of the verbal, nonverbal, and nonvocal elements comprising them might suggest the presence of contextualization cues particular to dyadic classroom discourse.

Perhaps the most obvious of such cues was the cloze type segment. This cue is very familiar in classrooms where teachers use it to attempt to elicit a particular response by providing the lead in to it. Language about language including spelling, reading, naming letters, and pronunciation of phonemes for letters. These cues are also typical of discourse in classrooms and may serve a contextualization purpose, for example, reminding children of their task. Phonemic variations such as extended vowels and consonants may serve similar purposes. Variations in terms of address by teachers may function to remind children of their roles in relation to the teacher, such as more informal and affectionate forms than normally used. Some of the nonvocal elements identified may also serve contextualization purposes. For example, movements such as tapping of fingers on a page likely serve to refocus a child's attention.

A number of these elements may be generic to conversation in various settings, and both teachers and children may simply transfer the use and

significance of these cues to classroom discourse. However, there may also be subtle forms of these elements that are more distinctive of the classroom. For example, proximity which was differentiated into four forms, may be more particular in its usage in classrooms than in conversation more generally. A number of these elements as well as being school-related are particularly likely to typify primary trained teachers and/or primary level children, and might not be used, or not with the same significance, with other age groups.

Features of Intent

The notion of intent, as constructed here, differed in several ways from its depiction in the literature on language function and speech acts. First, intent was found to consist of strategy and knowledge, strategy and affect, or strategy, knowledge and affect. Unlike the triad of social, expressive and representational functions often used to code language function, in the scheme here, each instance of intent involved a social or interactive function and a representational one, and sometimes an affective one. In other words, rather than making mutually exclusive choices among social, expressive, and representational options, intent was defined as simultaneous choices from all three categories.

Secondly, a single episode could be defined by one or more of the strategy-knowledge and/or affect linkages. This multifunctionality of episodes was supported by the criticisms of single function schemes as

described in Chapter Two. Similarly, the inextricable quality of these functions within a given episode resembled the embeddedness of functions described by Ervin-Tripp (1982). Finally, as described below, the description of both strategies and knowledge had some distinctive qualities.

The major property of strategies. Early in the study, a property was identified that organized the emerging strategies into categories. This property differentiated the categories of strategies according to teaching tactics in terms of their effects on a child's learning.

This property was defined not by the teacher's activity, but by the intended effect of her activity on a child's learning, and resembled what might be thought of as a definitive feature of teaching. The Concise Oxford Dictionary (Fowler & Fowler, 1982) defines teaching as enabling or inducing a person to do something through instruction or training. In the schemes of language function and speech acts reviewed in Chapter Two, this property is not apparent, perhaps not surprisingly, as none of these were developed to describe the language of teachers and children. However, it also appears absent from discussions of classroom discourse more generally. The description of this property here may have emerged from the study's focus on the language between teachers and children, rather than the language of teachers or the language of children.

This property provided the major distinction among strategies. However, after identifying this property, it could be seen that four minor

properties had served to make finer distinctions among the strategies in the different categories. These minor properties are discussed below.

Levels of interactivity. One property observed to help define strategies could be called the level of interactivity. The various forms of this property can be seen as a continuum, as shown in Figure 15. At one end, are strategies where the teacher's intent is not visibly linked to a current activity of the child, and also does not require any response from the child. Further along the continuum, the teacher's intent is seen to relate to the child's activity and also to become increasingly interactive. At the other end of the continuum, the teacher engages with an ongoing activity of the child following with a sequence of interactions focused on realizing the child's intent. Only this last point on this continuum was considered to provide the interactive frame necessary for a negotiation of meaning between teacher and child.

In the schemes of language function and speech acts described in Chapter Two, intent always originated in the speaker, even when it was defined as interactive such as in Halliday's (1975) interactional function. In these schemes, there were no examples of intent originating in the ongoing activity of the other party. Also, only a few, such as Halliday's regulatory function or Searle's (1979) directive speech act included a role for the other participant. In contrast, of the six forms of interactivity distinguished here, only two did not originate in the child's activity, and only one excluded a role for the child.

Figure 15. Levels of interactivity for each of the categories of strategies are shown. Level I is initiated by the teacher but does not refer to an ongoing activity of the child and involves no active response by the child. Level II is initiated by the teacher and involves a single response by the child. Level III is initiated by the child with a single response by the teacher. Level IV originates in an activity of the child and involves the teacher's response to it. Level V is like Level IV but also involves a subsequent response by the child. Level VI is like Levels IV and V but involves an ongoing succession of turns by teacher and child.

Levels of Interactivity Across Categories

	No Immediate Effect	To Initiate	To Obtain Information	Child's Current Activity	Child's Next Activity	Child's Understanding
I				solve		transmit have observe
II		initiate	query assess		directed chosen	self assess
III	N/A			resolve		
IV				reinforce reinforce- negative		
V				stop redirect	pre- vented per- mitted	
VI				facilitate sustain		strengthen develop

A given-new distinction. Another minor property was seen as similar to the given-new distinction found in studies of certain linguistic features. Given refers to information that the other participant already knows, and new to information not previously known (Ochs & Schieffelin, 1983). For example, here, in the category Child's Understanding, the strategies to strengthen and to have self-assess were defined as referring to information that the teacher expected to be known by the child. In contrast, to have observe and to develop were defined as referring to new information for the child. Similarly, in the category To Obtain Information, the distinction between to assess and to query was whether the information to be obtained was known or unknown, this time by the teacher. As illustrated in Figure 16, the property of given-new could not be applied to the categories of No Immediate Effect or Interaction. However, all strategies in the other categories could be defined as either given or new, with the exception of redirect which was defined as moving from given information to new information. Also, many episodes were composed of several strategies which together could provide both given and new features.

In most, if not all of the schemes of language functions and speech acts described in Chapter Two, the reference to knowledge, although implicit, seemed to be to new knowledge for the other participant. In contrast, here, only five of the nineteen strategies were defined as referring to new information. This imbalance may reflect the fact that in the dyadic classroom

Figure 16. The differentiation of strategies across categories according to the given-new property.

The Given-New Distinction Across Categories

	No Immediate Effect	To Initiate	To Obtain Information	Child's Current Activity	Child's Next Activity	Child's Understanding
Given	N/A	N/A	query assess	reinforce reinforce- negative stop sustain facilitate solve resolve redirect	pre- vented permitted	strengthen self assess
New				redirect	directed chosen	transmit develop have observe

discourse observed here the topic had typically been introduced earlier. In the dyadic episodes, the teacher was frequently rerunning earlier instructions, information, or expectations.

Choice and adaptiveness. Two other properties helped differentiate several strategies. These were a degree of choice, and adapting of the level of difficulty of the child's activity. Choice differentiated the subforms of query into demands and requests. It also differentiated between to be directed and to be chosen. Adapting an activity was seen as providing the opportunity for negotiation of meaning for children. Only one differentiation was made on the basis of adapting the level of the activity. To be facilitated was defined as different from to be sustained as it adapted rather than sustained the activity as originally begun.

Choice and adaptiveness did not figure largely in the definitions of strategies. However, their apparently minor role may be misleading. The topics for the children's activities were typically introduced in a large group context which was not included in the sampling here. When introduced, various adaptations and choices were already structured into the activities. The episodes of dyadic classroom discourse frequently represented situations where children had already made choices, or the children or the teacher had already made an adaptation of the activity for the child's individual developmental level.

Knowledge. Some of the schemes of language functions and speech

acts described in Chapter Two included forms focused specifically on ideas and/or the structure of knowledge. These included Tough's (1976) logical thinking, predicting, projecting, imagining, and reporting functions, and Eccles' (1989) descriptive and argumentative ones. This range of cognitive function was not seen in the structure of knowledge that emerged here. Logical, creative, and scientific thinking, among others were all included in the curriculum areas outline used as an initial reference for coding knowledge. However, no coding of such forms was made. Eccles' (1989) argumentative function would have been categorized under the rhetorical form of discourse knowledge. However, no instances of this type were identified.

One might argue that such diverse forms of thinking would not occur in primary grades. However, Tough's (1976) types of language functions were developed through observations of preschool children. Using Bloom's (1956) taxonomy of knowledge as a reference, the vast majority of codings here would have been categorized at Bloom's most basic level, in contrast to his more sophisticated levels of comprehension, application, analysis, synthesis or evaluation. In contrast, language functions such as those of Tough's might be spread over several of Bloom's categories.

However, the structure of knowledge here was developed extensively revealing a wide range of subjects that were the focus of the dyadic episodes in these classrooms. These included the type of knowledge traditionally

associated with primary grade classrooms, such as knowledge of texts, word knowledge, and content knowledge of the physical and conceptual type. As well, it included social knowledge such as knowledge of classroom routines, and roles and responsibilities of children, and rhetorical knowledge related to knowledge of the use of language and the social and conceptual ends that can be accomplished through it. As well, learning attitudes figured in dyadic episodes as did children's feelings. Despite the traditional assumptions about the content of learning in primary grade classrooms, the range of knowledge reflected here would not likely surprise teachers of young children.

Possibly, the range of knowledge being addressed left little room for more sophisticated types of thinking. As well, given the constraints mentioned above, it may have been that teachers seldom had the time necessary to foster more complex thinking in dyadic episodes. This observation was supported by a study by Rogers, Perrin and Waller (1987) where they described the exceptional ability of one teacher to engage preschool children in more elaborated dialogue. Key to their depiction of the teacher-child discourse was the extended length of time of the teacher's conversations with a child. Although they pointed to a number of different strategies that this teacher used, all required a lack of constraint on the teacher's time.

Affect. Affect underwent little development in the study aside from the identification of its role within the structure of intent. The notion that

affect somehow saturates or pervades discourse was not developed here, perhaps because of the primary focus of teachers on strategies and knowledge. Teachers also seemed disinclined to discuss their feelings about individual children, perhaps because this is perceived as non-professional.

Features of Meaning

The preliminary structure of meaning underwent no modifications throughout the study. Several factors may have contributed to this. The first was methodological. Assuming such a broadly-described concept of language as was done here made it difficult to focus on all aspects of it evenly, especially within an inductive inquiry where the time for analysis is not open-ended but constrained by the next cycle of data collection. Another factor might have been the generality of the original descriptors, making them readily applicable in their original form.

Another reason might lie in the conceptual structure of the two forms of meaning that were being coded. The distinction between direct and indirect meaning is commonly found in discussions of discourse, and may already reflect a well-founded conceptual structure. However, the notion of idiosyncratic or conventional meaning is not well represented elsewhere, and was expected to undergo considerable development. The absence of any development may have been a function of the very few instances in which idiosyncratic meaning was coded. In almost all episodes, it was judged that

the meaning to be understood by the child was conventional within that context.

Summary of the Conceptual Structure of Dyadic Classroom Discourse

In summary, the following five points about the conceptual structure of dyadic classroom discourse as it emerged in this study are suggested. First, this form of discourse appeared to be intricately structured. Contributing to its intricacy were the interdependence of units, the typical-variant forms of units, the bipartite or tripartite structure of intent, the multifunctional quality of intent, the definition of constituents of intent at various levels, and the role of context.

In contrast, the substantive nature of these episodes often seemed relatively simple. There was little evidence of complex topic structure and the descriptors of knowledge gave little indication of the presence of more sophisticated forms of knowledge. However, a wide range of forms of knowledge was represented, including children's feelings. Third, conventional forms of meaning were more apparent than idiosyncratic forms. As well, only four types of strategies provided the interactive frame to support negotiation of meaning in an episode.

A fourth observation was that the conceptual structure was particularly characterized by a pedagogical quality. This was especially evident in the properties defining strategies. The bipartite or tripartite structure of intent

was strongly marked by its pedagogical content with the major property distinguishing strategies resembling a definitive quality of teaching. Knowledge included that traditionally associated with primary grade classrooms, as well as many forms of social knowledge, especially classroom social knowledge. The verbal, nonverbal, and nonvocal elements composing discourse structures may have been transferred in from more generic conversational uses outside of classrooms. However, some were likely specialized for purposes of dyadic discourse in classrooms. The apparent dominance of conventional meaning in these exchanges may also have reflected its classroom context, and the traditional responsibility of primary grade teachers for developing the conventional use of language by children. Fifth, the structure may reflect developmental qualities, as the children here were likely in the process of acquiring various discourse conventions, especially those of the classroom.

The picture of dyadic classroom discourse described above is limited to the three contexts of this study. What is not known is to what degree this conceptual structure characterizes primary grade classrooms more generally, classrooms with older children, or dyadic discourse in other contexts.

Limitations of the Study

The results of this study are limited to the contexts of the primary grade classrooms in which it was conducted. They are limited to the culture and

gender of the participants and the developmental levels of the children. As well, the teachers volunteered to participate in the study. As suggested by one of them, other teachers who might not have volunteered might have provided different results. Also all three teachers were considered exemplary by various sources, and less capable or less experienced teachers might also have provided different results, as well as making the research processes less feasible.

The range of variation of children was more optimal than for teachers, but judgements about the competence of the focus children changed over the course of the year, and it is possible that a broader range was evident in the classroom than appeared in the study. Also children who most strongly contrasted with one another in general competence and communication skills were selected. It is possible that discourse with other children might have provided some different results. As well, data were collected from across all contexts of dyadic discourse in the classrooms. A focus on a specific context might affect the results.

Although the exploratory nature of the study was necessary in addressing the issues in this study, it could also be seen as a limitation as it was difficult to judge the scope of the issues to be explored. The major effect of this limitation was the unevenness of time and attention to all aspects of the research questions. In particular, the criteria of ethical considerations and applicability and participation for teachers affected various decisions

throughout the research process. A closely related factor was the breadth of the working view of language. The range of features addressed limited the attention focused on any single feature. However, as Tesch (1990) noted, new problems often require innovative approaches, and the first attempts with such methods are likely to be inelegant, imprecise and crude. As well, because the study was designed to collect samples in naturally occurring contexts, and because the researcher was integrated into that context, it is possible that the results were affected by the presence of the study.

Another limitation was the role of the theoretical sensitivity of the researcher. The working view of language was the theoretical reference and so the research process was limited to assumptions stated in it. However, unstated tacit theoretical knowledge may also have contributed to the research process. As well, the personal and professional knowledge of the researcher which also contribute to theoretical sensitivity may also have influenced the process.

Finally, one limitation relates only to the development of the conceptual structure of dyadic classroom discourse. The features described represent only occurrence of features, and not frequency or distribution.

Implications of the Study

Although the purpose of this study was to explore methods for recording and describing classroom discourse, the work also suggested

implications for teaching practice, teacher education, and communicating about teaching. These are discussed below. As well, the conceptual structure of dyadic classroom discourse described here points to several qualities that might be significant to models of discourse more generally. Three qualities that seem particularly significant are: the notion of function as multifunctional rather than unidimensional; the notion of function or of a speech act as not simply active, but rather ranging along a continuum from active to interactive; and units of discourse defined not only by their internal structure, but also by their relationship to one another.

Implications for Teaching Practice

The argument for conversation in classrooms and its value for children's learning was discussed in Chapter One as part of the background to this study. Here, implications for this argument are discussed first. Then implications for teachers' understanding of this form of discourse are considered. Throughout, reference to teachers includes both pre-service and in-service contexts.

Dyadic Discourse and Children's Substantive Learning

As described in Chapter One, the role of conversation in classroom learning has been supported generally as a means to foster children's learning across the curriculum. Some general suggestions about how this connection

is made have come from several sources. Wells and Chang-Wells (1992) argued that teachers must use talk to help their students to make connections among their ideas. Clay (1991) argued that children's efforts to respond to the demands of the school were connected to more and less productive ways of responding in their early years in school. She argued that when children come to school it is the "teacher's task to help children make links between what they can already do with language and the new challenges of school" (p. 27). Scardamalia (1994) argued that children's intent was integral to the learning process. She stated that children needed to work with ideas with the intention of gaining control of them. She also argued that children need to initiate more, to talk more about what they don't understand, and to make multiple passes on ideas with teachers framing and reframing the developing ideas. She added that the conventional IRE classroom discourse patterns were not adequate for these purposes.

Given the above, two problems can be identified with the form of dyadic classroom discourse seen here. First, the simplicity of topic structure provided little evidence of the kind of connection building and development of ideas referred to in the arguments of Clay (1991), Scardamalia (1994), and Wells and Chang-Wells (1992). In contrast, as one teacher remarked, episodes often had a repetitive and routine quality to them.

Secondly, one might expect that teaching strategies that would support the processes described in these authors' arguments would be those that

encouraged choice, incorporated adaptiveness and were highly interactive. Here, strategies that would fit this description would be high on levels of teacher intent, interactivity, and adaptability, criteria only matched by the strategies to develop, to strengthen, and possibly to facilitate. This implies that most of the teachers' strategies found here were not optimum for supporting children's substantive learning.

Two other problems involve the notion of meaning described in the working view of language in Chapter Two. Meaning was seen as a process of negotiation between contextual and idiosyncratic meaning, a process resembling the kind of teaching-learning interaction advocated by Clay (1991), Scardamalia (1994), and Wells and Chang-Wells (1992). However, few strategies were seen here that would support such a negotiation process.

Finally, few instances of idiosyncratic meaning were identified. If the child's active generation of his/her own meaning, as described in the working view of language, is a crucial part of both language use and learning more generally, it seems surprising to see so little of it represented in dyadic classroom discourse. The dyadic quality of this form of classroom discourse would make it a likely location for negotiation of meaning with young children. Perhaps such opportunities are precluded by the mandate of primary level teachers to develop children's conventional use of language.

The Complexity of Classroom Conversation

A second point noted in the discussion on the value of dyadic discourse for children's learning in Chapter One was that the language of such discourse was being treated as simple and straightforward, and that more specific understanding of the underlying processes of dyadic classroom discourse was needed. As Cook-Gumperz and Gumperz (1992) argued, we "need a better way to understand how language enters into interaction to affect the learning environment of the school" (p. 104).

The description of the conceptual structure of dyadic classroom discourse in this study illustrated its intricate structure countering the assumptions that this form of language is simple and straightforward. In turn, this finding suggests further implications.

Demands on teachers. If classroom conversation is as intricate as described here, it seems likely that it places a considerable demand on teachers, an observation also suggested by teachers' comments in this study. They frequently remarked on the shortness of episodes, their internal complexity, the speed at which they turned over, and in general, the amount and complexity of communication in a single session. On more than one occasion, they commented that it was no wonder they were tired at the end of a day.

As well, teachers needed to play out each episode within the constraints of the organization of schools and demands of the curriculum.

Seeing teachers struggle with the complexity of multiple episodes within such constraints suggests one reason for the lack of substantive content found in the classroom discourse here. For example, in stark contrast, on the few occasions when teachers had the time to spend extensive time periods with children, episodes tended to be more interactive, more substantive, and provide considerably more opportunity for negotiation of meaning with a child.

Demands on children. The intricacies of dyadic discourse may also make considerable demands on children. Although teachers likely play a dominant role in establishing and controlling these episodes, presumably children's knowledge of the discourse conventions is significant. As well, children's knowledge of these conventions likely depends on the knowledge of discourse conventions that they bring from homes and communities.

Here, incidental observations by teachers and the researcher suggested that there were differences in the composition of episodes for different children. For example, for children who were generally more competent, episodes were often simpler, and interpretation of the teacher's intent may have been relatively easy. With children experiencing more difficulties in the classroom, episodes were often longer and more involved. As on one occasion, one teacher noted, it was questionable whether the child could have disentangled her intent.

Another difference among children was found when doing the

analysis in the study. It was noted that one child's family in each group of focus children was an immigrant family in that the parents came to Canada as adults. Similar patterns were seen for all three of the focus children coming from the immigrant families. In comparison to the other focus children in their classes, they each accounted for the least number of episodes, the highest percentage of positive reinforcement strategies, and 2 of the 3 represented the least number of strategies per episode. As well, all 3 had the highest proportion of descriptors of knowledge as content, and whereas affect as the object of intent was coded for 13 of the other 15 children, none were coded for the 3 immigrant children. Other differences were seen in instances of interruptions, initiations, and persistence in establishing episodes, as well as in the balance of teacher and child talk.

There may also be differences for children of different developmental levels, for example in the cues to which they attend and the significance they pay to them, and in varying abilities to use conversational conventions for their communication purposes. However, for all children, the structure of dyadic discourse in primary classrooms must represent a relatively new and complex interaction structure to be mastered in their first years of school.

A Pedagogical Bond

Despite all the apparent limitations described above, the teachers in this study had a strong commitment to the value of conversation in their

classrooms. It is suggested here that, given the central role of intent as well as its well-developed structure in the teacher's language, there may be something inherently significant about this dimension of discourse in the teaching process.

Properties of intent related to the role of the teacher, the role of the child, and the pedagogical bond between them. This bond referred to the teacher's commitment to enable the child's learning. Viewed this way, intent resembled a quality Katz (1977) considered central in the adult-child relationship in preschool programs. She called this quality "intensity", and suggested that intensity reflected a connection, bond, or attachment between teacher and child such that "the child feels or senses that what he [or she] does or does not do . . . really matters" (p. 21). Katz argued that "intensely . . . felt relationships between young children and specific adults may be the contexts in which their ultimate capacities for purposeful living are shaped, strengthened, and cultivated" (p. 24). An essential feature of dyadic classroom discourse may be its potential for establishing a pedagogical bond between teacher and child which may be particularly significant for children's learning. It may not matter whether the topic of an episode is the tying up of shoelaces or the structure of a story. Both may provide a similar opportunity for children to experience teachers' intent. Although such bonds may also be fostered in large and small group contexts, it seems likely that for many teachers this would be more difficult to accomplish, and for young children

would be more readily felt in dyadic structures.

However, again such bonds assume demands on teachers. In primary classrooms there are 20-25 such bonds to be maintained by the teacher, although only one by each child. Also, the weight of this bond may not be evenly experienced, and the teacher's commitment to teaching may be stronger than the child's commitment to learning.

The Case for Classroom Conversation

As seen here, episodes of dyadic discourse do not necessarily involve more sophisticated forms of knowledge, nor provide the kind of interactive negotiation of meaning that may be particularly important for learning. Presumably, despite the attention to individual children it affords, classrooms dominated by dyadic discourse may not be intrinsically better environments for learning. As noted by Mayfield (1992), different forms of classroom grouping are only mediators of learning, and not inherently definitive of it. Dyadic discourse may provide a unique and rich opportunity to develop pedagogical bonds between a teacher and child, which in turn may be significant for children's learning. However, its potential as an effective teaching practice likely also depends on certain qualities of the discourse.

Assuming the above, if teachers are to make effective use of classroom conversation, they likely first need the skills to manage its intricacies within the complex contexts of classrooms. They also need to understand how it can

be adapted to create optimal opportunities for children's learning. As well, they may need to develop ways of directly teaching, at least some children, the routines of dyadic discourse.

Implications for Teacher Education

Given the above discussion, teachers may require opportunities not currently available to learn more about how they use language in dyadic teaching contexts. However, as Cazden (1988) noted, this first requires that teachers bring their unconscious intuitive communication practices under more conscious control. In other words, as also observed here, much of teachers' knowledge of their own language use is tacit.

The Tacitness of Teachers' Knowledge.

Student teachers are often baffled by the ability of highly competent teachers. They understand the differences in effectiveness between themselves and experienced teachers, but have difficulty identifying and understanding what creates this gap. However, neither can teachers typically articulate what it is they do (Lay-Dopyera & Dopyera, 1987). As a student teacher in one of the classrooms here stated, this problem is endemic in teacher training with the result that students choose methods that allow them to survive in the classroom, but not necessarily ones they believe to be good. Here, such tacitness was observed in the teachers' frequent difficulties

explaining their intent, in the ambiguity and redundancy of their language, and in their extensive comments on how much they were learning about the language of teaching. Before teachers can consider making changes to their language use in classrooms, they must first have opportunities to overcome the hurdle of examining what is everyday, familiar, commonsense, and so transparent, or tacit in their prevailing language practices.

Making the Tacit Explicit

Some have argued that teaching can only be learned implicitly, and cannot ever be analyzed (Lay-Dopyera & Dopyera, 1987). However, this study suggests otherwise. It also suggests how teachers may benefit from careful analytical study of their teaching. As Seger (1994) stated, "implicit learning may provide a feel for how a particular system works that allows people to perform well, whereas explicit learning may allow for transfer of knowledge to new situations" (p. 190).

Seger (1994) discussed a process by which implicit knowledge becomes explicit through description and redescription of given events. She described how "subjects can develop explicit knowledge about stimuli through a sudden unexplainable realization that there is a pattern" (p. 190). The discussion process developed in this study helped the three teachers to transform implicit knowledge to an explicit form in a manner similar to that described by Seger. Typically the teachers had difficulty initially describing

their language use in the transcripts, but through discussion, gradually came to be able to analyze and articulate it readily. The discussions were often characterized by moments of excitement and fascination as patterns emerged in the discourse.

Once teachers can articulate such knowledge, they may need other methods to assess and modify their classroom practices. However, the type of discussion process developed here seemed to provide a useful tool to help teachers' develop explicit knowledge of their own classroom language. Although here discussions were based on the transcripts, tape recordings or even hand written records of exchanges might provide an adequate basis for discussion.

Contributions to Reflective Practice

As Boomer (1990) pointed out, despite much rhetoric and demands for review and improvement in teaching practice, it has seen little change, a point made similarly by Goodlad (1984). In recent years, this problem has been addressed by calls for reflective practice by teachers (McTaggart, 1991), and a particular demand for deliberate reflection on teachers' use of discourse in classrooms (Cazden, 1988; Heath, 1983). However there are two immediate problems for the teacher willing to embark on reflective processes. The first is that there is no single clear focus upon which reflection should be centred (McTaggart, 1991). The second is that much knowledge of teaching practice is

tacit (Mayher, 1990).

The methods developed in this study might be useful for purposes of reflective practice more generally. In particular, the pedagogical quality of the conceptual structure of dyadic discourse would appear to make a useful framework for such reflection. The transcript or other artifact of classroom discourse provides a focus, and the discussion process a means to articulate tacit knowledge. A template, based on the conceptual structure described here used as an observational guide could help focus the discussion process. However, it is also likely that the development and use of such templates requires further research to make them useful in most practical settings. This will be discussed in the following section.

Both in-service and pre-service teachers with an interest in various aspects of the teaching process might find the methods developed here useful. The comments of the three teachers in this study support this suggestion. They all emphasized strongly the value of the research processes for their own professional development.

Implications for Observing and Assessing Teaching Practice

Classrooms are increasingly open to the scrutiny of parents, administrators, and other professionals. Often visits are cursory. However, judgements may be based on these limited observations. The work described here suggests several implications about such observation processes. First,

observations of teachers' classroom language in isolation from extensive and detailed contextual information is likely to provide an overly simplistic picture of classroom events, is likely to be poorly informed, and may well be misleading.

A second point is that holistic descriptions of classrooms and classroom activities such as activity-based or child-centred, often used to suggest that children are directing their own learning, may well be misleading. A more particular look at the types of strategies in the discourse of these activities is necessary to judge the respective roles of teacher and child in the child's learning. Finally, the complexity of intent and the role of indirect meaning described here suggest that simple transcripts or other records of the verbal content of teaching practices may be poor reflections of the complexity of the underlying language and teaching processes.

Implications for Communicating About Teaching Practice

In recent years, critics have accused educators in Canada of masking their assumptions behind jargon, preventing parents and the public from properly understanding and assessing educational purposes and practice. Moreover, educators have been accused of using Canadian schools to pursue agendas not shared with Canadian society. As Fleming (1992) argued, the teachers in the public school system appear to have a different agenda from the public, and, to be unwilling to enter the debate initiated by those outside

the educational establishment. Similarly, Lewington (1995) stated:

One of the biggest beefs about Canada's schools is that few people really know what happens in the classroom. What are students learning? How well are they learning it? What happens when they don't learn it? Schools have been reluctant to answer such questions posed by parents and the public. (p. A3)

This study suggests an alternative point of view. A major problem that emerged in the study was that codes taken from teachers' language were difficult to report, resulting in the third phase of coding in the study. The observation was made that there had been much redundancy and ambiguity in the codes derived from the teachers' language. Alexander, Schallert and Hare (1991) made a similar observation about the language of the literature on cognition and language. They noted the proliferation of terms "sometimes offered as synonyms, sometimes presented as specific aspects of the subsuming construct, or, more often, simply loosely used to refer to the related constructs without self-conscious attempts at a more precise or consensual usage" (p. 315). They argued that what was needed was terminology that was clear and also mutually coherent.

Similarly, it is suggested here that teachers may lack a clear and coherent vocabulary for describing their own teaching language and the teaching practices this language enacts. It may not be that teachers will not communicate with the public about their teaching, but rather that they cannot. Furthermore, as also argued by Lay-Dopyera and Dopyera (1987), it is suggested here that the typical lack of public respect for teachers might be

remedied if teachers could better clarify for themselves and communicate to others what they do and how they do it.

In summary, the implications of this study suggest that although dyadic discourse in classrooms may reflect a pedagogical quality central to the teaching process, it is unlikely to be inherently effective for children's learning. Its effectiveness may be constrained by contextual factors, abilities of teachers, individual differences among children, and by the intricacies of this form of discourse. For teachers to use it effectively, they likely need to develop understanding of its structures and how they function to mediate children's learning. However, the first difficulty for teachers attempting to develop such understanding is the tacitness of their knowledge of their own language use. The recording and describing methods developed here seem useful for purposes of making this tacit knowledge explicit. As well, these methods may be useful for purposes of reflective practice more generally. Finally, the tacitness of teachers' knowledge combined with the lack of a clear and coherent vocabulary to reflect the conceptual structure of classroom discourse and the teaching practices carried by it may contribute to a wider problem of communication between teachers and parents and the public.

Future Research

This study was designed not to test hypotheses, but to develop them.

Based on the study, a number of issues could be pursued. However, first, the type of study design used here should be considered more closely to judge its significance for educational research. In particular, the effectiveness of different research procedures and ways of reporting this form of work should be assessed.

Methods for Recording and Describing Dyadic Classroom Discourse

The methods developed here for recording dyadic discourse in classrooms could be further investigated. In particular, further clarification of the intrusiveness of audio versus video recording methods would be useful to future studies of classroom discourse. Extending the recording techniques developed here to other age groups, other teachers, and other cultural groupings might indicate limitations or applications of the techniques not found here. A problem with transcription that needs addressing is how to transcribe intonation and also maintain readability. Finally, the coding technique used in describing dyadic discourse also needs further development. According to Lampert and Ervin-Tripp (1993), coding here was in the construction and implementation phases of development which should be followed by phases of evaluation and application.

The Conceptual Structure of Dyadic Classroom Discourse

The conceptual structure of dyadic classroom discourse could be

developed in various directions. The role of children's intent in dyadic discourse which was not pursued here seems especially important. For example, the degree to which the pedagogical bond is felt reciprocally by children may relate to the degree to which participants in conversation share similar involvement and commitments to cooperate in communication (Gumperz, 1982). Dorr-Bremme (1990) indicated how communicative breakdowns in primary grade classrooms are frequent and often attributed to misbehaviour, but may be more appropriately related to differences in children's assumptions about communication. However, in the literature, there appears a bias related to cooperation. For example, Dillon and Searle (1981) purposely chose "good children" and "good teachers" for their study. Cazden, Michaels and Tabors (1985) chose the "star sharers" or "those who share willingly". In Saville-Troike's (1987) study, two young Chinese boys were the focus. They had already been briefed by their mother on what to expect in the conversational context, and responded cooperatively to the conversational demands. Episodes where cooperation is lacking do not appear well-represented in the literature on conversation with children. Incidental observations here suggested that the pedagogical bond may not be shared equally, and further research on children's intent would seem significant both to the literature on intent and conversation, and also to the literature on teacher-child discourse in classrooms. This direction might be particularly valuable for investigating the nature of teacher control and

authority in classrooms, a question that has been considered crucial in recent educational debates (McHoul, 1990).

The structure could also be extended by systematically sampling children of different ages, teachers with different training or backgrounds, and children and/or teachers with different cultural backgrounds. Another possibility is to develop the template further. For example, for a single teacher or child, a template illustrating the various features of discourse identified in his/her repertoire, and also some indicator of the frequency and distribution and usage of each feature might function as a form of teacher or learner profile. A more sophisticated approach would be to attempt to adapt the template to illustrate both teacher's and child's codings across a single episode to reveal the intricate interaction of structures and strategies of both partners in the playing out of an episode.

Future research could focus on specific aspects of the conceptual structure developed here. For example, teachers seemed especially interested in interruptions and the timing of initiation by children. Termination patterns, which were observed to be almost exclusively teacher controlled might also be interesting to pursue. Further investigation of turn-taking patterns, in particular to determine how non-scripted they are, could have significance for understanding demands on children in classroom discourse. Additional studies providing more instance of idiosyncratic meaning would be valuable for considering the conceptual strength of this feature. Given the

role of negotiation of meaning in learning described in the working view of language, further study of how meaning is or is not negotiated in classrooms would also seem important. Although affect was limited in its development here, the conviction that it plays a significant role was not diminished, and work designed to focus more specifically on it could be insightful. In particular, continuing investigation of the notion of a pedagogical bond should include attention to affect as it seems likely to be an important contributor to this teacher-child relationship.

Relations, Correlations and Effects

Given the questions raised here about its effectiveness of substantive learning, future research should examine the relationship between dyadic discourse and its effects on children's substantive learning. However, further descriptive work, as described above, may be necessary to support this kind of investigation.

A relationship that the teachers here were interested in pursuing was the correlation between structures and strategies. Another direction might be to use templates developed for children for comparisons between children judged as thriving and non-thriving, or children of different cultural backgrounds, or genders. As well, correlations could be considered between patterns of usage and measure of learning. Children's templates could also be compared to teachers' expectations of children in dyadic exchanges, and to

consider what children need to learn about this form of discourse. Similarly, teachers' templates could be compared to expectations for teachers in conversation with children.

Another possibility would be to use the teacher-child template to compare the functioning of different teacher-child dyads. As one teacher remarked, it would be interesting to see how teachers use unequal strategies to provide equal opportunities for children. Unequal opportunities for some children might also be revealed.

A more sophisticated set of questions involve the relationships across episodes. For example, the interrelatedness of units prompts a question about how cohesion across units is accomplished, and also about the nature of interrelatedness more broadly. For example, incidental observations suggested that there were patterns formed by constellations of features specific to certain teacher-child dyads.

Methods for Classroom-Based Use

Although some adaptations of methods for classroom-based use were suggested here, further work is likely needed to make these approaches practical for teachers. In particular, the use of the template as an observational guide should be refined. For example, it might be possible to begin a teacher working with a very simple version of the template, and as understanding and interest develop, add more detail. The usefulness of

adapted methods which would be less systematic and detailed than those used in the study also needs to be investigated.

Finally, working with teachers who are ready to consider how to assess and modify their use of conversation in the classroom would be of particular interest. Similarly, work is needed with student teachers to consider how methods for examining their classroom language can contribute to their learning at this stage in their career.

Broader Issues

Finally, several broader issues have been suggested by this work. First, it is argued here that the observed redundancy and ambiguity in teachers' language about teaching should be investigated further, as it may have implications for teachers' use of language about teaching, and also for recent criticisms of Canadian educators more generally. As well, as suggested by one of the teachers, investigation of differences between interaction styles of either teachers or children, inside and outside the classroom, or at home and at school could be insightful.

Summary

This study has explored a form of classroom discourse that in recent years has sometimes been associated with excellent practice, at least in primary grade classrooms. Although the results are limited by the constraints

of the study design, it is argued here that they suggest several points important to current educational discussions. First, there may be nothing inherently valuable in a broadly-defined teaching practice such as the use of conversation in classrooms. Rather, its effectiveness likely depends on a complex constellation of factors. Second, much of the understanding of language used in classrooms, even among exemplary teachers, may well be tacit, and not immediately accessible to parents, other professionals, or to researchers. Third, there is a need for more attention focused on assumptions about the straightforwardness of language, at least in reference to teaching practice. Such assumptions mask the intricate function of language in this complex human context. Finally, as in this study, addressing such issues may involve methods that are time-consuming and laborious. However, it is argued here that such finely focused descriptions of the intricate details of classroom events is ultimately essential to the understanding of language used in classrooms.

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Appendix A Glossary

Adjacency pairs: "utterance pairs in which an utterance by one speaker requires a particular type of response by the listener" (Kess, 1992, p. 163)

Category: "a classification of concepts . . . discovered when concepts are compared one against another and appear to pertain to a similar phenomenon" (Strauss & Corbin, 1990, p. 61)

Classroom discourse: the communication system of teachers and students through which meaning is exchanged and new knowledge developed and the parameters of the school understood as a social institution are enacted (Cazden, 1988)

Child-centred approaches: a term used loosely to mean teaching practices that encourage children to participate in directing their own learning

Concept: "conceptual labels placed on discrete happenings, events, and other instances of phenomena" (Strauss & Corbin, 1990, p. 61)

Constant comparison: a process fundamental to grounded theory in which units of data are compared and contrasted and questions asked about the phenomenon being studied, its purpose and what it represents resulting in conceptualization and categorization of the data and the exploration and extension of the researcher's assumptions about the phenomenon

Contextualization cues: verbal, nonverbal, or nonvocal elements used in discourse to remind or indicate how context is related to an ongoing exchange

Conversation: a unit of spoken discourse produced by more than one person by coordinating conversational routines to jointly construct meaning (Kess, 1992)

Developmentally appropriate practice: a program or practice that is designed to match the needs of the child considering both typical patterns of human development and also individual differences; consideration is made of patterns of growth, personality, learning style, and family background (Bredenkamp, 1987)

Discourse: the organization of language above the level of the sentence, and the use of language to accomplish a particular purpose (Schiffrin, 1994)

Dyadic classroom discourse: one to one discourse between teachers and children in its naturally occurring context

Function: the use to which an entity is put; its role or purpose (Sutherland, 1989)

Grounding: the collaborative process by which a contributor and the participants in a conversation try to reach the state where the participants all believe they have understood what the contributor meant (Clark & Brennan, 1991)

In vivo codes: codes used for labelling concepts in the grounded theory approach where the label is adopted from the language of the individuals providing information

IRE pattern: the three part classroom discourse pattern originally identified by Mehan (1979) consisting of teacher initiation, student response, teacher evaluation of student response and termed the default or unmarked classroom discourse pattern (Cazden, 1988)

Knowledge: "an individual's personal stock of information, skills, experiences, beliefs and memories" (Alexander, Schallert & Hare, 1991, p. 317)

Knowledge use: the activating or processing of knowledge (Alexander, Schallert & Hare, 1991)

Language across the curriculum: the structure and use of language for purposes of learning in all subject areas in the school

Lexical: structure and meaning in language as found in individual words

Methods: techniques used to collect and analyze data and concepts and conceptual frameworks that provide the necessary vocabulary to describe the data to be collected and analyzed

Open coding: "the process of breaking down, examining, comparing, conceptualizing, and categorizing data" (Strauss & Corbin, 1990, p. 61)

Prosodic: nonverbal elements such as volume and pauses

Strategy: the tactics used by a teacher to accomplish some effect with a child

Structure: the constituents of an entity; its properties and relationships among them (Sutherland, 1989)

Theoretical sensitivity: the combined professional experience, personal experience and knowledge of the literature in a given area that together make "the attribute of having insight, the ability to give meaning to data, the capacity to understand, and capability to separate the pertinent from that which isn't" (Strauss & Corbin, 1990, p. 42)

Topic: the theme for discussion, or subject of conversation where theme is understood as the subject on which one speaks, writes, or thinks (Fowler & Fowler, 1982)

Verbal, nonverbal and nonvocal structures: verbal structures are all aspects of language composed of phonemes, morphemes or words; nonverbal or prosodic structures are oral qualities of language that are not verbal, such as volume; nonvocal structures carry meaning through structures that are not vocal, for example, gestures, smiles etc.

Whorf-Sapir hypothesis: that every language represents and creates a distinct reality (Seymour-Smith, 1986)

Year 2000 approach: a term coined by the British Columbia Ministry of Education (1989) and loosely applied to a teaching approach typified by an eclectic set of assumptions usually including the following: children are unique; children's needs, learning rates and styles are different; children learn through active involvement and play; learning is essentially a social process; language plays an essential role in mediating learning; children's learning is a holistic process always including cognitive, social, emotional, and physical aspects; parents are an important part of their child's education; learning is a lifelong process; learning is a natural and enjoyable process; learning is a constructive process; children learn through child-centred activity

Appendix B
Principal's Letter Of Informed Consent

DATE

TO WHOM IT MAY CONCERN:

I have discussed the nature of the proposed study in linguistic interaction between children and their teacher with Anne Lindsay, as she has described it in her request for ethical approval from the University of Victoria. I give my permission for this study to be conducted in JUDITH J's primary class in Middletown Elementary School. I also confirm that in no way will MS. J'S participation in this study affect her employment or advancement.

JUDY J., Principal, MIDDLETOWN ELEMENTARY SCHOOL

Note. The names of principal and teacher are pseudonyms.

Appendix C
Teacher's Letter Of Informed Consent

DATE

TO WHOM IT MAY CONCERN:

I have discussed the study in linguistic interaction between children and their teacher with Anne Lindsay as she has described it in her request for ethical approval from the University of Victoria. I give my permission for this study to be carried out in my primary class at Oldtown School and to participate as the teacher in this study. I am participating in this study voluntarily, and understand that I may withdraw at any time. I understand that as part of this study I will be videotaped and audiotaped, and that brief excerpts of the videotapes may be used in Ms. Lindsay's doctoral oral exam, but, otherwise, all data will be strictly confidential and kept in a locked file cabinet only accessible to Ms. Lindsay. I also understand that in the writing up of this project, my identity will be kept strictly confidential, and that my participation in this study will in no way affect my employment or advancement.

Laura L. , Oldtown School

Note. The teacher's and school's names are pseudonyms.

Appendix D Pilot Projects

In the course of developing the proposed study, two exploratory projects were developed. These were designed to explore the feasibility of making the kinds of observations assumed to be necessary. However, through the course of these projects other points were also observed.

Pilot Project 1: Campbell River, 1991

The observations in this project were carried out in a daycare with four children, aged three or four. Two were identified by the teachers as having language problems, and two others were chosen by the researcher to represent high and low levels of communicative competence. The first purpose was to explore the usefulness of observational notetaking for recording nonverbal features of discourse. No video or audio taping was done. The second purpose was to explore the role of nonverbal features assumed to be important in exchanges between young children and their teachers. The nonverbal features of the discourse between teachers and the four children were recorded over a sampling of all events in the daycare schedule. The method for observational notetaking was reviewed and redesigned each day. Language samples for each of the focus children were also recorded for the purpose of assessing the children's development of articulation. This assessment was at the request of the teachers who first identified articulation when asked to consider children's level of language development. A simple analysis of MLU and syntactic complexity was also made for these samples. A summary discussion was held with the teachers to discuss the results of the observations. The project revealed the following points:

1. First, in addition to eye contact, smiling and turn taking, head position, physical proximity, and physical contact all appeared to play a role in the discourse between children and teachers. Exchanges viewed as including these features were often less clearly begun and ended than when only verbal information was considered. They included exchanges with no verbal content and many unsuccessful attempts at initiating an exchange. The children appeared to rely strongly on the nonverbal features while the adults depended more on verbal ones.
2. Vocalizations, sound play and such appeared to play an important part in the children's language.
3. Teachers made use of broader contextual knowledge of children in their interactions such that interpretation of their meaning was ambiguous to an observer until this information was provided.
4. Children's contributions to exchanges were often marked by an unclear logic or coherence and/or by an apparent lack of willingness to cooperate in constructing the discourse.

5. The teacher-child discourse at such events as lunch or snack or circle appeared much less variable than the incidental discourse observed over the rest of the day between teacher and focus children.
6. Observing children judged to be of varying levels of competence was useful in indicating descriptors that help describe the teacher-child discourse as it contributed to descriptions of both the presence and absence of features of the discourse.
7. In the summary discussion, teachers provided a variety of background knowledge about the different children that was consistent with the observations made of their language. This background context tended to provide explanations for observed but otherwise anomalous patterns in the children's language development.
8. The teachers reported that the course of the project had changed the way they looked at children's language refocusing their attention away from an emphasis on articulation to some of the other features that had been observed in the project.
9. No method could be developed for making observational notes of nonverbal features that provided a complete or accurate record.

Pilot Project 2: Victoria, 1993.

This project was carried out in a grade two and three class with seven and eight year olds. Observations were made of teacher-child discourse in several time periods in this class. The children observed were five identified as of concern by the teacher and one judged highly competent by the researcher. The purpose of this project was to attempt to find a way to record both nonverbal and verbal aspects of incidental teacher-child discourse that was likely to provide an accurate and complete record. The Campbell River project and comments by other researchers suggested that video recording would be necessary to collect the nonverbal information. The first task of the project was to explore videotaping procedures after which the problem of recording verbal information would be addressed. Each day the recording process and the resulting tapes were reviewed and modifications made as necessary. In the process, a variety of tape recordings were made. These recordings were used to explore possible methods of data analysis. From this project the following points were concluded:

1. Videorecordings suggested that there might be considerable repetition in the patterns of nonverbal features used by the different child-teacher dyads. Given this, it was decided that it might not be necessary to depend exclusively on videorecordings.
2. A process of audiorecording that could make a complete and accurate record of the verbal information in a classroom working session was developed. This consisted of the attachment of a walkman tape recorder to the teacher with a stereo mike. A 45 minute tape could be made requiring no adjustment of the teacher's working style. At the same time a set of

observational notes could be made tracking the ongoing interaction and providing cues to identify the speakers on the tape.

3. A variety of minor technical problems associated with such recordings, were identified and resolved. They included maintaining the charge on the battery packs, and identifying some of the ways in which recording may be inadvertently stopped.

4. The teacher reported that the children quickly became familiar with the recording process and appeared unconcerned by it.

5. The teacher reported that as long as the video recording was not too close to her, she did not find it intrusive or uncomfortable. (A zoom lens on the camera provided a close-up record without the researcher needing to be too close.)

Appendix E
Parental Letter Of Informed Consent

DATE

To: _____
(Parent's Name)

As a doctoral student at the University of Victoria I am studying the nature of language between teachers and the children in their classes. This work, I hope, will provide teachers and student teachers with information that will help them review and improve their own teaching, and help them to better provide for children's language development and the use of language for learning in the classroom. I am planning to work with Ms. Cleaver on a project related to this work.

If you would like your child to be part of this project, he/she will be observed during interactions with the teacher in their normal school activities. These observations will include videotaping, audiotaping and note taking. We will be discussing these observations, and will discuss them with you at your request. Throughout this project, the tape recordings and notes will be kept in a locked filing cabinet, and I will be the only person to have access to it. Brief extracts from the video tapes may be used in my doctoral oral exam, but, otherwise, all the information we collect will be strictly confidential and your child's identity will be anonymous at all times. At your request, the observations being made of your child will be stopped at any time throughout this project.

If you would like additional information about this project, I would be glad to discuss it with you either at the school or by phone (381 4448). Thank you for your support on this project.

Anne Lindsay

I would like _____ to participate in this project.
(Child's Name)

(Parent's or Guardian's Signature) (Date)

Note. The teacher's name is a pseudonym.

Appendix F
Class Schedules

Oldtown School - Grade 3

AM - 1					
AM-2		11:20 Music	10:40 Library		10:45 P.E.
PM	2:20 P.E.			2:20 P.E.	

Middletown - Kindergarten

AM-1					9:30 P.E.
AM-2	11:20 Library				
PM					

Newtown - Grade 1/2

AM-1					9:00 Buddies
AM-2	Music				
PM			Music		

Note. The five columns across each of the timetables represent Monday through Friday respectively. AM-1 is 8:30-10:20. AM-2 is 10:40-12:00. PM is 1:00-3:00 except Wednesday when it ends at 2:00.

Appendix G
Master Schedule - Record of Time Blocks Sampled

SCHOOL:

	Monday	Tuesday	Wednesday	Thursday	Friday
AM-1					
AM-2					
PM					

SUBJECT AREAS SAMPLED:

Appendix I
Structures To Be Transcribed And Transcription Conventions

Note. Conventions for nonverbal elements are adapted from Gumperz (1982) and the pilot studies. Activity means action and speech; action means nonvocal elements; and speech means verbal and nonverbal elements. Normal is for speaker and context, as judged by the researcher.

Level	Feature	Transcription Convention
Contextual Features	- date, recording session number, and school/class identification	Title
	-real time	Gloss
	-speech with all children between episodes of dyadic discourse	Gloss
Discourse Structures	-basic unit - an episode - a self-contained interactive exchange between a teacher and one child	New York 12 font
	-turn patterns - organization of each episode by alternating turns with each turn defined as the speech of one participant	In a vertical spatial arrangement (Edwards, 1993) with initials of speaker flush left followed by tab followed by speech
	-turn patterns -interruptions defined as a speaker taking a turn before a previous speaker's turn is complete or conversational overlaps throughout the episode	Interruption or overlap set directly beneath point of interruption in previous speaker's speech (not flush left)
	-segments within turns that are sentence-like and typically punctuated by periods with ends defined by syntax, falling intonation, enough time for a breath	Double period (. .)
	-segments within turns that are phrase -like typically punctuated by commas with ends defined by syntax, rising intonation, and less time than following a sentence-like segment	Single period (.)

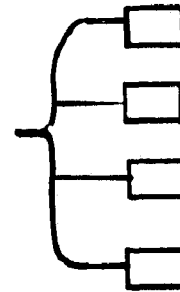
	-ends of turns defined by syntax, falling intonation, and longer time following than after sentence-like segments	Three periods (. . .)
	-turn patterns -time between turns can be longer than normal	Four periods (. . . .)
Verbal Elements	-all verbal content of each episode including incomplete words, morphemes that are not standard English, and single phonemes	Conventional English spelling
	-unintelligible content	Empty parentheses () at location in turn
	-repetition of consonants	Repeated letter
	-elongation of vowels markedly different from normal	Repeated letter
Nonverbal Elements	-vocalizations - laughing, chuckling, throat cleaning and giggling;	Note in italics at location in turn
	-any volume markedly different from normal	Note in italics following speech
	-intonation	Intonation curves
	-time between words - may be less than normal	Hyphen joining the two words
	-accelerated speech	Note in italics following speech
Nonvocal Elements	-actions initiating, accompanying, or terminating an episode	Gloss
	-gaze direction and eye contact	Gloss
	-proximity	Gloss
	-hand movements - giving or showing something, pointing, raising hand	Gloss
	-facial expression - smiles	Gloss
	-head movements - nods	Gloss

Appendix J
Form For Coding of Transcripts

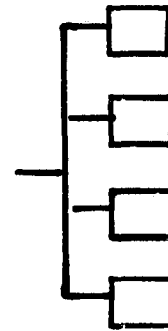
Epis. #	Interpretation - Researcher	Related Structures	Interpretation - Teacher	Related Structures

Appendix K
Notations And Category Types In The Networks Analysis Approach

Simultaneous Choices:
choose one from each arm of the bracket



Mutually Exclusive Choices:
choose from only one arm of the bracket



Recursive Choices:
make any number of successive choices from
the bracket



Note. Adapted from Bliss, Monk, & Ogburn (1983).

Appendix L
Semistructured Interview For Summary Discussion With Teachers

1. In what ways was the information we have collected in this study useful to you as a teacher?
2. Can you see yourself using the methods we used for further study of your own of classroom discourse? If not, why, or with what modifications?
3. Can you see other teachers using these methods for studies of classroom discourse in their own classrooms?
4. How useful do you think some of these methods would be for student teachers developing their use of classroom discourse?
5. What problems were there with the methods used here from your point of view? How could these be addressed?
6. What questions do you think are worth pursuing with this work?
7. Do you have other comments?

Appendix M Modifications To Sampling Procedures

Note. The following abbreviations are used in this appendix: PP-Preliminary Procedure; NPP-No preliminary procedures; OBS-Observation; CRIT-Criteria; MOD-Modification; POT-potential modification; MTD-maintained process; REV-Revised procedures; ADD-New procedure; and, EXC-Exclude procedures.

Sampling Of Participants

Sampling of Teachers

PP: Teacher participation - Teachers volunteered in September to participate in the study.

OBS: Prolonged or repeated illness or change in perception of the study over the school year might interact with stress related to the study resulting in teachers being unwilling to continue. This did not occur.

CRIT: Ethical criteria meant teachers should participate willingly and the study should be as non-disruptive as possible as did the requirement that data be collected in naturally-occurring contexts.

MOD-POT:

Sampling of Children

PP: Parental permission - This was requested for all children but only six children would be identified as the focus children.

OBS: Parental permission was granted for 22/26 children in Laura's class, 14/21 in Judith's class, and 14/24 in Elizabeth's class. All three teachers provided communication in addition to the letter prepared by the researcher through incidental conversations and the class newsletter, and some parents contacted the researcher for further information. Without their additional support there might have been difficulty obtaining an adequate number of parents providing permission. Several children that the teacher had hoped to include in the study were not because of lack of parental permission, but the rate of permission was adequate to meet the criteria of more and less competent children.

CRIT: Focus children needed to represent the range of competence in the classroom.

MCD-POT:

PP: Parental permission - In the letter requesting parental permission, parents were given the option of having their child's participation discontinued at any time.

OBS: This did not occur.

CRIT:
MOD-POT:

PP: Focus children - The total number of boys and girls in each class should be equal.

OBS: The grade three class had a disproportionate number of boys to girls and meeting all criteria for focus children was difficult.

CRIT: There should be equal numbers of boys and girls and equal numbers of more and less competent children, and all must have parental consent. The equal numbers of boys and girls was judged as the most flexible of the criteria.

MOD-REV: Two girls and four boys were chosen

PP: Focus children - Teachers were expected to be able to identify focus children given the set of criteria for them.

OBS: Teachers' choices indicated they were using additional criteria to pick children who might benefit from the study. Decisions about the less competent children generally seemed clearer for the teachers. With these children they had some general concern but indicated that they did not understand it as well as they would like. Identifying the more competent children seemed more difficult, and the researcher suggested three of the nine children in this category. Teachers' choices for these children included two cases where the teachers had identified a concern about a child's communication style despite their apparent competence in communicating. In one case, the teacher's choice was because she felt she knew little about this child. Two other choices were made with no particular benefit in mind, only to meet the criteria of competence.

CRIT: The purpose of more and less competent children was to obtain variety in the data. However, the study was to be useful to the teachers, and it was thought their uncertainty in identifying children might reflect variety across children. Their criteria were accepted as important.

MOD-REV: The teachers' choices were accepted even though they did not match the initial criteria.

PP: Focus children - Children's competence could be readily judged by the teachers and used to pick the six focus children.

OBS: Throughout the course of the study both the teacher and researcher revised their judgements about the competence of some of the focus children, as well as of other children in the class reflecting an increasing understanding of what the term competence implied.

CRIT: Variation in the data was not expected to be affected. It was judged at the outset to be desirable to follow the same six children throughout the study.

MOD-MTD:

PP: Focus children - The same six children would be the focus children throughout the study.

OBS: Focus children might have moved out of the school but this did not occur.

CRIT:

MOD-POT:

Sampling Of Contexts

PP: Scheduling recording - Recording would be scheduled twice a week per class for ten weeks.

OBS: The following obstacles interfered with the original recording schedule:

1. Illness of teachers and the researcher caused cancellations especially in the five weeks preceding the Christmas break. Altogether, 8/17 of the sessions in Elizabeth's class, 3/14 in Judith's class, and 5/16 in Laura's class had to be cancelled.
2. Problems with data recording at the beginning of the study eliminated the data for several sessions.
3. In some cases, the classroom schedule was different than had been discussed when the session was scheduled because teachers forgot about upcoming events, or were not informed until that day and either children were not in their room or the classroom activity.
4. Teachers adjusted their planned lessons to meet the needs of the children. Sometimes a short large group activity became extended providing little time for an independent working session and so the session was abandoned.

CRIT: Ethical criteria determined that cancelled or changed situations be handled as if they were not a problem or inconvenience even though they meant scheduling a replacement recording session. The criteria for sampling included spreading the data collection over as long a period of time as possible, and extending the scheduling was not seen as a difficulty. Criteria for systematic sampling meant distributing samples evenly over the longer time period. Criteria for informational redundancy meant collecting samples until this condition was met.

MOD-REV: The familiarization phase was lengthened to four rather than three weeks. The taping schedule was also extended. Attempts at keeping an even distribution of taping sessions were less successful given logistical difficulties and the commitment to make no demands on the regular class schedule. However, the distributions were similar across the time period for all three classrooms although a higher percentage of sessions were concentrated in January. There was a constant effort to not make teachers feel that these problems were seen negatively but rather to convey an understanding that this is normal and to be expected in doing research in classrooms and schools. When it was necessary to abandon a scheduled session, the teachers were reassured that it would have no significant impact on the study and that the ongoing events of the school and class should not

be influenced in any way by the study Elizabeth and Judith appeared to accept this reassurance quite readily, but Laura required ongoing reminders not to prioritize the demands of the study over other factors in making decisions about classroom events. Recording continued for four and a half months until informational redundancy was reached. It began to appear after 6 to 7 transcripts had been collected and 10 recordings were taken from each setting. The transcripts varied in length from 2 1/2 to 8 pages and from 4 episodes to 31. The number of episodes in the Oldtown transcripts was 149, in the Middletown transcripts was 138, and in the Newtown transcripts was 130.

PP: Recording archival material - This was to be collected after sampling was completed.

OBS: Some recordings were collected but because of time constraints were not transcribed or discussed with the teachers.

CRIT: Data should be collected systematically across all contexts.

MOD-REV: The unused recordings were considered to represent the same time span as the other recordings and so were considered a better choice for the archival material. This choice was also logistically desirable.

PP: Systematic sampling - Sampling was to represent the range of variation of classroom discourse across all contexts.

OBS: An additional variable in class routine was identified as the daily schedule.

CRIT: Sampling should be systematic.

MOD-ADD: The days of the week were added to the master schedule.

MP: Systematic sampling - defined as above

OBS: This was complicated by the following points: 1. The systematic sampling increasingly limited the timeblocks in each class that would fulfil the sampling requirements. 2. Scheduling was constrained by the researcher's other weekly responsibilities. 3. Only one videotaping could be made each day because of the amount of battery charge. 4. Days of the week were added as a variable to be sampled.

CRIT: Sampling should be systematic.

MOD-REV: Not every timeblock on every day and every subject area could be sampled, but at least one session was recorded in each time block, for each subject area in each class and for all but one day of the week in two classes.

Appendix N
Modification of Procedures For Recording Dyadic Classroom Discourse

Note. The following abbreviations are used in this appendix: PP-Preliminary Procedure; NPP-No preliminary procedures; OBS-Observation; CRIT-Criteria; MOD-Modification; POT-potential modification; MTD-maintained process; REV-Revised procedures; ADD-New procedure; and, EXC-Exclude procedures.

Audiorecording

PP: Preparing to record

OBS: Several problems were observed with this process. These were:

1. The diagram on the deck for the correct placement of batteries was very small and indistinct. If the batteries were not correctly placed in the deck, it would not function and the indicator light that indicated that the unit was functioning would not light up. However, this was a very small dim red light on the side of the deck, and not easily seen especially in strong light.
2. The word 'Tape' appeared in the unit's window when a taping function was ongoing, but also when the 'Pause' button was on. It took only a small amount of pressure for the pause button to be activated and as it was at the corner of the deck this could happen as the teacher moved around the room.
3. The mike could easily be plugged into the earphones jack which was right beside it, and although labelled the lettering was very small. The unit indicated it was taping, but nothing was recorded.

CRIT: The loss of recording sessions would have made obtaining a systematic sample more difficult. It would also have made the research process more inefficient and might have been frustrating to the teachers.

MOD-REV: The pause button was scotch taped in the 'Off' position. A routine check was made at the beginning of each recording session for battery placement and the correct placement of the mike.

PP: Observation records - Additional verbal or nonverbal cues and contextual information were to be added if judged significant.

OBS: It became evident that much nonverbal information could not be reliably recorded. When the episode between child and teacher was short or simple, it was possible to record much detail. When episodes were longer and more complex, as was typical with certain children, much information could not be recorded. As well, if episodes with focus children were spaced out with episodes with non-focus children in between, it was easier to make notes. However, if episodes with focus children followed one another or were embedded within each other, note-taking became much more difficult. As became evident through the videotaping, much information is not noticed at the time, a fact of which the observer is not aware. The reliability

of this technique for obtaining a comprehensive set of notes was uncertain. Also the role of the researcher when note-taking was judged as more intrusive than when videotaping because it was necessary for the researcher to sit still and concentrate on the note-taking. This meant that her role was considerably different than it had been in the familiarization phase in which children had approached her freely. The demands of the note-taking procedure meant there was little opportunity to easily respond to a child's request, even just to redirect the child away from the researcher.

CRIT: Maintaining accuracy and minimizing stress in the classroom were both seen to be compromised by this technique.

MOD-REV: Combined with observations on lack of intrusiveness of videotaping, the proportions of audio and video recording were adjusted to obtain equal numbers of both types.

Videorecording

PP: Recording interaction - focus camera on the teacher moving around the room as necessary to record interaction between teacher and children.

OBS: The camera's zoom feature was adjusted by a pair of large switches that were part of the finger holding pattern for the camera. They responded to finger pressure zooming in or out until pressure was released. These were found to be very easy to operate. The zoom feature permitted much better recording of nonverbal details from a distance.

CRIT: More accurate recordings could be made with the zoom feature.

Recording should not interfere adversely with the learning environment.

MOD-REV: As the researcher became more adept with this recording process, the zoom feature was used to adjust the focus of the lens to obtain more accurate close-up information of facial expression, gaze direction, and other nonvocal information without moving in closer to the teacher and child.

MP: Recording interaction - defined as above

OBS: As the primary source of the audio information came from the audiorecorder worn by the teacher, verbal notes could be made onto the audiotrack of the video recording while taping.

CRIT: Recording should be as complete as possible.

MOD: This procedure was used to record information seen in another part of the room, ideas that occurred and would normally have been jotted down, or and technical problems with the session could be dubbed onto the videorecording sound track.

MP: Recording interaction - defined as above

OBS: Recording of the initiation of some episodes was incomplete since they began beyond the camera's viewing field. Because most taping was done with a relatively wide viewing field, only using the zoom feature occasionally,

directing of the camera often needed little adjustment and it was possible to hold the camera at a distance of four to five centimetres from the eye keeping both eyes open. Also it was found that at the recording distance, there was a relatively broad field of view with the teacher and child in the centre. It was possible when scanning the room to identify a child approaching the teacher, and shift the camera angle to maintain the current interaction at one side of the field and pick up the approaching child at the other side of the field permitting the taping of the initiating of an episode over a distance. This approach also permitted the researcher to blend into ongoing activities better as she could make eye contact with children or some other nonverbal gesture, and sometimes answer questions or make casual comments to them. It also allowed the researcher to collect other information such as a child's compliance with a teacher's request or a child's checking on a teacher's availability before attempting to initiate an interaction. This information could be added as verbal notes onto the audiotrack and added to the background context for preceding or subsequent episodes.

More accurate recordings could be made using this approach. It also was seen as less intrusive than recording with one eye on the viewfinder and the other closed.

CRIT: Recording should be as complete as possible and should not interfere adversely with the learning environment.

MOD: This approach was adopted as a standard procedure.

MP: Recording interaction - defined as above

OBS: As a number of episodes occurred over a distance and as interactions often began at a distance and had a final component at a distance, the recording position that became was most advantageous to pick up the most complete record of interactions was at a distance. Because the direction in which these more distance aspects of interactions occurred was unpredictable, it became evident that positioning the camera around the perimeter of the classroom with no one behind was best. From there the zoom lens could be used to focus more closely on an exchange as necessary. At the same time, it kept the researcher out of the way of most ongoing class activities. This positioning provided the optimal position for accurate recordings. It also minimized intrusiveness.

CRIT: Recording should be as complete as possible and not interfere with the learning environment.

MOD-ADD: The standard procedure for videotaping used positioning around the perimeter of the classrooms.

MP: Recording interaction - defined as above

OBS: Indicators for record, date and time were all displayed in the camera viewfinder. With the frequent movement in the process it was easy to touch and change camera operations but information in the viewfinder provided

instant feedback unlike with the audiodeck, and connections could be made instantly. No malfunction of the videorecording process was sustained long enough to interfere with recording.

CRIT: The loss of recording sessions would have made obtaining a systematic sample more difficult. It would also have made the research process more inefficient and might have been frustrating to the teachers.

MOD-POT:

Comparing Audio And Video Recordings

PP: Video recording was limited to every fourth tape as it was expected that this would be a more intrusive and complex technique, and its use should be minimized.

OBS: Initially, videorecording was an uncomfortable process for the researcher. However, once both procedures were refined, videorecording was much easier than the audiorecording procedure. After the first two recordings it was evident from the children's lack of interest in the process and from teacher's comments that this technique was not as intrusive as expected.

CRIT: The unexpected lack of intrusiveness of videorecording, ease of the process and need for a systematic sample meant the original schedule could be revised as long as teachers were agreeable given the criterion for teacher involvement with the research process.

MOD-REV: After consultation with the teacher, the recording schedule was changed to provide approximately equal numbers of video and audio recordings.

Processes Preceding or Accompanying Recording

NPP: Role of the researcher during data recording.

OBS: If the researcher allotted additional time to the data recording schedule, many opportunities were available to interact with the teacher and children.

CRIT: The study should be as useful as possible for the teacher and class.

Prolonged time in the context and multiple opportunities for observation in the context were desirable.

MOD-ADD: The researcher developed a multifaceted role extending beyond that of a researcher. This included:

1. She acted as a resource person for the teachers, for example, bringing materials such as new language arts publications, children's literature, and materials she had developed for primary math for teachers to use.
2. She carried information and resources back and forth between two of the teachers.
3. She provided information and advice about programs and courses in which two of the teachers were registered at the university.
4. She expressed an interest in a broad range of ongoing issues and events in the schools including contract negotiations, budget and staffing difficulties, district and school-level administrative decisions, as well as concern for children other

than the focus children and children in other classes. Taking an approach of this kind meant finding opportunities to observe and understand ongoing issues as well as to express an interest and concern. Opportunities were provided in several ways. She always tried to arrive for a session before the children entered the school. This allowed her to spend time in the staff rooms and talk with principals and other staff members, as well as with the teachers. She almost always remained in the classroom after taping was completed until after the children left. Often this involved staying in the class for about 15-20 minutes before dismissal in which time she participated in class activities in various ways, assisted individual children, and sometimes supervised the class while the teacher left the room. She also helped the teacher with any clean up necessary after children left.

NPP: Daily management of recording equipment

OBS: A collection of early observations related to the daily use of the equipment. All pieces of equipment were essential and no substitutes were available in the schools and there were a number of items in the two sets of equipment. Various problems could arise if equipment was not properly maintained, for example, one session early in the process was eliminated because the video battery pack had not been fully charged probably because the refresh cycle had been missed. Confusion could easily arise when working with video and audio tapes as to their content since it is not visible. Given that sessions were often on consecutive days and sometimes more than one per day, and the number of pieces of equipment, informal procedures for maintaining equipment were not reliable.

CRIT: The loss of recording sessions would have made obtaining a systematic sample more difficult. It would also have made the research process more inefficient and might have been frustrating to the teachers.

MOD-ADD: A set of daily routines was developed to ensure that all equipment was ready for use. These were:

1. Both audio and video equipment were portable and dependent on batteries for operation. Immediately after a recording session all batteries were recharged. The audio batteries required three hours for recharging and typically one set could be recharged in the evening and the other over night. Several containers marked charged and uncharged were used to help identify the state of the pairs of batteries. Each pair of batteries was kept as a set and not mixed as recommended by the manufacturer.
2. The video battery pack required special attention. It needed to go through a refresh cycle after every five recharges, and a record of the recharge and refresh cycles was kept. The total time required for both cycles was about three hours and so could easily be done overnight. Also, the charge on the battery pack did not hold for more than several days and so needed to be fully charged the day before a scheduled session.
3. The videorecordings were made onto the small camcorder cartridges and had to be dubbed onto the standard VHS tapes. The camcorder

functioned as a playback unit and was connected to the VCR to record the videotapes. Taping of most sessions required two camcorder cartridges, and the second one had to be dubbed onto the VHS tape to follow immediately the recording from the first cartridge. Otherwise, when viewing at a later date when there would be likely little recollection of details of a specific recording session, it might be thought that the session was completed at the end of the section from the first cartridge. As the VCR continues to tape even though the dubbing is completed, the tape must either be rewound to find the appropriate place, or else taping must be monitored so that the VCR is stopped at the end of the dubbing from the first cartridge. As sessions were approximately 45 minutes, and the VHS tape was 120 minutes, two sessions could be recorded on each VHS tape, economizing on the amount of videotape required. However, data from the three classrooms was not mixed and the two sessions on the videotapes were subsequent sessions in the same classroom. 4. To guard against loss of data the tabs on tapes were removed immediately following taping. On audiotapes if only one side had been taped, it was necessary to check that only the tab for that side was removed. Otherwise when attempting to record the next session on the other side, no recording would be made. With videotapes this could not be done until two sessions had been recorded onto the tape. 5. Another safeguard against data loss was immediate duplicating of all tapes. It was found that this process needed to be done immediately or else confusion could easily develop as after several days it was not easy to recall whether a tape had been duplicated. Duplicating audiotapes was done on one of two stereo cassette recorders, one a Sanyo and one a Sony. These were double deck recorders with high speed dubbing functions and the two sides of each deck were labelled as 'Original' or 'Duplicate'. Before beginning duplication, a double check for correct tape and correct side was made for both tapes and an aural check to ensure taping was happening was done before turning down the audio function. These procedures were designed to minimize mistakes in this duplication process, and loss of time which was important on days where a number of tapes had been made with each side requiring about ten minutes of recording time. Obtaining a second VCR would have been ideal. However, only one was available. Duplication of videotapes required making a second dubbing from the original cartridges onto a second tape. 6. Another set of procedures that were developed involved labelling tapes. If not done the same day, considerable time was required to ensure they were properly identified. Colour coding was used for the three classes for labelling the tapes as well as for all information on data recording in the three classes. Each class was given a code using letters representing the school's name and each session in which recording was attempted was numbered. (Sessions which had to be cancelled were not numbered.) Tapes were all labelled in the appropriate colour, with the school code, the session number and the date. Duplicate tapes were also marked 'Duplicate'. Once duplicated the session number on

the original tapes was circled. Tapes were stored in separate boxes for each school, again marked with the school code. Duplicate tapes were taken daily to an office in the university and stored in a locked filing cabinet. 7. Information on the data sessions recorded was entered immediately into the data records. This included entering information into the master schedules as to time block, day, and subject area that had been recorded as well as type of recordings made. Duplication was also recorded here. Problems with the data recording were also recorded such that some sessions were entered as 'Did Not Record'. Other additional notes from the day's taping were made in the research notebook. 8. The last procedures developed were the preparing and packing of equipment for the next day's taping. The video equipment for each day's recordings consisted of the camcorder, four cartridges with all previous recording on them taped and duplicated, and the charged battery pack. It had its own carrying case with compartments for the different pieces of equipment. Audio equipment for a day's recordings consisted of the deck, two sets of charged batteries, the stereo mike, the earphones, and a number of tapes with the blank sides labelled with blank labels. It was quickly evident that the number of pieces as well as their small size and apparent fragility made a carrying case for the audio equipment desirable also. A small leather bag with a shoulder strap and several compartments was used for this purpose. A checklist for both sets of equipment was made and checked as the two cases were packed with the necessary equipment. This checklist also included the binder in which field notes were taken for the audiotaping, and the master schedules and research notebook.

Appendix O
Modifications To Procedures For Describing Dyadic Classroom Discourse -
Transcription

Note. The foillowing abbreviations are used in this Appendix: PP- Preliminary Procedure; NPP-No preliminary procedures; OBS-Observation; CRIT-Criteria; MOD-Modification; POT-potential modification; MTD-maintained process; REV-Revised procedures; ADD-New procedure; EXC-Exclude procedures; A-audio recording; AV-videorecording; OT-Oldtown School; MT-Middletown School; NT-Newtown School; AUTH - Authenticity; and PRAC- Practicality.

Decisions about the normal speech of the speaker and context were made subjectively by the researcher.

Unless indicated by the number of an episode placed in brackets before the observation, various episodes in the transcript were used to make the modification.

Criteria in this appendix are only authenticity and practicality. They are cited in parentheses at the end of each observation where modifications are to be made.

MT #1/A

Criteria

PP: Criteria for accuracy and completeness and for logistical factors

OBS: Decision making using these criteria was not clear enough

MOD-REV: Definitions were clarified according to Edwards' (1993) concepts of authenticity and practicality. Edwards defined authenticity as attempting to "preserve the information needed by the researcher in a manner which is true to the nature of the interaction itself" (p. 4). He defined practicality as transcript conventions that are "practical with respect to the way the data are to be managed and analyzed, for example, easy to read, apply to new data sets, and expand if needed for other purposes" (p. 4).

Context

PP: Date, session #, school/class identification - as title of transcript

OBS: Taping method needed to be identified. (PRAC)

MOD-REV: The title included taping method.

PP: Real time -inserted throughout transcript in gloss

OBS:

MOD-MTD:

PP: Speech with all children between episodes - in gloss

OBS: Gloss and speech needed to be easily discriminated to provide for fluent reading of transcript. (PRAC)

MOD-REV: Gloss was coded by Chicago 12 font and speech as New York 12 font.

PP: Participants - not defined explicitly but implicit and assumed that participants in the sessions would only include the teacher and children in the class

OBS: (11) Other participants in the classroom were identified. (AUTH)

MOD-ADD: Context was defined as including participants other than the teacher and class and coded in gloss if not evident in the text.

Discourse Structures

PP: Episodes - the basic unit defined as a self-contained interactive exchange of uninterrupted speech between a teacher and one child and coded in New York 12 font

OBS: Episodes could begin within contextual activity framing the episode although the precise relationship to meaning of the episode cannot be certain. The activity could include verbal content with another child as well as nonverbal content. (AUTH)

MOD-REV: Definition of an episode included preceding and following activity framing the episode that possibly contributes to the meaning of the episode for either participant and was transcribed in gloss.

MP: Episodes - defined as above

OBS: Distinguishing the onset and termination of each episode was difficult when reading the transcript. (PRAC)

MOD-REV: Each episode was transcribed in the left margin by bracketing and numbering it.

PP: Onset Patterns- not defined explicitly but implicit and assumed that an onset of an episode was a 2 part sequence with the addressee responding immediately to the addressor

OBS:

MOD-MTD:

PP: Onset Patterns - defined as above

OBS: (1) Some attempts to begin an episode received no response. (AUTH)

MOD-REV: Onset patterns included both immediate response and no response types.

PP: Turn Patterns - each episode organized as alternating turns with each turn defined as the speech of one participant and transcribed in a vertical

spatial arrangement with initials of speaker flush left followed by tab followed by speech.

OBS:

MOD-MTD:

PP: Turn Patterns - interruptions defined as a speaker taking a turn before a previous speaker's turn was complete and transcribed by setting interruption directly beneath the point of interruption and not flush left on a new line

OBS:

MOD-MTD:

MP: Episodes - defined as above

OBS: (7) Interruptions of episodes could be attempted from outside a dyadic episode. They might not receive an immediate response but a delayed one once the episode was completed. (AUTH)

MOD-REV: Interruptions could be from outside the dyad. They could be of a delayed response type.

PP: Segments within turns -sentence-like and ends defined by syntax, falling intonation, and enough time for a breath and transcribed by a double period

OBS: Periods were often faint on a print-out, and had meaning in conventional usage that might have conflicted with meaning in a transcript. (PRAC)

MOD-REV: Use of double forwards slash at the end of a segment was replaced by a double period.

PP: Segments within turns -phrase-like and ends defined by syntax, rising intonation, and less time than following a sentence-like segment and transcribed by a single period

OBS: Periods were often faint on a print-out, and had meaning in conventional usage that might have conflicted with meaning in a transcript. (PRAC)

MOD-REV: Use of single forwards slash at the end of segment was replaced by a single period.

MP: Turn Patterns - end of turns defined by syntax, falling intonation, and longer time following than after sentence-like segments and transcribed by three periods

OBS: Spatial arrangement indicated end of turn and periods were faint in print-out and confusing due to conventional usage. (PRAC)

MOD-REV: End of turn marking was omitted and only spatial arrangement of the discourse was used to indicate the end of turns.

Verbal Elements

PP: Verbal content -all verbal content including incomplete words, morphemes that are not standard English, and single phonemes transcribed in conventional English spelling.

OBS:

MOD-MTD:

PP: Unintelligible content located in turn and transcribed as empty parentheses

OBS:

MOD-MTD:

NPP: Language re language

OBS: (7, 10, 13, & 19) Words spelled or letters named occurred.(AUTH)

MOD-ADD: Spoken letter names were transcribed as upper case letters with space in between letters of words.

PP: Repetition of a consonant - transcribed by repeated typing of letter

OBS:

MOD-MTD:

NPP: Phonemes for letters

OBS: (7) Phonemes for letters were sometimes pronounced in isolation.

They needed to be transcribed differently. (AUTH & PRAC)

MOD-ADD: They were transcribed as inside single quotations.

Nonverbal Elements

PP: Volume - markedly different from normal and transcribed as note in italics following speech

OBS:

MOD-MTD:

PP: Vocalizations - laughing, chuckling, throat clearing, giggling and transcribed as note in italics at location in turn

OBS:

MOD-MTD:

PP: Intonation - transcribed as intonation curves

OBS: Transcribing required extensive amounts of time and also made transcripts highly complex and difficult to read. (PRAC)

MOD-EXC: These structures were not to be transcribed in the early sessions.

Nonvocal Elements

PP: Actions accompanying episodes - defined as physical and nonvocal and transcribed in gloss

OBS:
MOD-MTD

MT #2/A

Context

MP: Speech between episodes -defined as above
OBS: Recreating context between episodes was better and easier with actions included. (AUTH & PRAC)
MOD-REV: Actions and speech were transcribed in gloss

Discourse Structures

MP: Episodes - defined as above
OBS: (2 & 3) Interruptions of another unit of discourse if focused on one speaker become new dyadic episodes even if there was no apparent response as a lack of response can be considered to be a response. (AUTH)
MOD-REV: Interruptions were defined as a type of episode.

PP: Episodes - not defined explicitly but implicit and assumed that initiation of an episode was clearly defined
OBS: (4) An episode could begin within an episode with another speaker and not have a clear point of initiation of its own (AUTH)
MOD-REV: Relationships between episodes could be of a linked type.

PP: Episodes - not defined explicitly but implicit and assumed that episodes are discrete units independent of one another
OBS: (5-6) An episode could be a response to a previous episode with another child (AUTH)
MOD-REV: Relationships between episodes could be of a contingent type.

PP: Onset Patterns - defined as above
OBS: (3 & 5) Onset could be by speech and/or action. (AUTH)
MOD-REV: Onset patterns could be by either speech and/or action

PP: Turn Patterns - time between turns can be longer than normal and transcribed by four periods
OBS: Periods were a confusing code as described above. (PRAC)
MOD-REV: Delayed turnovers were transcribed by four forwards slashes.

MP: Turn Patterns - defined as above
OBS: With no convention for regular time between turns, transcription of delayed turnovers could be interpreted as marking the end of a turn. (PRAC)
MOD-REV: End of a turn was transcribed by a triple forwards slash.

MP: Turn Patterns- defined as above

OBS: (2) Episodes occurred with only one turn by one speaker which also acted to terminate the episode with no apparent response from listener but the speaker apparently assumed that the message was heard and would be responded to after termination. (AUTH)

MOD-REV: Turn patterns could include an external turn that occurred after other features of the episode were finished.

PP: Termination Patterns - not defined explicitly but implicit and assumed that termination of an episode would occur in a 2 turn sequence with the second turn being an immediate response to the terminating move in the first turn.

OBS:

MOD-MTD:

PP: Termination Patterns - defined as above

OBS: (4) Terminating an episode could involve a 3 turn sequence with termination started, response made, and then a response to the response. (AUTH)

MOD-REV: Termination patterns could have a recursive phase with one response eliciting another.

MP: Termination Patterns - defined as above

OBS: (6) Termination could occur with no explicit speech leading it and followed by a physical shift away from the dyad by at least one of the 2 speakers. (AUTH)

MOD-REV: Termination patterns included a simple type with no explicit terminating direction.

Verbal Elements

NPP: Terms of address

OBS: (1) Less formal forms of children's names were sometimes used. (AUTH)

MOD-ADD: Less formal forms of names were transcribed as initials of name in calligraphy font.

PP: Elongation of a vowel - defined as markedly different from normal and transcribed by repeated typing of letter

OBS: (5) Repeated typing of the letter did not readily translate into sound of vowel elongation. (PRAC)

MOD-REV: A double colon after the letters was used to indicate vowel elongation.

Nonverbal Elements

PP: Volume - defined as above

OBS: Volume could be transcribed by changing font size and using size 14 font for increased volume and size 10 font for lower volume. The code visually suggested the meaning and could be transcribed into the speech rather than placed after it. (PRAC & AUTH)

MOD-REV: Transcription of volume was by font size.

Nonvocal Elements

PP: Gaze direction - transcribed in gloss

OBS:

MOD-MTD:

PP: Hand movements - defined as giving or showing something, pointing, or raising hands, and transcribed in gloss

OBS: (8) Hands on shoulders were used to direct movement. (AUTH)

MOD-ADD: Added to hand movements were directive forms.

OT #1/A

Discourse Structures

MP: Turn Patterns - defined as above

OBS: (9) Where a turn was indicated to have ended providing opportunity for a turn by the other participant, this opportunity might not be taken. There was no vocal or nonvocal evidence of a response. The lack of the turn might have been because the other participant was not able to hear or did not want to respond and as such it might be meaningful. (AUTH)

MOD-REV: A turn pattern could include empty turns

MP: Episodes- defined as above

OBS: (2) Some episodes consisted only of empty turns for one participant. (See Turn Patterns below for description of an empty turn.) (AUTH)

MOD-REV: Episodes could be of a single speaker empty turn type.

MP: Segments - defined as above

OBS: Cloze type segments occurred. They were defined through incomplete syntax, rising final tone, extended final phoneme, and usually eye contact. (AUTH)

MOD-ADD: Cloze type segments were types of segments and transcribed by a double dash following the last phoneme.

NT #1/A

Verbal Elements

PP: Unintelligible content - defined as above

OBS: (24) Sometimes although voices were not clearly picked up in taping and there was omission of content, it was possible to understand the gist but not every word. (AUTH)

MOD-REV: Unintelligible content could include a paraphrase within the parentheses.

NT #2/A

Discourse Structures

MP: Episodes - defined as above

OBS: (25 & 29) A later episode with a child could be a continuation of a previous one. (AUTH)

MOD-REV: Relationships between episodes could be of a compound type.

MP: Termination patterns - defined as above

OBS: The response by one participant to the move by the other to terminate an episode could be delayed. (AUTH)

MOD-REV: Termination patterns included a delayed response type.

Verbal Elements

NPP: Elongation of final consonants

OBS: (5) Consonants such as /sh/ or /th/ at end of words could be extended. (AUTH)

MOD-ADD: Extended consonants at end of words were transcribed with the double colon as for extended vowels.

Nonverbal Elements

PP: Time between words - less than normal transcribed as a hyphen joining the words

OBS: (4) A hyphen was understood as often used to indicate a pause in conventional texts (PRAC)

MOD-REV: An equals sign was used to transcribe no time between words.

NT #3/A

Discourse Structures

MP: Episodes - defined as above

OBS: (26) An episode could be ended and then restarted. (AUTH)

MOD-REV: Relationships between episodes could be of a renewed type.

MP: Onset Patterns - defined as above

OBS: (31) There could be a repeat of the structures used to begin an episode based on observation of the response. (AUTH)

MOD-REV: Onset patterns could have a recursive phase.

MP: Episodes - defined as above

OBS: (24) An episode could be interrupted and could result in its termination. (AUTH)

MOD-REV: Interrupted episodes could be terminated.

PP: Location- not explicitly defined but implicit and assumed that in an episode the 2 participants are within the immediate proximity of one another.

OBS: (8)An episode could occur across a distance. (AUTH)

MOD-REV: The location of an episode could be over a distance.

MP: Episodes- defined as above

OBS: (17)An interrupted episode might only result in a temporary suspension of the episode which was continued after the interruption.

(AUTH)

MOD-REV: Interrupted episodes could be terminated or sustained.

MP: Turn Patterns - interruptions defined as above

OBS: (25)An episode could be interrupted by one of the 2 partners of the dyad speaking to a third party outside the dyad. (AUTH)

MOD-REV: Interrupted episodes could be by insiders and resemble asides.

MP: Episodes - interruptions defined as above

OBS: (17) Interruptions from outside the dyad could receive an immediate response. (AUTH)

MOD-REV: Interrupted episodes could be of an immediate response type.

MP: Termination Patterns - defined as above

OBS: (1-2)There could be no response to a terminating move (AUTH)

MOD-REV: The termination pattern could consist of only one turn.

Verbal Elements

MP: Terms of address - defined as above

OBS: A child could be addressed using both names. (AUTH)

MOD-REV: Use of both names was transcribed in gloss.

PP: Repetition of a consonant - defined as above

OBS: (12)At the end of a word a consonant sound could be extended but not really repeated. (AUTH)

MOD-REV: Extended consonant sounds at the end of words were transcribed using the double colon as for extended vowels.

Nonverbal Elements

PP: Vocalizations - defined as above

OBS: The Los Angeles font with its curved lines seemed a better visual match to these vocalizations and freed up the use of italics for accelerated speech.

(PRAC)

MOD-REV: Vocalizations were transcribed in a note in Los Angeles font at the location in turn.

PP: Accelerated speech - transcribed by note in italics following speech
 OBS: Accuracy was not good since the note follows the speech and it was difficult to identify what was accelerated. Italics as a code was now free and tilted letters can suggest speed. (PRAC)
 MOD-REV: Italics was used to indicate increased speed of speech.

MP: Time between words - defined as above
 OBS: (2) Pauses other than normal sometimes occurred between words within segments. (AUTH)
 MOD-ADD: Pauses within segments were transcribed with 3 periods.

Nonvocal Elements

PP: Proximity - transcribed in gloss
 OBS: Proximity had a normal range but an episode could occur with more space between participants than was normal and also at mid range which was between normal and far. (AUTH)
 MOD-REV: Proximity was designated as CLOSE for the normal range and FAR for a greater distance than normal FAR was defined as enough distance for another participant to enter the space to begin an episode. MID was used to designate the mid range. Designations were transcribed in gloss in upper case.

OT #5/A

Context

MP: Defined as above
 OBS: A role of the speaker that was different from the normal role was identified. (AUTH)
 MOD-ADD: Role of the speaker was added to the definition of context and transcribed in gloss.

Discourse Structures

MP: Onset Patterns - defined as above
 OBS: (1-2-3) Once structures were used to begin an episode there could be a delay before the other participant responded and in which the initiator did not follow the recursive route and repeat structures. (AUTH)
 MOD-REV: Onset patterns could have a delayed response.

PP: Topic- not explicitly defined but assumed that topics in episodes would be single topics
 OBS: (3)A topic shift could occur within an episode. (AUTH)
 MOD-REV: The topic of an episode could shift.

MP: Termination Patterns - defined as above

OBS: (1) An interruption could lead to the termination of an episode.
(AUTH)

MOD-REV: Terminations patterns could begin with an interruption.

OT #6/A

Techniques

MP: Identification of transcripts - defined in context as above

OBS: Working with multiple transcripts required more detailed labelling.
(PRAC)

MOD-ADD: Headers were created to be printed on each page for each of the transcripts identifying school, session #, taping method, and date.

Discourse Structures

MP: Location- defined as above

OBS: (17)They could continue over a shift in location. (AUTH)

MOD-REV: Shifts in location of the participants could occur during an episode.

Verbal Elements

MP: Language re language

OBS: Reading in the transcript resembled direct speech. Transcription that was different from other verbal content would clarify transcript reading.
(PRAC)

MOD-ADD: Words read were transcribed in upper case.

Nonverbal Elements

MP: Intonation - defined as above

OBS: (27)Intonation curves would add too much detail to transcripts making them difficult to read but some information about voice modulation seemed desirable. However, teachers could often recreate their own or children's intonation patterns and so this information was being used in the transcript reading although it was not in the transcript. (AUTH & PRAC)

MOD-EXC: Intonation was not to be transcribed. In the post-study interview, teachers would be asked about the effects of including intonation curves in the transcripts. (They all indicated that it would have made the transcripts too complicated, and also that it would have been too difficult to interpret.)

OT #7/A

Techniques

PP: Equipment - for transcribing was one of two double deck tape recorders.

OBS: A transcriber was tried which made transcription easier and faster, but provided poorer reproduction of the signal and one of the other decks was needed to transcribe certain sections. Also the transcriber was borrowed and

could only be obtained sporadically which did not match the transcription needs of the study. (PRAC)

MOD-MTD:

Nonverbal Elements

MP: Vocalizations -defined as above

OBS: (4) Singing occurred. (AUTH)

MOD-REV: Singing was transcribed in note in Los Angeles font at location in turn.

MP: Vocalizations-defined as above

OBS: (5) Groans occurred. (AUTH)

MOD-REV: Groans were transcribed in note in Los Angeles font.

NPP: Breathing

OBS: (7) Audible inbreaths occurred. (AUTH)

MOD-ADD: Audible inbreaths were transcribed as HH at location in turn.

MT #3/A

Verbal Elements

MP: Terms of address - defined as above

OBS: Calligraphy font did not seem easy to translate in reading transcripts and also some names were normally less formal and then the more formal forms could be used. (PRAC)

MOD-REV: When a more formal form was used it was transcribed by the child's name followed by an up arrow. When a less formal form was used, the child's name followed by a down arrow was used.

Nonverbal Elements

MP: Breathing - defined as above

OBS: (12) Incidence of an audible outbreath like a sigh was identified. (AUTH)

MOD-REV: Audible outbreaths were transcribed as hhh at the location in the turn.

MP: Vocalizations - defined as above

OBS: (11) Other idiosyncratic vocalizations occurred such as /urrgh::/. (AUTH)

MOD-REV: These were transcribed as closely as possible to conventional English spelling.

Nonvocal Elements

MP: Proximity - defined as above

OBS: Proximity also included orientation to an object. (AUTH)

MOD-REV: Recording of proximity included orientation to objects.

OT # 8/AV

Discourse Structures

PP: Onset Patterns - not defined explicitly but implicit and assumed that the second part of the pattern would be the speech of the addressee

OBS: (7 & 15)The response to an initiating of an episode could be an action or a combination of speech and action. (AUTH)

MOD-REV: The second part of onset patterns could be speech and/or action.

Nonvocal Elements

MP: Hand Movements - defined as above

OBS: (8)Tapping on the arm was used to get attention. (AUTH)

MOD-REV: Tapping was transcribed in gloss.

PP: Hand Movements - presenting of objects for the other to see and transcribed in gloss

OBS:

MOD-MTD:

PP: Eye contact - transcribed in gloss

OBS:

MOD-MTD:

PP: Facial expression - smile transcribed in gloss

OBS:

MOD-MTD:

PP: Hand Movements - pointing transcribed in gloss

OBS:

MOD-MTD:

MP: Hand Movements - defined as above

OBS: (10)Similar to pointing was tapping a finger on a book etc. (AUTH)

MOD-REV: Pointing and finger tapping were both hand movements transcribed in gloss.

PP: Hand movements - raised hands transcribed in gloss

OBS:

MOD-MTD:

NT #4/AV

Techniques

NPP: Transcribing videorecordings

OBS: The videotaped sessions required a technique for coordinating information found on the 2 types of tapes. (PRAC)

MOD-ADD: (The double deck unit was to the right of the computer and the VCR remote control to the left.) The videotape ran about a second ahead of the audiotape. Cues for the next episode were identified on the videotape and both tapes stopped simultaneously. Both tapes were then used to transcribe the episode. Sometimes audio information that was not clear on the audiorecording could be obtained from the audiotrack of the videotape.

Discourse Structures

MP: Location-defined as above

OBS: (3)An episode could occur while one of the participants was moving. (AUTH)

MOD-REV: Participants could be moving throughout an episode.

MT #5/A

Discourse Structures

PP: Episodes - Not explicitly defined but implicit and assumed that episodes occur as discrete units in a contiguous sequence

OBS: (2-3-4)Episodes could overlap each other with one speaker maintaining several independent episodes simultaneously. (AUTH)

MOD-REV: Relationships between episodes could be an overlapping type.

MP: Turn Patterns - Defined as above

OBS: (10)Turn patterns occurred to differing degrees in scripts of alternating pairs of turns between the 2 participants such as question-answer pairs or statement-confirmation pairs. (AUTH)

MOD-REV: Scripted turn patterns were sometimes composed of pairs of turns of types such as question-answer and statement-confirmation types.

MP: Turns and segments of turns - defined as above

OBS: (6)One element of the combination of features defining ends of turns and segments could be varied making the definition of the end ambiguous. (AUTH)

MOD-REV: Ambiguous ends were transcribed with a question mark instead of the forward slashes.

PP: Terminating Patterns - not explicitly defined but assumed that either or both speech and actions can be the terminating move

OBS:

MOD-MTD:

Nonvocal Elements

PP: Facial Expressions - smile - defined as above

OBS: It was more accurate to place transcription of smiles close to the accompanying speech. (AUTH)

MOD-REV: Smiles were transcribed in Los Angeles font following speech.

MT #6/AV

Discourse Structures

MP: Onset Patterns defined as above

OBS: (5)The first response to onset of an episode may be followed by a second one that was not redundant but different from the first. (AUTH)

MOD-REV: The recursive phase could be a second or different response to the initiating structure.

PP: Topic- not defined explicitly but implicit and assumed that topics can be developed or extended within an episode

OBS: (4)

MOD-MTD:

Nonvocal Elements

PP: Head Movement - nods transcribed in gloss

OBS:

MOD-MTD:

MP: Hand Movements - defined as above

OBS: (5 & 3)Non-directive touching on head and shoulder was observed. (AUTH)

MOD-REV: Hand movements included touches that were brief and non-directive and were transcribed in gloss.

MT # 8/A

Nonvocal Elements

MP: Hand Movements - defined as above

OBS: (12)An arm could be put out to prevent a movement. (AUTH)

MOD-REV: Hand movements included preventing movements transcribed in gloss.

NT #5/A

OT #9/A

Context

PP: Real time - defined as above

OBS: Entries were not systematic creating difficulty in reading transcripts and recreating the context. (AUTH & PRAC)

MOD-ADD: Real time was entered at 5 minute intervals

Nonverbal Elements

NPP: Articulation

OBS: Clearer than normal articulation occurred. (AUTH)

MOD-ADD: Articulation other than normal was transcribed in gloss.

OT #10/AV

Verbal

MP: Language re language - defined as above

OBS: Transcription of reading in upper case could be confused with initials of participants. (PRAC)

MOD-REV: Reading was transcribed in bold font.

Nonverbal Elements

NPP: Tone of voice

OBS: Affective information was evident in the tone of voice and could be subjectively identified. It could be signalled in the transcript by a note in San Francisco font. The curving base line of this font visually suggested voice modulation. (AUTH)

MOD-REV: Voice modulation other than normal was subjectively identified and transcribed in note in San Francisco font following speech.

MP: Tone of voice - defined as above

OBS: This transcription was checked with the teachers as they read the transcripts. Teachers commented on value of these judgements in transcripts. (AUTH)

MOD-MTD:

Nonvocal Elements

PP: Head movements - defined as above

OBS: Another head movement was head shaking. (AUTH)

MOD-REV: Head movements included nods and head shaking and were transcribed in gloss.

MP: Head movements - defined as above

OBS: A shrug was a head movement combined with shoulder movements. (AUTH)

MOD-REV: Head movements included shrugs.

MP: Hand movements - defined as above

OBS: (7 & 23) Other hand movements involved various ways of demonstrating the topic of the turn. (AUTH)

MOD-REV: Hand movements included gestures defined as not having a clear referent or being a predefined signal.

MP: Hand Movements - defined as above
 OBS: (17)Contact could be made by putting an arm around the shoulders.
 (AUTH)
 MOD-REV: Hand movements included holding around shoulders.

MP: Facial expression - defined as above
 OBS: (5, 13, & 17)Other facial expressions could be identified subjectively.
 They appeared significant to recreating the context. (AUTH)
 MOD-REV: Subjectively identified facial expressions were transcribed in
 gloss.

MT #11/AV

MT #12/A

OT #12/A

Discourse Structures

MP: Termination patterns - defined as above
 OBS: (5)After both parties appeared to have accepted termination one could
 add an additional comment but with no sign of renewal of the episode.
 (AUTH)
 MOD-REV: Termination patterns could include an added comment
 resembling a postscript.

NT #7/AV

Nonvocal Elements

MP: Proximity - defined as above
 OBS: Episodes could occur over a greater than FAR range. (AUTH)
 MOD-REV: Proximity greater than FAR was transcribed as FARFAR.

MP: Head movements - defined as above
 OBS: ()Another kind of head movement was turning of head. (AUTH)
 MOD-REV: Head movements included head turning.

MT #16/AV

Techniques

PP: Children's names are transcribed by first initial only
 OBS: Too many children had the same first initial often delaying transcript
 reading. (PRAC)
 MOD-REV: Children's names could be used as transcripts were only available
 to the teacher and researcher, and could be changed to pseudonyms at a later
 date.

Discourse Structures

MP: Termination Patterns - defined as above

OBS: (10) In a recursive phase others could begin to enter the discourse and the dyadic discourse could become multiparty but at no distinct point in the pattern. (AUTH)

MOD-REV: Termination patterns could include a gradual shift into multiparty discourse.

Verbal Elements

MP: Language re language - defined as above

OBS: Transcribing reading in bold font could be confused with Chicago font used for gloss. (PRAC)

MOD-REV: Reading was again transcribed in upper case because names of participants were now transcribed using more letters making them clearer.

Nonverbal Elements

MP: Vocalizations - throat clearing

OBS: A code that phonetically approximates this sound was found in another transcription system. (PRAC)

MOD-REV: Throat clears were transcribed as HXM at location in speech.

MP: Vocalizations - throat clearing defined as above

OBS: The code seemed to add unnecessary translation in the reading of the transcript for the teacher. (PRAC)

MOD-EXC: This modification was not retained.

NT #9/AV

NT #11/AV

Discourse Structures

MP: Termination Patterns - defined as above

OBS: (4) The response to one participant's move to terminate the episode could be followed by a continuation of the episode by the other. (AUTH)

MOD-REV: Termination patterns included continuing an episode rather than accepting a move to finish it.

OT #16/AV

MT #17/AV

Nonverbal Elements

MP: Vocalizations - defined as above

OBS: Tongue clicks were identified. (AUTH)

MOD-REV: Tongue clicks were transcribed using a phonetic approximation of STX.

MP: Vocalizations - tongue clicks defined as above

OBS: Transcribing as STX was confusing in reading the transcript. (PRAC)

MOD-REV: Throat clears were transcribed as other vocalizations in gloss.

NT #13/AV

OT #18/AV

Nonverbal Elements

MP: Vocalizations - defined as above

OBS: (11) Coughs occurred. (AUTH)

MOD-REV: Coughs were transcribed as note in Los Angeles font at location in turn.

NT #14/AV

Appendix P
Modifications To Procedures For Describing Dyadic Classroom Discourse -
Coding

Note. Abbreviations used here are: PP-Preliminary Procedure; NPP-No preliminary procedures; OBS-Observation; CRIT-Criteria; MOD-Modification; POT-potential modification; MTD-maintained process; REV-Revised procedures; ADD-New procedure; EXC-Exclude procedures; and NM - No Modification Made.

Phase One

Coding Processes

PP: Coding by the researcher - Each transcript would be transcribed and then coded by the researcher episode by episode for both children's and teacher's language. Coding initially would be for features of intent (referential, social, expressive) and affect (positive, negative, neutral). Codes would be recorded on the coding forms (see Appendix J) which would then be taken to the coding sessions with the teachers. Given the complexity of the process, coding for meaning was to be excluded initially.

OBS: Coding episodes with initial descriptors was difficult.

CRIT: Practicality

MOD-REV: To help the teachers focus in the coding sessions, a set of questions was developed (see Appendix Q for a copy of the questions).

PP: Scheduling coding discussion sessions with teachers - Discussions with the teachers of each transcript were to occur 1-2 days after taping.

OBS: The first discussion sessions with teachers could not be held until several days after recording due to the teachers' schedules.

CRIT: The avoidance of placing undue stress on teachers was considered and also the possibility that the first discussion might be a dry run with the discussion process needing revision.

MOD-REV: The first sessions were 2 -6 days following recording.

MP: Scheduling coding discussion sessions with teachers - defined as above

OBS: Despite the delay, the teachers had no difficulty in recreating the context of the recorded session.

CRIT: Practicality

MOD-REV: It was judged that scheduling of teacher analysis sessions could be more flexible making it easier for both teachers and the researcher.

MP: Coding discussion sessions - The teachers would review the researcher's coding of each transcript and use the questions to add their own codings on the coding forms. The researcher's role in the discussion sessions would be non-judgemental. The sessions should also provide opportunities for

teachers to gain insight into children's and teacher's classroom activities and an opportunity for the researcher to discuss her observations and modifications for both recording and describing methods. As coding proceeded, the researcher would begin to form a network of the concepts being coded in each of the three settings. These networks would be used by the researcher and the teacher as a reference in coding of subsequent sessions. OBS: At the outset of the first sessions, it was judged that the process would be unfamiliar to both the researcher and the teacher, and it might be difficult to record all the teacher's analyses and maintain the role of the researcher.

CRIT: Authenticity

MOD: The preliminary procedures for the sessions were deferred. The first sessions were audiotaped so as the researcher would have more flexibility in handling them. Descriptors for intent and affect were to be taken from the tapes and added to the coding sheets later by the researcher.

MP: Coding discussion sessions - defined as above

OBS: In the first sessions several points were observed: 1. Teachers needed time to read the transcripts and become familiar with transcript conventions. 2. They needed time to become oriented to the questions being asked and to focus their thinking and comments on them. 3. The transcripts provided them an insight into a child in various ways. They were often interested in understanding or explaining why a child had behaved in a particular way. They explained much background context about each child to support their interpretations of their own practices. 4. They reflected extensively on their own practice. 5. The teachers had to be reminded to return to the questions provided by the researcher. 6. Their attention was distributed unevenly over the questions usually focusing on teacher intent which appeared to be of immediate and intense concern to them.

Much time was taken with this process, but much insight was also being recorded. The discussions were open-ended, reflective, and inquiring rather than analytical. They elicited dimensions to the episodes that the researcher had not seen, and also permitted the teacher to explore aspects in the transcripts that were interesting to her. The teachers' discussions of the transcripts included much more insightful and thoughtful material than had been anticipated. They were using the transcripts as a tool to stimulate thinking and understanding of the children and the interactions. The episodes as discussed could not readily be coded with the preliminary descriptors. Discussions also contained much information that seemed likely to be lost by labelling it with a single code. At the same time an array of other descriptors was emerging in the teachers' discussions. Returning to the original set of descriptors appeared pointless. It was also anticipated that trying to use the original descriptors with teachers would be frustrating for them and might reduce the input they could provide to the coding process.

CRIT: The avoidance of placing undue stress on teachers was considered as well as the usefulness of the research to the teacher and authenticity. Given the broad-based definition of language used here, it was assumed that the preliminary features would be very limited in their application, and the purpose of the inductive inquiry process was to generate information, not to constrain it.

MOD-REV: The open-ended discussion format was permitted to proceed and it was decided that several more sessions with each teacher should be conducted the same way until they appeared familiar with the process. Preliminary descriptors were abandoned. The steps for this phase of coding were modified. They were: 1. The researcher transcribed the recordings but did not code them. 2. An open-ended discussion between the researcher and teacher was held and audiotaped using the question set as a guide. 3. Concepts in the discussions were identified using the language of the teacher in the manner of the *in vivo* codes advocated by Lincoln and Guba (1985), and categories of concepts were constructed to form a network. 4. As the terminology used in the discussions could be ambiguous, often necessitating a discussion between teacher and researcher to agree on a meaning, a separate network for each teacher was constructed. 5. The networks were not used in the phase one discussions.

MP: Coding Discussion Sessions - defined as above

OBS: The transcript discussion process required a substantial amount of time and thought, and the time teachers could find for this process was always limited. One was able to use an afternoon prep period, but the other two teachers had to find time in spares and at recess and lunch or after school. Interruptions were a common problem and teachers frequently had other issues they wanted to discuss with the researcher before beginning a transcript discussion. As well, the emerging set of codes was more complex than had been anticipated, often resulting in long discussions of only one episode. Not each episode was always discussed and not each question was always addressed by the teachers. This seemed to be partly related to their focus in reading the transcript which often drifted away from the questions, and also from the focus children. Teachers' limited time and the complexity of the process often deferred the researcher from pursuing the other questions.

CRIT: Ethical considerations for teachers' time, considerations for the applicability of the project, and considerations for the quality of insight in the data were considered.

MOD-REV: Judgements were made constantly on how much to refocus or limit discussions and how much effort to expend to get each question answered. It was not always attempted to get an answer for each question for each episode. It was decided that only the teachers' intentions could be pursued systematically through to the end of the study. Data on children's

intentions and also on affect would be collected but it was expected to be much less comprehensive.

MP: Identifying and tracking concepts and categories - As described above, initial descriptors for features of intent and affect were abandoned. Codes for concepts were to be derived from the teachers' own language and then organized into categories, and then into networks.

OBS: The development of coding from the teachers' language could be relatively easy. For example, one teacher made frequent use of such terms as "reinforce", "routine", and "develop" and these became codes for her. When the same terms were repeated, the episode was easily coded. Other times a decision had to be made about whether a teacher was using terms or phrases that were synonymous with a previously identified code or if the ideas represented a new concept that required a new code. To help differentiate codes used by different teachers, a synonym was sometimes substituted for the teacher's own term if that term had already been used as a code for one of the other teachers. Attempting to listen to the taped discussions, identify codes of intent or affect, and then enter them into the network was a futile procedure requiring frequent recategorization and reorganization. To constantly compare and contrast emerging concepts and categories meant being able to move back and forth within and among discussions, which was time-consuming and conceptually very difficult with only audiotapes. However, it was necessary to return to the sources of each code quickly and easily for comparison purposes and often to recode throughout a set of transcripts.

CRIT: Authenticity and practicality

MOD-ADD: Although very time-consuming, it was decided that it was necessary to transcribe the transcript discussions, although not in the same detail as the classroom discourse. Omitted from discussion transcripts were repetitions, false starts, explanations about transcript conventions or of the study generally, information about children other than the focus children, and all nonverbal and nonvocal information. Context was printed in upper and lower case and comments about intent and affect were printed in upper case.

A software program called Hyperqual (Padilla, 1990) designed for analysis of qualitative data was explored. It was found useful for the purposes of keeping the coding organized, in turn making network construction and revision much easier. A Hyperqual stack was created for each of the 3 sets of transcripts, and the discussion and transcripts entered by episode onto separate cards. Codes for each episode were then added in the coding windows for each card readily permitting a return to the original source of codings as advocated by Tesch (1990) (see Appendix R for a sample of a Hyperqual window). This program also offered a research memos option which replaced the research notebook. The notes from the research notebook

were entered into the memo file. Notes were then made on an ongoing basis as coding proceeded.

Techniques

PP: Roles of theoretical sensitivity and tacit knowledge - Theoretical sensitivity was expected to be used by the researcher, but it was not clear how. Tacit knowledge of the teachers was recognized but there was no preliminary notion of how it would become part of the research process.

OBS: As teachers became more comfortable with the discussion of transcripts, the researcher began using theoretical sensitivity to prompt explanations. She suggested structures or intentions or affective qualities and the teacher considered these. This resulted in teachers drawing on understanding or knowledge that was at first not evident to themselves. It was tacit. Discussions developed between teacher and researcher in which both asked questions and made suggestions until they agreed upon an interpretation for an episode.

CRIT: Given the criterion of authenticity, it could be questioned if the researcher was suggesting the explanations being made by the teachers.

MOD-REV: Theoretical sensitivity was recognized as one way that tacit knowledge was elicited to become part of the coding process. To check on the effect of the researcher's suggestions, in the post study interview, teachers would be asked to comment on the role of the researchers' suggestions. (They all indicated that they had readily stated any disagreements with her.)

PP: Teachers' and researcher's codes- Codes identified by both would be collected even if they differed.

OBS: Repeatedly, in the first 3 analysis sessions, discussion by the teachers incorporated much more information than was available to the researcher. The researcher often modified her interpretation after discussion with the teacher.

CRIT: Authenticity and ethical considerations

REV-MOD: Separate codings by the researcher were not kept as they did not reflect the range of information underlying teachers' interpretations. Also it was considered that teachers might find a collection of interpretations that differed from their own invasive.

Concepts, Categories and Networks Of Intent, Affect, and Meaning

MP: Conceptualizing intent - Preliminary descriptors of intent were not to be used. Instead, from discussion of episodes, in vivo codes would be developed.

OBS: The first descriptors of intent identified in the discussions included both reference to apparent effect of the interaction such "as am I communicating" and "is the child picking up", as well as intended effect such as "to provide clarity".

CRIT: Authenticity

MOD-REV: To focus coding on intended effect, codes for intent were phrased in the infinitive form, for example, to focus.

MP: Conceptualizing intent - defined as above

OBS: From the first discussions, a collection of statements of intent was made. In these, three distinctions were made. The first was a description of what the teacher did (e.g., to reinforce, to direct) and was called teaching tactic. The second described the values or expectations for the child that were the teacher's focus in the exchange (e.g., social knowledge, language knowledge, being helpful, showing initiative). The third described the teacher's intended effect on the child (e.g., to have something happen, to prevent something happening), and was called teaching intent.

CRIT: Authenticity

MOD-REV: The first attempts at categorizing intent differentiated between teaching tactic, teaching intent, and values and expectations.

MP: Conceptualizing intent - defined as above

OBS: Further observations and discussions suggested that a distinction between teaching tactics and teaching intent implied that teaching tactics have no intended effect on the child or are noninteractive. However, professional experience suggested that most if not all of a teacher's activities are oriented in some way towards the children in the class.

CRIT: Authenticity

MOD-REV: From this observation, it was assumed that all teaching strategies should be defined in terms of effects on the child. The term strategy was introduced to encompass tactic and intent. Strategy was defined as "methods, techniques or tactics used in accomplishing a task" (American Psychological Association, 1990). Here it was understood as the tactics the teacher used to accomplish some effect with a child. Effect on the child was seen as a dimension along which to organize strategies. The following categories were developed: Child's Current Activity, Child's Observations, Child's Feelings, Child's Physical Needs, Child's Physical Appearance, Child's Relationship with Teacher, Child's Relationship With Other Children, Child's Attention, Child's Understanding, Child's Next Activity, To Obtain Information From Child, and No Immediate Effect. A No Instructional Purpose category was identified for strategies that did not seem oriented towards children.

The distinction of values and expectations was maintained, but termed knowledge. A curriculum outline developed through professional experience developing curriculum in primary classrooms was used as a reference (see Appendix S). Categories taken from this outline were used to conceptualize and categorize the types of knowledge occurring in the episodes. The categories were: Social Knowledge, Learning Attitudes, Conceptual Knowledge, Language Knowledge, Physical Knowledge, and Content. There were also codes that didn't fit into any of these categories and

these were placed in an Other category. Intent was now considered to be composed of strategy and knowledge, and was identified by a pair of codes, one strategy and one knowledge. However, the two sets of codes were seen as independent. Any strategy might be linked with any knowledge code.

MP: Conceptualizing intent - defined as above

OBS: When coding an episode there was often more than one strategy and knowledge code assigned. However, separating the episode into sections relating to each code was tried and found unsatisfactory as there was no way of knowing what aspect of the episode related only to a particular strategy or knowledge code and what did not.

CRIT: Authenticity

MOD-REV: Multiple codes were assigned to a single episode.

PP: Conceptualizing affect - defined as above

OBS: Some descriptors for affect appeared in the first open-ended discussions but no obvious coding emerged. However, often affect received little attention as teachers focused primarily on intent.

CRIT: Ethical considerations and authenticity were considered.

MOD-REV: Descriptors for affect were collected but sporadically, and it was questioned how comprehensive they were.

PP: Conceptualizing meaning - Meaning was to be coded as direct or indirect and as idiosyncratic or conventional. However, it was not to be included in the coding process initially.

OBS: The researcher could code for meaning after the discussions with the teachers.

CRIT: Ethical considerations meant considering stress of the research process for teachers. Authenticity meant obtaining as complete a record as possible.

MOD-REV: Meaning was coded by the researcher after the discussion sessions and was not included in the discussions, allowing teachers to continue to use all their time to focus on intent. The following clarifications were added. If the intent as described by the teacher was represented literally, it was direct, and if not, indirect. If the combination of structural features and intent could be recognized and accepted as appropriate or correct by other speakers in this context, as judged by the researcher, it was considered conventional, and if not, idiosyncratic. It was understood that excluding meaning from the discussion process might limit its development in the study.

NPP: Conceptualizing context

OBS: Much contextual information was included in the coding discussion sessions. It ranged from a child's family history, to their preschool experiences, to expectations of parents for their children, the patterns of siblings in the family, and the family social, economic, and cultural context.

More immediately, it included the history of the child in that class, previous exchanges with the teacher, the social, emotional, and intellectual development of the child, and the child's role in the classroom. It also frequently focused on the child's communicative competence in various settings.

CRIT: Authenticity

MOD-REV: Collecting this information was seen as important and was not discouraged. It was transcribed into the transcripts of the discussions.

Phase Two

Coding Processes

MP: Coding discussion sessions - defined as above

OBS: After discussions for six of the Middletown and Oldtown transcripts and five of the Newtown transcripts, teachers were providing much less background context and they were finding that episodes with the same child were often very similar and some types of episodes were very similar across children. As well, the language of these discussions was becoming more standardized with certain codes being quickly and easily applied to certain situations. At the same time, the networks were beginning to stabilize with fewer changes.

CRIT: The original procedure for using a given set of codes to guide coding of a subsequent transcript could now be used without the concern for compromising authenticity. The criterion for informational redundancy could be addressed.

MOD-REV: The steps for coding were modified again. They consisted of the following: 1. Templates based on the networks were introduced into the discussions. These were the dimensions of strategy and knowledge as identified in the networks and listing the variants of each as identified for that teacher to date. 2. The teachers and the researcher considered each episode and decided how to code it using the categories and codes of the template. 3. Although the process was no longer as open-ended, it was still taped to provide an account of any discussion. 4. The researcher revised the templates and networks after each discussion. 5. The process continued until informational redundancy was reached.

MP: Coding discussion sessions- defined as above

OBS: Although expected that the coding process using the templates would require considerable time for the teachers at first, and would proceed one session at a time, it was found to be extremely easy for them with only minimal discussion required.

CRIT: Practicality

MOD-REV: Combined with the observation that discussions could be delayed, scheduling of the remaining sessions was collapsed and remaining discussions included two or more transcripts. To provide a check on the

delayed discussion, the last tape recorded would be discussed the following day and teachers asked to comment on the difference between a delayed and an immediate discussion. (These comments indicated that delayed discussion did not interfere overly with discussion of a transcript, although immediate discussion was easier and probably provided more detailed interpretation.)

Concepts, Categories, and Networks of Intent, Affect and Meaning

MP: Conceptualizing intent - defined as above.

OBS: Working with the templates with the teachers identified several more points.

CRIT: Authenticity

MOD-REV: Some new strategies were added although redundancy was well developed by this stage. Also two changes to categories were made. Judith disagreed with the category title of No Instructional Purpose. She argued that all teaching activity has some instructional purpose and this category was merged with the category of No Immediate Effect. The category Interaction was added in both Laura's and Elizabeth's templates. The form of the 3 templates at the end of phase 2 is shown in Appendix T.

Phase Three

Coding Processes

NPP: Refining of coding

OBS: Although it had become quite easy to apply the terms to a new transcript, it was difficult to describe the completed set of codes, but it was not readily apparent why. While it seemed that teachers had little difficulty assigning codes to particular episodes, the codes seemed difficult to describe.

CRIT: Authenticity

REV-MOD: A technique for refining the codes was developed. It consisted of the following steps: 1. Starting with the Middletown transcripts, the coding was reviewed in the Hyperqual program. It was checked to make sure all codes were uniformly entered. 2. A set of cross referenced files was created for each code. 3. Using the tag and sort function of Hyperqual, all examples of one code were collected. 4. These were compared by referring to the episodes to identify common features related to each code. 5. Characterizing qualities for each code were defined. 6. As subsequent codes were checked, comparisons among descriptors yielded statements describing the differences between and among the codes. 7. Subtypes were identified for some codes. 8. Each example was then checked against the characterizing quality and listed in the code file according to subtype where applicable. 9. Where examples did not match the characterizing qualities, they were recoded with a different code. All coding changes were then transferred to the hyperqual stacks. 10. This process was repeated for all codes for the other two sets of transcripts. Definitions and subtypes developed in the previous set or sets were referred

to and used with the subsequent sets, making the codes applicable across the three settings.

MP: Refining of coding - defined as above

OBS: As changes were made to the Hyperqual stacks, they were automatically saved. Some entries regarding the rationale for the changes were made into the research notebook. However, this process was not systematic.

Consequently, records of the refining of coding process were limited, except for final outcomes. There was no complete record of the logic of the refining process. This was also the case in phase one/two but became obvious in phase three due to the greater degree of recoding.

CRIT: Dependability and confirmability

MOD-NM: To provide a better record, a process needed to be developed to account for the coding and recoding process more effectively.

MP: Refining of coding - defined as above

OBS: The process of network construction was complex with many variations attempted.

CRIT: Dependability and confirmability

MOD-REV: Accountability for the logic of the final form was considered and as networks were constructed, used and reconstructed, most versions were numbered to provide a record of the inductive process.

MP: Identifying concepts and categories - defined as above

OBS: Codings were revised by combining the teachers' stated intentions and other features of the episode. In the process of refining the codings, some codes were found to be redundant, some ambiguous, and some appeared to be subsets of others. Also it was found that across the three teachers different terms were being used with what seemed to be much the same intent, and also the same term used with different intents. For example, facilitate was used by Judith and develop by Laura for episodes in which features appeared identical.

CRIT: Authenticity

MOD-REV: Concepts were recoded, given new codes, and recategorized.

By the end of phase 3, the categories organizing strategies had been reduced from 12 to 6 and the total number of strategies from 45 to 23. Categories organizing knowledge had been reduced from 7 to 2 and the codes for types of knowledge from 38 to 5. The templates for the three teachers at the end of phases 2 and 3 are in Appendices T and U respectively.

MP: Identifying concepts - defined as above

OBS: Some episodes were especially difficult to code and the difficulty seemed to correlate with children. Episodes with some children were particularly convoluted and perplexing, and with others simple and

transparent. There appeared to be patterns, at least with some children, in coding of the episodes.

CRIT: Authenticity

MOD-POT: Finished codings could be sorted by child to see if there are any child-specific patterns.

MP: Identifying categories- An Other category contained instances that could not be categorized otherwise.

OBS: This was a recurring event.

CRIT: Authenticity

MOD-REV: From time to time all instances of Other were sorted and checked to see if they could be reworked given the evolving concepts and categories. By the end of Phase 3, this category was empty.

MP: Various

OBS: Judgements about ethical considerations and those for applicability and participation for teachers were frequently made.

CRIT: Ethical considerations and applicability and participation for teachers

MOD-REV: An additional check on the criteria of ethical consideration and applicability and participation of teachers in the research process would be made in the post-study interview. Teachers would be asked how well they felt these criteria had been met. (They all indicated that the study had not interfered adversely with the learning environment, sometimes commenting positively on its effects. They referred specifically to the role of the researcher in meeting this criterion. Similarly, they all responded positively to their role in the study. They all referred to their sense of value and usefulness in the process. For example, one commented that she was always amazed that what she said was of any use or relevance or had a more complex meaning than at a superficial level. They also indicated that the study had provided much opportunity for reflection on their own practice and much learning about classroom communication processes that they previously had understood only in a much simpler way.)

Developing Concepts, Categories and Networks

MP: Conceptualizing intent - defined as above

OBS: The property of effect on the child remained as the major property differentiating strategies and organizing them into categories. However, closer examination showed that some reorganization of categories was necessary. As well, features of the working view of language helped in suggesting ways to further articulate differences among strategies.

CRIT: Authenticity

REV-MOD: The category of Child's Feelings was redefined as combinations of different strategies with Affect. The only strategy in the category Child's Relationship With Other Children was to protect. The strategy and category

were eliminated as it was observed that these were not dyadic episodes in that the teacher's intent was directed at other children. The category of Relationship with Teacher also had only one strategy which was to bond. The category and strategy were eliminated when the episode was recoded using knowledge of roles. Strategies in the category of Child's Attention were recoded as different forms of Child's Current Activity. The only strategy in Child's Observations was to model. This was redefined as a form of developing a child's understanding and was recategorized. The strategies in Child's Physical Needs were recoded as a combination of different strategies with a subsection of Content called personal care.

A fundamental quality in the working view of language was interaction as a locus for language development and an understanding of meaning. Focusing on the interactive exchange between teacher and child revealed strategies that were one-way, such as when teachers refused permission or gave specific instructions with no expectation of argument, and strategies that were two-way, such as when teachers were attempting to help a child understand some new concept. Also seen were distinctions in strategies in the construction of the dyadic episode in terms of turns such as who initiates, whether a response is expected, and whether this then sets up another pair of turns, and also in the degree of control or choice over an activity. The notion of topic also helped distinguish among strategies. In some cases the teacher was working with aspects of a topic already introduced, and in other cases she was introducing the child to aspects not previously introduced. The notion of negotiation was also helpful. In some strategies, the teacher appeared to monitor, and adapt her communication depending on the child's apparent understanding. Other times, there was no adapting. In some cases subtypes of strategies were differentiated by their explicit or implicit nature. Categories and strategies in their final forms are described in detail in Chapter Four and this information is not duplicated here.

MP: Conceptualizing intent - defined as above

OBS: The curriculum outline used to conceptualize knowledge initially had been developed before undertaking the development of the working view of language in this study. The work of Alexander, Schallert, and Hare (1991) provided a framework for the organization of terminology related to cognition and literacy in the educational literature. It was a better match than the curriculum outline for the notion of language as it had been developed here.

CRIT: Authenticity

MOD-REV: Categories and concepts of knowledge were reconceptualized using this framework. They are described in detail in Chapter Four and this information is not duplicated here.

MP: Conceptualizing affect - defined as above

OBS: Coding affect was a constant source of frustration. It was clear that affect was involved in the exchanges but how to code it became increasingly uncertain. Also it was addressed only sporadically in the discussions providing a limited and uneven set of descriptors. However it did appear as the object of the strategy in place of or in conjunction with a descriptor of knowledge.

CRIT: Authenticity

MOD-REV: Only affect as the object of a strategy was coded.

MP: Construction of networks - defined as above

OBS: Contextual and structural features as developed in the previous section could be integrated into network construction. However, this required the addition of a type of category choice called here an optional choice in that choices made were all, none, or some of the possibilities.

CRIT: Authenticity

MOD-REV: Network construction included structural and contextual features. A round bracket was used as the notation for this type of category choice.

APPENDIX Q
Questions For Discussion of Transcripts

1. What did you intend to communicate to the child during this exchange (or part of it)?
2. How did you feel about this exchange (or part of it)?
3. What do you think the child intended to communicate during this exchange (or part of it)?
4. How do you think the child felt about this exchange (or part of it)?

Appendix R

Sample of Hyperqual Window

HyperQual Site T&S Stack: "Copy of rts1"

Site: Newton - 1-1/Carrie

Researcher: al

Source Card: 9879

Source: stack Newton

Tags: Sort Tag:

permitted
routine
dir
convt'l

Exemplar:

Newtown-1-1 / Carrie
TEACHER'S

AL: So this is probably pretty straightforward - meaning in this case.

ELIZ: i wanted to let her know that she could go into the room for a few minutes & that AMY could go with

Global RepTag

Merge

Dump Exemplars

Mark

Card No. 1

Card ID 4261

Note. Window on left is the coding window. Window on right contains transcript extracts. This window can be scrolled up or down to see complete extract.

Appendix S

Outline Of Curriculum Areas Used For Classroom Curriculum Development

ENVIRONMENTAL STUDIES

A. Learning Attitudes and Values

B. Content

1. Department of Indian Affairs Science 2. Department of Indian Affairs Social Studies 3. Native Studies 4. Special Events

C. Concept Development

1. Number 2. Size 3. Temperature 4. Shape and Orientation 5. Colour 6. Texture 7. Properties of Light 8. Structure Function and Change 9. Properties of Sound 10. Living and NonLiving 11. Density 12. State 13. Time 14. Money 15. Communication 16. Sets and subsets 17. Mass 18. Pattern 19. Motion and Force 20. Cause-effect 21. Energy 22. Materials

D. Learning Patterns

1. Scientific Thinking 2. Creative Thinking 3. Humanistic Thinking 4. Logical Thinking 5. Historical Thinking

RHYTHM RHYME MUSIC MOVEMENT AND DRAMA

VISUAL MEDIA

LANGUAGE

A. Literature

B. Language

C. English Communication

1. Speaking 2. Listening 3. Reading 4. Writing

D. English Structures

1. Vocabulary 2. Sight Vocabulary 3. Graphophonemics 4. Word Building 5. Syntax 6. Alphabet

E. Second Language

MATH

A. Number

1. Concept 2. Sequence 3. Place Value 4. Operations of Addition and Subtraction 5. Number Problem Solving 6. Word Problem Solving 7. Fractions and Fractional Numbers 8. Operations of Multiplication and Division 9. Number Theory 10. Decimal Numbers 11. Estimation and Rounding of Numbers

B. Measurement

1. Linear 2. Mass 3. Volume 4. Time 5. Area 6. Money 7. Temperature

C. Graphing

D. Geometry

PHYSICAL DEVELOPMENT

- A. Physical Health
- B. Psychomotor Development
- C. Gross Muscle Development
- D. Fine Motor Development
- E. Speech Development

Appendix T
 Templates For The Three Settings At The End Of Phase Two

Oldtown

STRATEGY	KNOWLEDGE
<p><u>Interaction</u></p> <ul style="list-style-type: none"> -to respond -to initiate <p><u>Child's Current Activity</u></p> <ul style="list-style-type: none"> -to reinforce -to reinforce-negative -to redirect -to solve -to direct -to encourage -to facilitate -to thank -to support -to confirm -to self-assess -to self-redirect -to articulate -to check up <p><u>Child's Attention</u></p> <ul style="list-style-type: none"> -to focus <p><u>Child's Understanding</u></p> <ul style="list-style-type: none"> -to clarify -to strengthen -to receive information -to extend -to build <p><u>Child's Next Activity</u></p> <ul style="list-style-type: none"> -to be performed -to be chosen -to take responsibility -to be okayed -to be permitted <p><u>No Immediate Effect</u></p> <ul style="list-style-type: none"> -to think -to defer <p><u>To Obtain Information</u></p> <ul style="list-style-type: none"> -to query -to assess 	<p><u>Social</u></p> <ul style="list-style-type: none"> -classroom -routine -role -responsibility to others -task <p><u>Language</u></p> <ul style="list-style-type: none"> -conversation -literacy -oral language <p><u>Learning</u></p> <ul style="list-style-type: none"> -identifying problems -decision-making -problem solving <p><u>Physical</u></p> <ul style="list-style-type: none"> -needs <p><u>Conceptual</u></p> <ul style="list-style-type: none"> -number -geometry <p><u>Content</u></p> <ul style="list-style-type: none"> -general -personal <p><u>Affect</u></p> <ul style="list-style-type: none"> -status-positive -status-negative

Middletown

STRATEGY	KNOWLEDGE
<p><u>Child's Current Activity</u></p> <ul style="list-style-type: none"> -to reinforce -to reinforce-negative -to redirect -to solve -to direct -to encourage -to stop -to augment -to monitor -to assist <p><u>Child's Feelings</u></p> <ul style="list-style-type: none"> -to protect -to feelhelpful -to reassure -to avoid <p><u>Child's Observations</u></p> <ul style="list-style-type: none"> -to model <p><u>Child's Physical Needs</u></p> <ul style="list-style-type: none"> -to be met <p><u>Child's Relationship With Teacher</u></p> <ul style="list-style-type: none"> -to bond <p><u>Child's Relationship With Other Children</u></p> <ul style="list-style-type: none"> -to protect <p><u>Child's Attention</u></p> <ul style="list-style-type: none"> -to focus -to extend -to engage <p><u>Child's Understanding</u></p> <ul style="list-style-type: none"> -to develop -to clarify -to strengthen -to transmit <p><u>Child's Next Activity</u></p> <ul style="list-style-type: none"> -to be performed -to be chosen -to be prevented <p><u>No Immediate Effect</u></p> <ul style="list-style-type: none"> -to think -to amuse self <p><u>To Obtain Information</u></p> <ul style="list-style-type: none"> -to query -to check 	<p><u>Social</u></p> <ul style="list-style-type: none"> -classroom -routine -role -negotiation of rights -responsibility to others -responsibility to self <p><u>Language</u></p> <ul style="list-style-type: none"> about language -conversation -literacy -vocabulary <p><u>Learning</u></p> <ul style="list-style-type: none"> -learning -risk taking -procedural <p><u>Physical</u></p> <ul style="list-style-type: none"> -needs -physical knowledge <p><u>Conceptual</u></p> <ul style="list-style-type: none"> -conceptual <p><u>Content</u></p> <ul style="list-style-type: none"> -general -personal <p><u>Affect</u></p> <ul style="list-style-type: none"> -status

Newtown

STRATEGY	KNOWLEDGE
<p><u>Interaction</u></p> <ul style="list-style-type: none"> -to talk -to show interest -to attend <p><u>Child's Current Activity</u></p> <ul style="list-style-type: none"> -to reinforce -to reinforce-negative -to redirect -to solve -to direct -to facilitate -to thank -to stop -to enable -to sustain -to ignore -to deny <p><u>Child's Feelings</u></p> <ul style="list-style-type: none"> -to protect -to feel responsible -to feel good -to feel safe <p><u>Child's Physical Needs</u></p> <ul style="list-style-type: none"> -to be met -to be cared for <p><u>Child's Attention</u></p> <ul style="list-style-type: none"> -to focus -to extend <p><u>Child's Understanding</u></p> <ul style="list-style-type: none"> -to clarify -to receive information -to extend -to articulate -to identify <p><u>Child's Next Activity</u></p> <ul style="list-style-type: none"> -to be performed -to be okayed -to be deferred -to consolidate <p><u>No Immediate Effect</u></p> <ul style="list-style-type: none"> -to think <p><u>To Obtain Information</u></p> <ul style="list-style-type: none"> -to query -to assess 	<p><u>Social</u></p> <ul style="list-style-type: none"> -classroom -routine -role -responsibility to others -personal life <p><u>Language</u></p> <ul style="list-style-type: none"> -literacy -about language -story knowledge <p><u>Learning</u></p> <ul style="list-style-type: none"> -learning -choice making -action <p><u>Physical</u></p> <ul style="list-style-type: none"> -physical needs -technical knowledge -grooming -dress code <p><u>Conceptual</u></p> <ul style="list-style-type: none"> -measurement -number <p><u>Content</u></p> <ul style="list-style-type: none"> -personal <p><u>Affect</u></p> <ul style="list-style-type: none"> -status-positive -self-perception -emotional state of others

Appendix U
 Templates For The Three Settings At The End Of Phase Three

Oldtown

STRATEGY	KNOWLEDGE	AFFECT	MEANING
<u>No Immediate Effect</u>	<u>Conceptual Knowledge</u>		
-to think	-discourse knowledge		
-to hide meaning	(rhetorical; text)		
<u>Interaction</u>	-word knowledge		
-to initiate	-content knowledge		
<u>To Obtain Information</u>			
-to query			
-to assess			
<u>Child's Current Activity</u>	<u>Construction</u>		
-to reinforce	-willingness to follow		
-to reinforce-negative	instructions or routines		
-to redirect	-willingness to be self-		
-to sustain	directed or to show		
<u>Child's Next Activity</u>	initiative		
-to be chosen	-persistence		
-to be permitted	-willingness to		
-to be directed	participate or		
<u>Child's Understanding</u>	investigate		
-to transmit	--willingness to attempt		
-to strengthen	to solve problems		
-to develop			
-to self-assess			

Middletown

STRATEGY	KNOWLEDGE	AFFECT	MEANING
<u>No Immediate Effect</u> -to think -to amuse self -to hide meaning <u>To Obtain Information</u> -to query -to assess <u>Child's Current Activity</u> -to reinforce -to reinforce-negative -to redirect -to solve -to resolve -to stop -to facilitate <u>Child's Next Activity</u> -to be chosen -to be directed -to be permitted -to be prevented <u>Child's Understanding</u> -to develop -to transmit -to strengthen -to have self-assess -to have observe	<u>Conceptual Knowledge</u> -discourse knowledge (rhetorical; text) -word knowledge -content knowledge <u>Construction</u> -willingness to follow instructions or routines -willingness to be self- directed or to show initiative -persistence -willingness to participate or investigate -willingness to attempt to solve problems		

Newtown

STRATEGY	KNOWLEDGE	AFFECT	MEANING
<u>To Obtain Information</u> -to query -to assess <u>Child's Current Activity</u> -to reinforce -to reinforce-negative -to redirect -to solve -to facilitate <u>Child's Next Activity</u> -to be directed -to be permitted -to be chosen <u>Child's Understanding</u> -to transmit -to develop -to strengthen -to have observe -to self-assess	<u>Conceptual Knowledge</u> -discourse knowledge (rhetorical; text) -word knowledge -content knowledge <u>Construction</u> -willingness to follow instructions or routines -willingness to be self- directed or to show initiative -persistence -willingness to participate or investigate -willingness to attempt to solve problems		

Appendix V
Sample Of Single Complete Transcript⁶

TYPE: AU DATE: Mar. 16 CLASS: Newtown # 14

11:06

Children have just returned from recess & are finishing a spelling activity begun before recess. Elizabeth is circulating checking on their progress. She goes to her desk to get some papers for the next activity.

ALEX is sitting on rug at the group area.

ELIZ Alex / do you want to get me all the cards // please / all the little cards /// **Elizabeth is walking toward the area. She looks at ALEX. He looks up at her.**

I think they're behind my desk ///

ALEX complies.

Elizabeth is with Kevin reading his work.

Cindy approaches to MID & waits. She is holding her paper.

Elizabeth finishes reading Kevin's work & turns to Cindy.

Elizabeth is bending down to pick something up from the floor.

ELIZ okay can you go get me the / where is the journal box ///

Cindy bends down to same level as Elizabeth.

CIND um / I don't know // I need another piece of paper ///

ELIZ why ///

CIND because /

ELIZ no: you don't ///

that's a waste of paper ///

Cindy leaves slowly.

Elizabeth talks to other children & continues looking through pile of children's books on the floor.

ALEX approaches holding the cards.

ALEX Mrs. E ///

Elizabeth looks up at the cards & over towards the chair.

ELIZ good / can you put them on the chair ///

⁶ All names are psuedonyms.

bring them oh yeh // yep that's fine ///

He complies.

ALEX returns to Elizabeth. He is standing FAR & slightly behind her. She is still sorting children's books on the floor. Amy arrives & waits. She is standing behind Elizabeth. She replies to him without looking up.

ALEX ()

ELIZ well / we're just gonna / play a game

(Assume he asked a question but nothing evident on either tape.)

Elizabeth looks up at ALEX to give name of the game.

ELIZ uh / what time is it Mr. Wolf ///

ALEX is looking at something on the chair beside him.

so can you just wait find something quiet to do for about three minutes ///

ALEX leaves.

Amy is still waiting. Ben arrives to MID & in front of Elizabeth.

He is pointing to his paper.

Elizabeth stands up.

BEN this side is hard ///

Elizabeth bends over & points at his page.

ELIZ just write it out here // **Elizabeth turns & points to a spot in front of the board.** come and sit here then / with a book I'll get you a book ///

Ben moves to the spot & Elizabeth gets him a book.

Elizabeth passes David & he hands his paper to her. She takes it without looking at him.

ELIZ thank you ///

David follows her .

Elizabeth drops the book beside Ben.

Elizabeth starts back towards her desk.

Elizabeth passes David & hands him some papers without looking down.

ELIZ recycle that for me ///

David takes the papers & goes off looking for the boxes.

Elizabeth asks whole group to finish & come to group area.

Cindy approaches holding up her paper. Elizabeth takes it from her & looks at it. She folds it & moves over to cupboard putting the paper down

ELIZ kay right here ///

Elizabeth pulls Cindy around to work on the cupboard surface while looking at the board. Elizabeth stands behind her & points to paper where Cindy is to write.

ELIZ kay POT / P O T ///

Cindy writes.

Elizabeth moves back & talks to another child.

Cindy is finished writing & is looking up at Elizabeth. Elizabeth looks down at her work & moves back beside the cupboard & watches Cindy as she writes.

okay / next word / POT ///

Cindy writes.

next wor::d / PLOT ///

TOT ///

Elizabeth bends down beside Cindy.

TO:T ///

why are you going up like that // you should be going right across/// **She is using her hand to indicate the angle at which Cindy is writing.**

Elizabeth stands back up again.

CIND I don't know how to go across ///

ELIZ yes you do // do it or this one ///
not ///

Cindy writes.

go slowly ///

okay / a::nd **Elizabeth is checking the board.** over here write POT///

Cindy writes..

Elizabeth gives instructions to whole group.

She moves away from Cindy. Cindy finishes & starts to put it on the pile with the others. Elizabeth returns to her. She opens up her folded paper & puts her arm around her shoulder bending over to talk to her but not looking at her. Cindy does not look up at her.

ELIZ okay / come and sit down and I'll teach you the game okay ///
actually put that away ///

Cindy leaves slowly to put away her pencil.

11:11

Elizabeth teaches whole group the math game.

Children work in small groups with math game. All interaction is teacher and small group.

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Title of Dissertation: Developing Methods for Recording and Describing Dyadic Classroom Discourse Between Teachers and Young Children

Author

(Signature)

Anne Crawford Lindsay

(Name)

April 23, 1996

(Date)

Figure 8. A network of the conceptual structure of teachers' language in an episode of dyadic classroom discourse.

