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UNIVERSITY OF ALBERTA

AN EXPLORATION OF VOICE IN THE RESEARCH PROCESS IN A PRIMARY CLASSROOM

BY

PAMELA STEEVES

A thesis submitted to the Faculty of Graduate Studies and Research in partial fulfillment of the requirements of the degree of Master of Education

DEPARTMENT OF ELEMENTARY EDUCATION

Edmonton, Alberta

SPRING 1993

ISBN 0-315-82159-0

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RELEASE FORM

NAME OF AUTHOR: Pamela Steeves

TITLE OF THESIS: An Exploration of Voice in the Research Process in a Primary Classroom

DEGREE: M. Ed. in Elementary Education

YEAR THIS DEGREE GRANTED: 1993

5211 109A Avenue

Edmonton, Alberta

Date: April 14 1993

UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled "An Exploration of Voice in the Research Process in a Primary Classroom" submitted by Pamela Steeves in partial fulfillment of the requirements for the degree of M. Ed. in Elementary Education.

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ABSTRACT

In recent years a model of the library research process was developed by Kuhlthau. This model was premised on the stance, held by many educators, that knowledge is constructed. It implies an intimate relationship between the knower and the known. Voice can be conceived as a metaphor which speaks to the depth and power of this relationship. Viewing the library research process through qualitative inquiry became a way to explore voice.

The literature on constructed knowledge and voice in writing, library research, journal writing and language for learning as well as my own teacher learner stories showed the importance of providing a space to honour voice. What this might mean for primary aged children as they engaged in a research project was constructed by two teachers working collaboratively to plan, teach, and reflect on the process. As a teacher researcher, I used a narrative format to present and further develop an understanding of voice in the research process. Through reflection on my own research story, the teacher's story, and the children's research story, several themes were found which strengthened an emerging interpretation of voice in the research process.

These themes came to be expressed as stages of the research process. They were exploration, commitment, embodiment and celebration. As well, relationship, time and trust became threads which

wove through many of the stories. Children must be given sufficient time and a variety of experiences during the exploration stage in order for them to form a relationship with the topic. Once this relationship is established, a high degree of commitment to a chosen focus is observed. As children present their own unique interpretation of their topic, they identify very strongly with their work. It appears as embodiment. Celebration and a sense of growth occurs throughout the process as children become a part of what they learn and their voices are heard.

ACKNOWLEDGMENTS

I wish to express my sincere appreciation and gratitude to these persons who both supported me and contributed to this study.

To my advisor, Dr. D. Oberg, for her guidance and encouragement throughout the research process.

To Dr. D.J. Clandinin, for her inspiration in first engaging my imagination as I explored and developed my research topic.

To Heather, who so willingly gave her time, efforts, and enthusiasm to share the commitment to this teacher-research journey.

To Dr. M. Iveson for her interest and thoughtful comments on the thesis.

To the principal, staff, parents, and students that participated in the study, for welcoming me into their classroom community.

To the professors and fellow students that I have been associated with at this university, who provided me with time and a safe environment to think, share, and rethink my ideas.

To my husband and family for their assistance and patience, and for the caring conversation which enabled me to develop a richer appreciation and understanding of my research.

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Suzanne's Teddy Bear Piece

My teddy bear, I love my teddy bear.
I sleep with my teddy bear.
I eat with my teddy bear.
I play with my teddy bear.
I go shopping with my teddy bear.
Except! I don't bring my teddy bear to school.

Note. From Living Between the Lines (p. 14) by L. Calkins, 1991, Portsmouth, NH: Heinemann. Copyright 1992 by Heinemann. Reprinted by permission.

How do we as teachers acknowledge the experience and lives of our children? How might they learn in a way that connects both heart and mind? I am drawn toward the inquiry process, specifically the research projects children undertake in school. My view of inquiry is intimately related to my concept of voice. The child brings his or her life to the research, and the child's voice is heard, a voice not abstracted or separated from the process. With the emergence and communication of each child's voice, a child begins to affirm his or her own identity. In

turn, we, as part of the community of learners, will benefit from each child's unique understanding. We see that the rainbow is painted in many colours. To share this understanding, I will recount the story of a research project I took part in when I was ten years old.

At the beginning of my grade five year, we were told that we would do several research projects. We were allowed to choose our topics and we were given choices in style of presentation. We were given few instructions but few restrictions either. I chose to learn about different kinds of evergreen trees. I love to be in the woods and as a child I always managed to find wild places to play in--they were full of enchantment for me. And so it was with great anticipation that I drove with my parents across the Ottawa River and into the Gatineaux Hills in winter time to collect my specimens. I remember wading deep in snow under graceful boughs of fir and pine. I felt like a naturalist, wondering about the various needle clumps--were there three or five, and were they round or flat? When I got home, I used books with watercolour illustrations to help identify and describe my treasures. I talked with my Mom about my work. I mounted my specimens on bristol board with accompanying labels, illustrations and notes. I stood up in class to share my findings. I was proud of my project. I remember it to this day.

But professional reading and conversations with colleagues showed me that this is not always the case for students involved in

school research projects. I found Nancie Atwell (1990) writing about an experience entirely different from mine. In remembering her middle school years, she wrote of the dreaded research report, a dead and boring thing. She knew quite a bit about her topic, Great Britain, because her British grandmother had told her stories about English country life, the gardening and cooking, and the games that people played. "But what I could teach others or what I wanted to learn were not considerations in the assignment," (Atwell, 1990, p. xi). Copying from the World Book Encyclopedia at the last minute was not enough to enable her to complete the assignment. She arrived at school the next day 'empty handed'. It was not until the last day of the term that she was 'found out'. The reports had not been marked until the very end of the year. Atwell suggests that the teacher, too, was having difficuty getting through the reports.

It made me wonder about the differences between her experiences and mine. Perhaps due to my wondering and perhaps due to my learning about a process approach to library research, I began to explore the use of what I called information journals with a group of primary children in my resource room. I think of one boy in particular who was very interested in his own native traditions and history. He wanted to research eagles. He talked about his experiences seeing eagles in wilderness areas. He talked about their vast wing span, their strong

beaks and how they soared and hunted. We looked at pictures from information books and read the captions. He wanted to know more about their hunting and nesting and so I read some of these more difficult articles to him. He used his information journal to retell these ideas as well as recount his experiences and feelings about eagles. Standard formal text posed difficulties for this child, as it does for many; but, because the ideas were in his own words, he was able to read as well as write his own journal entries. At the end of our discussions, reading and informal expressive writing, he used clay to mould a startling portrayal of an eagle. He had even taken it home to work on. He showed it to his classmates. It seemed like a powerful moment for him. The informal writing in his journal gave expression to his feelings about eagles and I think these, as well as his new learnings, were captured in that piece of clay.

To me, he was bringing his learning to life. But how was this coming about? What was he doing that Nancie Atwell seemed to be missing in her experience of doing research as a child? There seemed to be a connection between the writing process and the research process and my emerging understanding of knowledge as something that is constructed by the knower. I decided I needed to look at some of the literature in these fields.

What struck me initially in reading that literature was the concept of empowerment. The 1989 report of the American Library Association to the Presidential Committee on Information Literacy stated "Information prepackaging in schools and through broadcast and print news media ... encourages people to accept the opinions of others without much thought ... Information literacy therefore is a means of personal empowerment" (p. 84). One means of achieving information literacy is through the learning of a research process, made meaningful through personal inquiry.

Authors from the field of writing research, describe the power of voice in a piece of writing. They talk about the 'I am' in writing (Elbow, 1981), the life force behind it. Calkins states, " Writing with voice means writing with one's life" (1991, p. 201). Information literacy, gained through the research process, is made purposeful when individual voice is valued. It is a powerful combination.

Belenky, Clinchy, Goldberger, and Tarule write that women's sense of voice and ways of knowing the world are intimately related. When women come to see knowledge as something they construct, "Each wanted her voice and actions to make a difference to other people and the world" (1986, p. 33).

What is it, then, in the research process that might engage children and lead them to a feeling of empowerment? Could the

research process provide a space for the development of voice as portrayed in the writing process and what might this mean? Could this aspect of voice account for the difference between my research experiences and those of the writer and educator Nancie Atwell?

The Research Process

In this study, I have used the model of the library research process presented in the document Focus on Research (Alberta Education, 1990). This library research model (Figure 1), developed on the basis of schema and cognitive learning theory, followed on the heels of a newly emerging understanding of the process approach to library research (Kuhlthau, 1985).

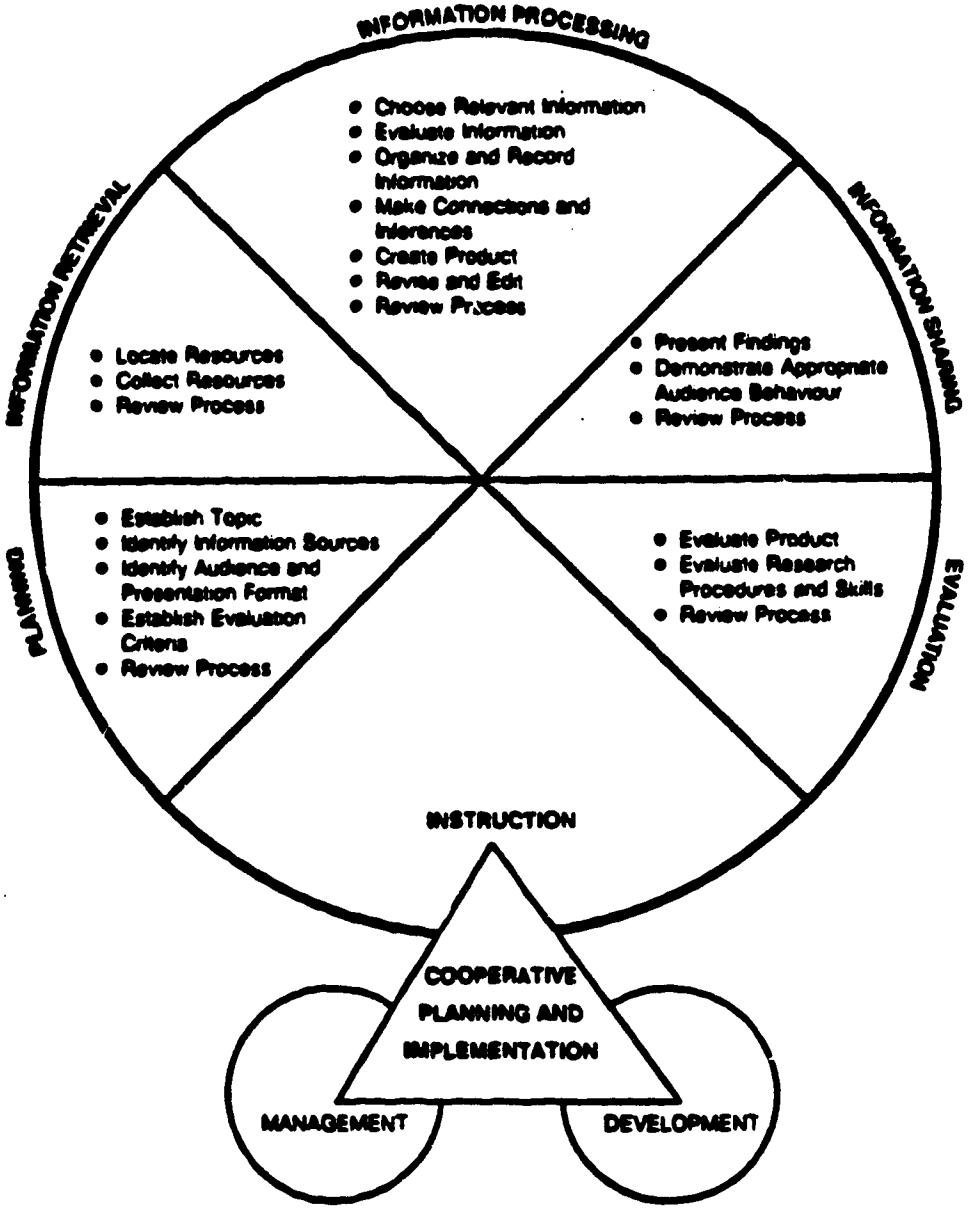
A brief description of the five stages of the Focus on Research model follows. Initially children participate in a Planning stage, where they establish a topic, perhaps through brainstorming what they know about a topic, categorizing ideas, or developing focus questions. Presentation formats are chosen at this time. They also decide on possible resources to consider which are then located in the Information Retrieval stage. During Information Processing children are guided to select and organize information, and to make connections between new information and prior knowledge. During Information Sharing,

information may be communicated in many diverse ways such as videotape, artwork, drama, poetry, story or written report. Evaluation involves assessment of both process and product. The emphasis throughout the research process is on reflection and personal growth. Children are asked to reflect on what they have accomplished, and to chart their course at each stage of the library research process in Reviewing the Process.

The library research model presented in Focus on Research can be adapted by the teacher and/or teacher-librarian to fit the needs and circumstances of children from grades K to twelve. The guide's central premise states, "For information to become personal knowledge, students have to make connections and see relationships between what they read, see or hear, and what they know" (p. 5).

Figure 1

A Developmental Approach to Research



Note. From Focus on research: A guide to developing students research skills (p. 3) by Alberta Education, 1990, Edmonton: Author.

Purpose of the Study

My exploration so far was directing me to a connection between voice and the construction of knowledge. I was starting to think that viewing the reseach process might make such connections visible. Personal experiences as a learner and as a teacher were giving me the idea that knowledge that is alive is knowledge that is relevant to the knower. It seemed to be the kind of knowledge that is constructed with both heart and mind--a kind of knowledge that made room for voice.

There seemed to be spaces in the library research process for the development of voice. I was thinking especially of the numerous opportunities to make personal choices--of specific topic, of resources, of presentation format. I thought about the information sharing that occurred at the end of the process. It seemed to have an aura of celebration around it which excited me. As a teacher concerned with the growth and well being of children, it would be important for me to learn how to encourage the emergence of each child's voice.

My research purposes evolved as the following:

1) To explore the concept of voice in relation to children's experiences in constructing knowledge through participation in a library research project.

2) To consider how we as teachers might facilitate the development of voice in the library research process.

Perspectives From the Literature

Introduction

I now needed to develop my understanding from a more subjective knowing related to my own personal experiences to a more connected knowing (Belenky, Clinchy, Goldberger, & Tarule, 1986) through a review of the literature on voice, knowledge construction and the research process.

The literature reviewed in this section appears relevant to a view of education which reflects a need for the learner to engage in inquiry, dialogue, active participation and construction in his emergent learning--a view of what might be called an empowered learner.

Knowledge Construction

One of the major psychologists to hold the view that knowledge is constructed was Kelly (1963). He validated and respected both the affective and cognitive framework from which a child operates when he

or she tries to make sense of the world. Information is not assimilated passively, free from contaminating perspectives, but rather is constructed actively by the child who fits the new pieces of information into an existing and developing framework. Of late, based on the views of the philosopher Nelson Goodman, Jerome Bruner (1987) has argued that "world making is the principal function of mind whether in the sciences or in the arts" (p. 11).

Belenky, Clinchy, Goldberger, & Tarule, (1986) share with us another way to think about constructed knowing. In interviews with 135 women, they began to see that women who had opportunities to 'really talk' and be 'really listened to' in caring communities (family or school) come to view knowledge differently. Knowledge was not seen as something 'received' from an outside authority or something solely intuitive and personal. Instead, it became an integration of the knowledge of personal experience and the knowledge learned from others. "All knowledge is constructed and the knower is an intimate part of the known" (p. 137). The notion of nurturing the self and the fragile emerging voice is paramount, because "relative lack of self knowledge prevents women from finding points of connection between what they are trying to understand and their own experiences" (p. 141).

Berthoff (1987a) offers the view that meaning will be created for the child when the imagination is engaged. She sees the imagination as

a kind of bridge linking affective and cognitive knowing. She says "But imagination is properly a name for the active mind, the hand of a child making forms in the sand, the artist making forms in granite" (p. 28).

The ideas of Polanyi underlie the statement that "Knowing is a personal act requiring both personal judgement and commitment" (Brimfield, Roderick, & Yamamoto, 1983, p. 12). This concept is echoed and extended by Connelly and Clandinin (1988). Personal knowledge is often at a tacit level. It is seen in our actions as personal practical knowledge.

Reid (1986) suggests that there are many different ways of knowing but a separation of thinking and feeling has dominated curriculum--the arts for example are given 'left over' time. Abstraction and the more impersonal language of science and technology have been favoured over the language of concrete experience. He reminds us that there is much passion in scientific research and discovery. He cites the 1975 Bullock Repor which states "In order to come to know more fully in different ways, we have to learn to express in different ways, for each kind of knowing has its own medium of expression" (p. 4).

Greene (1988) says that the purpose of education is to 'open spaces' where children can grow and that the caring teacher would foster a kind of learning where children see differing perspectives and respect multiple realities. She writes that situations must be deliberately

created to allow choices to be made. She further states, "I am suggesting that there may be an integral relationship between reaching out to learn and the search that involves the pursuit of freedom " (p. 124).

Dewey warned of the "danger of the routine and the mechanical" (cited in Greene, 1988, p. 125). He favoured experiential inquiry and artistic exploration in schools and emphasized the need to examine the worthiness of educational experiences. "What avail is it to win prescribed amounts of information about geography and history, to win ability to read and write, if in the process the individual loses his own soul" (Dewey, 1938, p. 49). Dewey gave us one of our first glimpses of the view of the teacher as collaborator in learning. He believed education to be essentially a social process, with the teacher taking the role of a group leader.

This literature then gives us a number of insights into a view of knowledge as constructed. It is radically different from the behavioral, technical standpoint where a body of discrete facts is to be transmitted to waiting passive learners. Greene (1988) sees the transmission view as a throwback to the philosophy of positivism which she claims is a "separation of fact and value, where systems are posited that are to be regulated not by what an articulate public may conceive to be worthwhile, but by calculable results, by tests of efficiency and effectiveness" (p. 54).

Instead, in the constructivist view of learning and knowing, we see pieces of a pattern--a weaving together of the affective and cognitive. It involves imagination, and the development of self and voice. The notion of relationship is central to Britzman's definition of voice. "Voice", says Britzman, "requires acknowledging relationships: the individual's relationship to the meaning of her or his experience, and hence to language, and the individual's relationship to others, since understanding is a social process" (1989, p. 146).

This relationship which emerges in constructed knowing is guided by a sense of caring. Noddings says "It is time for the voice of the mother to be heard in education" (cited in Belenky et al, 1986, p. 214). We are living in a world where economically and politically driven research, extolled for being value free, has left us now asking huge ethical questions. The writer Annie Dillard says, "Caring passionately about something isn't against nature and it isn't against human nature. It's what we're here to do" (cited in Calkins, 1991, p. 124).

Writing and the Library Research Process

A review of the literature on writing in schools and on information literacy in school libraries reveals a shift in stance over the last decade--

a shift which opens up a space to contemplate and cultivate the development of voice. In the past there has been a concern for the mechanical aspects of writing and of information literacy, those areas that could be more easily quantified and measured.

In the writing field, spelling and punctuation were main topics of research and pedagogy. Children were not encouraged to write until they had the basics under control. The process was not viewed as holistic and developmental, but rather as a series of successive fragmented skills which when eventually attained would enable children to become writers. Similarly research and pedagogy in school libraries focused on locational skills and on finding correct answers to questions posed by others. Most actual library research would not take place until well after the child had the basic skills, around the middle school years at the earliest. Again, children were not seen to be learning a process made meaningful by their own individual inquiry, but rather a set of isolated sub-skills which someday would lead them to become writers and researchers.

Graves was involved in pioneering work on the process of children's writing in the early 1980's. He observed and wrote about children's experiences as they attempted to construct meaning in their writing. Although talking about voice in writing, he could very well be talking about the research process when he says, "The voice shows how I

choose information, organize it, select the words, all in relation to what I want to say and how I want to say it" (1983, p. 227).

Similarly, the last few years have seen a marked change in the direction of library research due to pivotal studies carried out by Kuhlthau in the mid 1980's. Drawing on schema theory and personal construct theory in psychology, as well as her own experiences as a teacher-librarian, Kuhlthau (1985) decided to track high school students as they worked through a library research assignment. She was particularly interested in documenting students' feelings as they participated in their research. On the basis of her data and in response to students who told her they needed some kind of guidance, she developed a process model of research. "It is a complex learning process involving the thoughts and actions and feelings which take place over an extended period of time, which involves developing a topic from information in a variety of sources and which culminates in a presentation of the individual's new perspective on the topic" (1989, p. 19).

Although there appear to be some similarities in our understandings of the library research process and the writing process, research into the library research process is still in its infancy. It is helpful then to look at research both in the school library area and in the writing area to explore further the topic of voice. As well, aspects of

personal journal writing and of language for learning will be presented in an attempt to understand how voice in the research process might be further developed.

Voice in Writing

Graves says voice in writing is like the "frame of a window" (1983, p. 228). It is the view through which the ideas and information are seen. Voice, according to Graves, is the person behind the writing, and its presence makes the difference between a piece that is alive with energy, and one that is dull and mechanical. He says that young children have a natural voice in writing, as their writing is often very similar to their oral speech. However, as children grow older, children can lose this voice quality when they can't place themselves in relation to the topic they are writing about. Graves stresses the importance, for children, of writing about something they know and care about. He says, "Our data shows that when a writer makes a good choice of subject the voice booms through" (p. 229). Graves sees the energy of voice sustaining the child through the entire writing process--it is not just a step in the process.

Elbow (1981), in his book Writing with Power, sheds further light on the aspect of voice in writing. When he speaks of voice he reflects that the writing has 'resonance', that it is 'real' or 'rings true'.

He worked with older students in an English writing course, and found that when he asked the students to work on voice they wrote more and made a greater connection with their writing. Elbow felt the process led not just to better writing but also to personal growth and development. He also found more experimentation in style and mood. He, like Graves, feels that "writing with voice has life in it" (p. 288). Elbow further states that there is a difference between voice that is lively and fluent, such as that of a salesman, and 'real voice' which has power. He says "the words go deep". It is not so much the words on a page per se but "the relationship of the words to the writer" (p. 299).

Calkins (1991) sees the development of self playing a key part in what children might choose to write about. She encouraged children to keep notebooks in which to record their stories, feelings and personal responses to daily events in their lives. The notebook was conceived as a personal resource as they thought of topics and questions they might wish to explore. She says, "We will write with voice when we have read, questioned, dreamed, argued, wept, gossiped, and laughed over a topic" (p. 201).

Voice in Library Research

Most of the literature reviewed in this section reflects the need for children to develop their understanding of self through both thoughts and feelings. The literature presented so far reflects the interconnectedness of self, voice and knowledge.

Kuhlthau's model (1985) of the library research process documented not only what students tend to do during information search, but also their accompanying thoughts and feelings. Students experience optimism and excitement when selecting a topic; however, this tends to wane and feelings of confusion and anxiety take over as the student explores for a focus. This is often the most difficult stage of the research. She suggests that it takes time and may not ever be formed for some students (Loerke, 1992). Once a focus has been formed, confidence and a sense of direction builds, as students select more relevant information. Students again become more interested in their work. When students present their research, feelings of both satisfaction and relief are common.

Kuhlthau (1989) stresses that students need to know that anxiety and working in a somewhat circular fashion are all right and to be expected. She says that students will "learn that thinking, reflecting and mulling over are an important part of learning from information; that

uncertainty is not only all right, it is the beginning of all learning" (1989, p. 23).

Dewey (1938) felt that there was nothing more important in a philosophy of schooling than to acknowledge the learner's involvement in the purposes of his or her own learning. But inquiry is a complex process. Sheingold (1987) and others suggest supporting the process using metacognition, the process of becoming aware of your own thinking. Mancall, Aaron, and Walker (1986) examined the research strategies of experts in their chosen fields. They found that because experts have a great deal of knowledge about their subject matter, and are not totally absorbed in comprehending the subject matter at hand, they have the capacity to execute metacognitive control over their search process. This research highlights in another way, the need for children to choose topics in which they are interested and for which they have related experience or background knowledge.

It is difficult to assess the onset of this metacognitive ability; Mancall et al. (1986) cite the work of Vygotsky (1978) in this regard. Vygotsky suggests that at the 'zone of proximal development' children are able to carry out a task with assistance that which they could not do alone. For the child, working with assistance is a forerunner to working independently. Mancall et al. (1986) use Vygotsky's theory as a rationale for a supportive and guided approach to the library research process for

younger or inexperienced students. Blakey (a co-author of Focus on Research) and Spence (1990) offer the possibilities of using journals and discussion to help children reflect on and become aware of their own thinking while planning and carrying out a library research project.

In a more general study, McAfee (1981) found that using the school library contributed to the development of student's self concept. Using a case study approach she found that cooperation, independence, and feelings of success were fostered through library-based projects. As well, the children felt challenged and valued. Co-operative learning experiences, such as those that may be found in school research projects, lead to enhanced self-esteem and a greater understanding of self-worth (Johnson & Johnson, 1985, cited in Katz & Chard, 1989).

Davies (1979) argues that learning becomes individualised and that self awareness increases when the child is able to choose information sources from as broad an array as possible. She states that the standardized "colourless textbook is not the most, but the least, that can be said on any subject" (p. 28). Kuhlthau (1985) suggests that encyclopedias be used primarily to provide an overview of possible topics in the initial exploration stage.

Sheingold (1987) conceives the school library as a workshop for thinking, a place where children construct rather than get knowledge. She views much of the library research done by students in the past, to

be "knowledge telling"--a term coined by Bereiter and Scardamalia (1985, cited in Sheingold, p. 81). She believes this happens when no view is put forward, no connections made, because the student is not addressing any questions of personal interest. It is reminiscent of Nancie Atwell's story. She too was answering other people's questions. In contrast, Sheingold addresses Alfred North Whitehead's challenge to "keep knowledge alive" (1929, cited in Sheingold, p. 82) by suggesting that when children investigate their own questions, inquiry offers them the chance to create their own knowledge. Sheingold states:

> There is a great deal of cognitive research that tells us knowledge will remain inert unless we do something purposeful with it, such as questioning it, relating it to something we know, telling someone else about it, or using it as part of an argument. (p. 82)

Voice in Journal Writing

Engaging the imagination to construct knowledge and keep it alive seems to be an underlying impetus for using journals in schools. It seems intimately related to a notion of voice as both heart and mind.

Fulwiler says, "Self knowledge provides the motivation for whatever other knowledge an individual seeks" (1982, p. 30). Personal journals, rather like Calkins' notebooks, are a vehicle to contribute to growing self awareness, a place to discover what you already know. In Craig's words "I call it finding a voice of my own" (1983, p. 378). Craig notes that when

children must write about experiences that they have not had, or can make no connection to, "the writing is often dead, not enlivened by the experiential level" (p. 378).

Fulwiler also writes of academic journal writing as an "interdisciplinary learning tool" where children can "practice imaginative and speculative thinking" (1982, p. 15). Writing in journals then is a way for children to make their learning active. Children begin to construct their knowing in a personalized way. Emerging thought is valued, not evaluated. It allows us to respect tentative ideas. (Calkins, 1991).

Berthoff expands on the idea of the journal being a place for tentative thought. She sees the need to "forestall closure" (1987b, p. 15) because meaning continues to emerge in a dialectical process of looking, reformulating ideas, and then looking again. If knowledge is thought to be constructed, this is an important lesson for children to learn.

Voice in Language for Learning

Barnes, one of the early pioneers of the Language Across The Curriculum movement in Britain in the 1970's, suggests that providing opportunities for children to participate in "dialogue that matters" (1980, p. 10) is also important in coming to new understanding. "Teaching without exploratory talk and writing expects pupils to arrive without having travelled" (p. 13). For Barnes, active knowing leads students towards lives that are critical, confident and responsible. In relation to voice, dialogue 'that matters' would seem to be the salient feature.

Rosen supports and extends the concept of exploratory talk by advocating a curriculum of "retelling in one's own words" (1986, p. 235). Retelling allows the possibility of animation, the possibility of voice, because we say what we know in our own way. Another way to say what we know in our own way is presented by Romano (1990). He gave students the opportunity to explore the presentation of information through multigenre research papers. His students used journals to "play with possibilities" (p. 126), experimenting with poems, plays, and story forms during the research. He sees this as a way to weave together fact, interpretation, and imagination. Each genre provides a different view and different experience in its sharing. He states:

> There are many ways of seeing the world, of showing others what we see. Shakespeare saw the world

> through plays and poetry. I'm grateful that his spirit was indomitable, that no one had the power to compel him to forget those ways of seeing and instead to write only prose chronicles in reporting what he had learned about the Scot and the Dane. (p. 140)

It would seem that with Shakespeare, the 'I' came forth and the voice was heard.

The literature reviewed on journal writing and language for learning emphasizes the value of these activities in acknowledging and developing individual voice.

Summary of Perspectives on Voice

The relationship of the person to the topic appears to be paramount in an understanding of voice (Graves, 1983; Britzman, 1989; Belenky, Clinchy, Goldberger, Tarule, 1986). It is an idea that fits well with my own recounted experience of doing research on evergreen trees as a child. It was a topic that I loved. The relationship of the writer to the words is also of primary significance (Elbow, 1981; Britzman, 1989; Rosen, 1986; Romano, 1990). I connect this understanding to experiences working with my student on his topic on eagles. He was 'telling' about his research in his own way. It engaged him in a deeper relationship with the work.

But in order to form a relationship with their experiences, persons must have a sense of their own selves. A sense of caring for oneself and then for others is at the heart of voice (Belenky, Clinchy, Goldberger, Tarule, 1986). Personal journals and notebooks (Craig, 1983; Calkins, 1991) and opportunities for meaningful talk (Rosen, 1986; Barnes, 1980; Belenky, Clinchy, Goldberger, Tarule, 1986) help to lead persons towards a recognition and emergence of self. Spoken and written language become vehicles for connecting the learner to the learned. Self knowledge can also be developed by reflecting on our own feelings, ways of thinking, and learning, when library research work is undertaken (Kuhlthau, 1989; Sheingold, 1987; McAfee, 1981).

It is the active relationship of the learner to what is learned that brings knowledge to life and makes it relevant (Dewey, 1938; Greene, 1988; Sheingold, 1987). This is another way of acknowledging that voice connects the two. We breathe life into learning through voice. It was with this sense of connected knowing that I approached my topic of voice in the research process in a primary classroom. My feelings of the centrality of research that involves both heart and mind were not diminishing.

CHAPTER TWO

Methodology

Introduction

I have used qualitative inquiry, inquiry in which we seek to view "afresh", which requires sensitivity and perception and a valuative kind of viewing (Eisner, 1991). The research is served by the method, not the other way around. The meaning of the findings is represented in expressive ways as well as explanatory ways.

In qualitative inquiry, the person conducting the research is the major instrument whereby meaning is interpreted. Qualitative research in education involves "valuing". In seeking an area of focus, it is important to seek an understanding of our own beliefs and philosophy in education, in order to articulate a particular point of view through which our observations can be filtered. Personal biography becomes very important in carrying out research that has our own "stamp" on it (Eisner, 1991). Writing an autobiography early in my course work enabled me to think about who I was. I was able to develop guiding images of my work as a teacher (Connelly and Clandinin, 1988). As well, keeping personal and academic journals displayed for me an ongoing

construction of my own personal knowledge and beliefs. The self awareness gained intensified my commitment to the research I had chosen to do.

Role of the Researcher

I have chosen the stance of the "teacher as REsearcher" (Berthoff, 1987a). In Berthoff's view, we need to "look and look again" at the information that we have, to create "the kind of theory that is generated in dialogue among teachers" (p. 23).

The last decade has seen much teacher research focused on children's development as writers. This teacher research includes the work of eminent practitioners such as Donald Graves, Lucy Calkins, and Nancie Atwell. Teachers such as Sylvia Ashton-Warner (1963) and Vivian Paley (1979, 1986a) have shared their stories of research in their own classrooms. "The act of teaching becomes the daily search for the child's point of view" (Paley, 1986b, p. 124).

Duckworth (1986) provides a vision of teacher as researcher which opens new possibilities in our relationship with children. She outlines a way of teaching in which children explain what they are learning; the focus of attention and the questions each child asks are personal to him or her. What we might do as teacher-researchers then, in trying to

understand the sense our children are making, might also help children to understand themselves and their own knowledge as something they construct. By creating a context for their voices, we "put them in touch with themselves and each other as learners" (p. 486). They experience the power of being taken seriously.

The Study

Qualitative research begins with evidence of the worthiness of a particular focus, but the design is refined as the salient issues of the situation are left to emerge (Lincoln, 1990).

In this study I assumed the role of a teacher-librarian. This means I was planning and carrying out the activities of a research project with a classroom teacher in a team teaching situation. I worked with a grade one/two class over a four week period. A mutual decision was made to centre the research project around the broad topic of bugs. It would involve language arts, science, and the arts. The children would be able to narrow their focus during the research process and for these children it meant choosing a particular bug to study further. The Focus on Research model (Alberta Education, 1990) was used as a guide. It was viewed as "curriculum potential" (Ben-Peretz, 1975, cited in Connelly & Clandinin, 1988, p. 148). Together, the teacher and I,

through co-operative planning, constructed experiences appropriate for the students which were consistent with our own personal practical knowledge (Connelly & Clandinin, 1988). Initially, the children were working in groups of four. These children had already had numerous opportunities to work in co-operative learning groups over the past year.

Data Collection

"There is a knowledge of a different sort to be gained through empathy and involvement through systematic observation that seeks to understand the experiences of persons, rather than behaviour as objects" (Bissex & Bullock, 1987). Through participant observation, I was able both to give caring guidance as a teacher-librarian and to observe within the lived experience of the research situation. As I worked, I kept in mind Eisner's statement, "Learning to see what we have learned not to notice remains one of the most difficult and critical tasks of the educational connoisseur" (1991, p. 77).

In order to get at the meaning of the children's experience of the library research process, I used field notes, audio taped conversations, artifacts, photographs, and the children's research notebooks. I also kept a personal journal and a dialogue journal with the teacher.

I recorded, in an unobtrusive way, notable occurrences and salient quotes in field notes during and after class time. Later, I attempted to reconstruct the experience to incorporate rich and vibrant detail of setting, ambience, character, and events--providing snapshots of the experience. I shared much of these reconstructions with the teacher, through informal conversations and in our dialogue journals. As well, my notes from the planning sessions with the teacher were kept.

At the beginning of the study, in an attempt to build rapport, I visited the class. I shared a story, and followed the children during their regular afternoon activities, striking up conversations here and there. It also gave me an opportunity to think about which children I might like to group together to view more closely. The teacher informed me that the children were very comfortable about having other adults in the room. It was a familiar occurrence for them. After discussions with the teacher a group of children were selected for my initial obser ons. This is explained in detail on p. 53. I audiotaped the children's informal conversations with each other and with me as they tried to construct their own meaning through the research project. I tried to transcribe the tapes the same evening while my memories of the day's events were fresh. I also collected and copied (with permission) the notebook entries which the children made to record questions and to reflect on activities during the research process.

The teacher I was working with was interested in both the collaborative nature of the library research process, and the experiences that the children have during a research project. The teacher and I were able to share our reflections in a dialogue journal (Edwards & Walker, 1990). In dialogue, we attempted to construct an understanding of voice in the library research process and how it might be expressed.

I also kept a personal journal during my research (Progoff, 1975). It gave me a place to speculate, to reflect, to pose questions, and to gauge the research. In this way, the journal became one of my tools--a tool of the imagination.

Presentation and Interpretation of Data

This qualitative study will be expressed in a richly described narrative form (Eisner, 1991). This decision is based on the view that qualitative research is concerned with meaning and understanding. The problem becomes how to best "re-present" the experience to the reader. All the layers must be there--a holistic picture, crafted to portray aesthetic, emotional, moral and cognitive dimensions. In sharing a story, readers are invited to take from it something that makes sense for them. In attempting to interpret and to draw themes from the narrative, we search for refined understanding, but we also lose the story as a

whole. In this sense, Eisner (1991) sees the drawing of themes as a tool. It becomes a way for the researcher to manage the ideas which start to surface again and again from the material gathered. For my purposes it provided a way to structure and communicate my point of view. Time, for example, became an important theme illuminating my understanding of voice in the library research process.

The stories I constructed were supported in structural corroboration through the multiple data sources I used to give credence to the interpretation (Eisner, 1991), to develop consensus or agreement that this could happen. "Story creates an atmosphere in which it (truth) becomes discernable as a pattern" (Lopez, 1989, p. 69). A form of naturalistic generalization occurs when the themes "imbedded in the particulars" (p. 103) of a story have the capacity to illuminate the whole (Eisner, 1991). The reader may draw inferences that fit his or her own situation. It is acknowledged that the perspective gained in this study is tentative. It is limited to both the time and place and people in this study. Although the perspective is limited, it is also unique. I hope it will contribute to an understanding of children's experience of the library research process.

Ethical Considerations

Noddings says that, "In educational research, fidelity to persons counsels us to choose our problems in such a way that the knowledge gained will promote individual growth and maintain the caring community" (1986, p. 506). It is my assumption that in working with the teacher and the children in a research project made meaningful through the personal involvement of all participants, Noddings' ethical principles were adhered to. Permission to conduct the research was sought from the school board, principal, and classroom teacher. Voluntary informed consent was obtained from the children's parents. (See Appendix 1). In addition, permission to use photocopies of the children's work was asked of the children themselves. The stories presented were shared with the teacher for verification and comment. All efforts were made to protect the anonymity of the participants.

Introduction to Chapters Three - Five

Chapters three through five represent the three stories I have chosen in order to express my understanding of voice in the research process. The stories may be read in any order. I think of narrative as a

weaving. To get a richer, deeper fibre, I am telling these three stories. They all speak to voice in the research process but they are taken from different perspectives. I present my research story, the story of two teachers as researchers, and the story of the research project work with the children.

The stories were written with an element of trust at work. I was not writing with a set of answers in mind, although I anticipated themes embedded within. Perhaps this is how artists feel when they sculpt or paint a picture. The threads running through the three stories would allow me to see a pattern on the cloth, a pattern of my understanding. This will be shared in Chapter Six.

Throughout this thesis, there are references to resources used by the children in the research project work. These resources are listed, with full bibliographic information in Appendix 4.

CHAPTER THREE

My Research Story

Introduction

I have begun this chapter with a story from an autobiography I wrote in the first course I took as I embarked on this research journey. It was in that course that I began to see that my own life experiences were shaping the way that I was seeing the world. I would reflect on these experiences in order to come to my new understanding. I found that when I was given opportunities to share stories with others, they would help me see things about myself that I had not thought about. These were affirming experiences for me and they were giving me a greater sense of who I was and what mattered to me. I have therefore decided to include some memoirs from this autobiography and from a personal journal kept in another course about using a journal as a research tool. This reflective writing was bringing a new awareness to me. I was starting to feel truly alive. I tried to re-cognize what I was experiencing in a poem (Appendix 2).

Memoir #1 Journeys

I remember as a child wanting to be a researcher when I grew up. In my mind I kept a picture of myself. I was looking into microscopes and discovering cures for people's diseases. A few years later being a missionary in far away lands began to appeal. The possibility of becoming a teacher never entered my mind. School for me was at times exciting, sometimes boring, and oft times bewildering as I hopped across the country and abroad in a succession of educational settings. It was a topsy turvy existence. Often I was out of 'sync' academically. I was either ahead in English or behind in Math, thrown into third year Latin without the first two years, or entering grade five with a Shakespeare play under my belt. I never really got to the point of actually thinking about how I was doing. It was really a case of survival.

But although my outer life was haphazard and hard to predict, my younger sister and I would create other lives, games of pretend, that gave us a sense of security and control. The stories we acted out in our play together changed as we moved from place to place. In England, my sister and I had a kind of fairy club rather like Brownies. We played outside in our old-fashioned English garden filled with rose beds, a pond, and cherub fountains. In Victoria we used to climb in the wild places, the rocky hills bordering the Pacific Ocean close to our house.

There we could grind seeds for flour, make primitive shelters between the crevices and tell time by the position of the sun. When we moved to Ottawa, sports became the focus of much of our play together.

Reflection

In childhood, the places where I lived, had an impact on the games that I played. In later years, circumstances again were steering me toward the choices I would make. This time I was choosing teaching for a career. I was a graduate with an Arts degree, newly married, with a husband still in school. I began my teacher education program and my first teaching job in the same year. Survival was looming large on my horizon once again. But I was surprised to find out how much I enjoyed teaching and my relationships with the children.

In writing memoirs, I have seen how my teaching has been shaped by my own experiences as a teacher and a learner both in and out of school. I recall now, my school experiences in England.

Memoir #2 The Arts

When I was eight years old I sailed with my family on a trans Atlantic voyage to England. My father would be working at the Royal

Naval College at Greenwich. My sisters and I would experience British culture.

What I remember most about school in England was the emphasis on the arts. For example, art was a definite subject and it included art history. Art class at my school was set in a large bright room with picture windows to the grounds outside. There were easels and potting materials. We all had smocks to wear. We drew still life and painted landscape. We made charcoal portraits, clay pots and figures. Our art work was looked on seriously. We would go on field trips to London to see the masters. All this was a far cry from art experiences in Canadian elementary schools, which tended to take the form of a craft to be made on Friday afternoon.

Of further significance, I believe, was the English program. It was more like literary arts. When I thought of the equivalent Canadian elementary program at the time, I could not remember much more than spelling. I don't remember reading 'real' books, except out of class. In England, however, we read Lochinvar and Midsummer's Night Dream. We even performed a scene from the play outside on the lawns as part of the school fete. I was a fairy and I wore a tunic of soft yellow silk. I had garlands of flowers in my hair. I was in heaven. It was just like playing with my sister.

Later, when I was fourteen, I went back to England again. I

remember MacBeth and A Tale of Two Cities. We all took parts, and the teacher, who was somewhat eccentric, rendered dramatic readings of the plays and stories we were learning about. We weren't doing a lot of analysing, and if we were, we were definitely balancing this with the sheer enjoyment of the verse and the story itself.

What a disappointment when I returned to Canada in grade ten and was handed a plain heavy bound English text. It consisted of parts of stories, condensed books, and fortunately a few notable short stories and poems left intact. But it was very flat. The life had gone out of English classes.

Reflection

It is ironic to think that my experiences in England were showing me that it was my imagination that made my learning real--bringing it to life like a magic wand.

Years later, in my mid twenties, the openness, the 'come what may' attitude and existence that I had lived as a child would come to an abrupt halt. Suddenly I had a need for control--in my outer life. I will recount my experience with a program called Move and Grow.

Memoir #3 Move and Grow

Move and Grow was the name of a preschool gym program I developed with three colleagues in Halifax. The purpose of the program was to remediate sensory motor deficiencies, which in turn, was supposed to lead to reduced risk of learning disabilities in school age children. Our program grew out of my need to find a 'cure' for our younger son's exceptional and delayed development. I had made numerous pilgrimages to the local public library for materials. I had been put in contact with a number of helping professionals--speech therapists, occupational therapists, and physiotherapists.

A group, including myself and a fellow teacher, joined forces with two therapists who had been working on infant-stimulation programs for premature babies at the university hospital. Our board consisted of friends in the fields of law, medicine and psychology. They were all cause-oriented people, and would gladly donate time and expertise where needed.

We read avidly, especially the works of occupational therapists researching in the area of sensory integration and learning disorders. I was amazed that people in others professions could know so much about preschool development that might have significant implications for the school-age child. We learned about certain reflexes, the vestibular

system, and the integration of sensory information. It was a little bit intimidating. Often I, and my teaching colleague, would wonder what we were contributing to the situation.

But it was certainly all very scientific stuff. This efficient diagnostic/prescriptive approach was very compelling. I latched on to it immediately.

We were able to acquire a large rent-free room in an old two-story wood-framed school building. We bought equipment with a small grant of money. We had a bright red plastic slide, a gigantic ball for balancing, cloth tunnels for crawling through, rocker and scooter boards and wading pools filled with styrofoam.

We advertised the program, made home visits and then ran the program three times a week as volunteers. The children came with their parents and we all had a good time. The children did make progress in the motor development area but of course the big draw was that this gain in sensory motor development would then filter upscale and potential learning difficulties at school age would be virtually eliminated.

We spoke at meetings, a conference, and wrote up grant applications. The program started to take on a life of its own. There seemed to be an urgency to spread the news. We ended up speaking with a government minister. Although we were politely received, we were not able to convince this man of the crucial importance of our program.

We were quite taken aback! We were so sure we were on the right track with our methods firmly grounded in scientific knowledge!

Shortly after that episode I moved with my family to Edmonton. I did not really regret this. In stepping back, it was almost like I was being freed by this thing that was starting to consume me.

Reflection

The sensory motor integration theory was attractive because it was rigorous and unambiguous in the scientific sense. Specific reflexes could be elicited by specific stimulation, and success was visible but in a narrowly defined way. Psychological function is so much more complex. The idea of an uninterrupted line from sensory to motor to cognitive development was appealing. But I began to realize, living with my own son, that the picture was a lot more complicated than that. It is yet another irony to me that, in Halifax, my ability to learn was getting shut down by the fact that I thought I knew something.

It has been a different story over the last number of years--years that I have spent learning, over and over, how to be a teacher. Working with small groups of children in a resource setting has afforded me the opportunity to play with different methods and reflect on, rather than be captured by, theories. I was always trying to come up with an approach

that would work for a particular learner. Creative approaches were valued in this context and that has suited me well. When I had the chance, I would discuss my ideas with my colleagues, but now I feel I learn best from the children. I will share the way I have come to realize this, in a story about our son Matthew.

Memoir #4 Matthew

Our son Matthew is special. He was born with some developmental and motor difficulties that made his progress through the normal childhood milestones different and hard to predict.

One of Matthew's greatest accomplishments was to learn to ride a bike when he was nine years old. It has been one of his greatest joys--the thrill and freedom of unencumbered movement through space and a feeling of having control over events instead of being controlled by them.

Matthew went through a lengthy training-wheel period. He had a small blue Raleigh bike with lots of chrome and all the bells and whistles. He spent many an hour riding his bike on the paved paths inside our fenced yard and along the neighbourhood sidewalks with my husband and our Springer Spaniel dog.

Matthew was perfectly happy playing with his bike in this way and there seemed no rush to take the training wheels off, just yet. He liked

to hitch his bike to his wagon, ride through the mud puddles when it rained, and wash his bike and shine it to gleaming condition. He loved his bike!

Eventually we asked Matthew if he would like to ride his bike without the training wheels. He said yes, and we were ready. We fitted Matthew out with hockey knee pads, a helmet, and thick gloves. We made our way over to the grassy school grounds near our house. If there was to be a crash landing, it would be relatively soft.

We arrived at the field. I was on one side of Matthew and his Dad was on the other. Matthew started off. As he got going, we each let go--one at a time. We were coaching, congratulating, and encouraging him as we ran beside him. But he was off, making his own way, riding on his own!

How proud, how exhilarated, we all were. We had no idea whether riding independently would be a possibility for Matthew. Of course, I'm sure Matthew never considered anything less. Once again, we were learning from our son.

Reflection

I was learning to see my role now as being a facilitator, a support person, not the one in control. I realized that it is the learner who is the

one who finally does it. For Matthew it involved a great sense of commitment--a spirit, a voice, that did not have to speak in words. It seems as a teacher, I could help to bring the learner to this point, and to deepen the experience.

What I learned to see more readily, working with children experiencing difficulties, now seemed important for all children. But how could I help children to be what they were meant to be, to become what they were meant to become? Through care and support I could help children feel recognised, but all children are unique. How could we all gain by the special way each child, each person, interprets their own world?

As a teacher I felt I needed ways to help the children do this. I thought back to my own experiences as a child, the ones I had written about in my autobiography. I wondered if I was doing this when I played with my sister. I know that in school, when I did art, when I wrote stories and when I did research projects, I was interpreting the world in my own special way.

Becoming a Teacher-Researcher

My classroom, a resource room, began to display my commitment to this way of thinking. It was filled with clay and paint, props and

puppets, and children's own published writing. The walls were covered with poetry and the shelves were filled with literature and information books and other resources for research project work. It was not difficult to put on a new hat and move in to the library and start thinking about working this way with all children.

As I started my university course work for my M. Ed. my interest in research projects was further piqued by learning about a process approach for school library research. Here seemed to be a context for imagination and wondering, where children could put their own stamp on their work. But if I was going to look at the research process I needed to figure out what angle to take.

My exploration through autobiographical and journal writing would help me with this. If I paid attention to all of this it seemed likely that a topic would emerge that was right for me. I thought about self concept, celebration, critical thinking and expressive writing as possibilities for exploration in the research process. I was doing a lot of reading and talking as well as the writing. The words of the educator and philosopher Maxine Greene struck me deeply, as had the ideas of Elliot Eisner. The word voice started surfacing. I kept gravitating towards it. It seemed to be the stamp, the signature I was thinking about. My research was to be an exploration of voice in the research project work of children.

I would use the Focus on Research model as a guide to the research process because I believed in an integrated developmental approach. I further liked the continuity implied in a process that could be adapted for children from grades K - 12. As well, this was a model developed at a grassroots level, from the work of teacher- librarians working with students and fellow teachers. It would influence my decision later to take the role of a teacher researcher for my research work.

As I continued with the course work in my program I was always relating the new ideas and information to my own experiences and to my thoughts about voice in the research process. I would do this through conversation and through the journal work which formed a large part of many of the courses I was taking. It felt like playing again, all this story telling and messing around with ideas. Sometimes, in my journal particularly, I would come to almost startling revelations.

One of these occurred when I was asked to write about a time and a place where I felt I was truly learning.

Memoir #5 A Place for Learning

I see the image of my sister's farm kitchen in Nova Scotia. It is warm and cosy. There are old pine cupboards, an elegant old wood

stove, dressed up in polished silvery trim, and large windows to view the hills and fields outside. The stove is on, so the comforting smell of burning wood is all around us. My sister and I seem to be involved in some kind of ongoing conversation through the years. We were very close as children. We played together a lot because my family travelled and moved a great deal when I was growing up. Although we now live quite far apart we've managed to see each other at least once a year. We always end up talking very quickly about what we feel are very important issues. We are both very lively and passionate in our conversation, and it never really finishes.

But shortly after this entry in my journal work, I recalled another image. It was my first memory of school.

Memoir #6 School

I see myself in a grade one classroom. The school seemed very large. It was made of red brick, and it was two story, with huge, spreading maple trees surrounding it. But there didn't seem to be any windows in my class, or if there were, they must have been too high for me to see out when I was seated at my desk. I don't remember anything of beauty, except for the shiny long black hair, plaited in a braid, of the girl who sat in front of me.

There are rows of small desks, filled with children. It is the beginning of class time, morning, and the teacher is walking up and down the aisles, handing each of us an oval shaped, brown, transparent pill. It was cod liver oil and we were each supposed to swallow it. I was very apprehensive as I worried about whether I would be able to swallow this pill without water, as was expected of all the children.

I also remember flash cards for arithmetic. The teacher would hold them up and we were called on, for the answers, up and down the rows. It was another thing to make me nervous. What if I didn't know the answer, what if others didn't?

Reflection

These two images were in such stark contrast now in my mind. The grade one setting seemed to be so mechanical, like an assembly line. There was a pervading sense of uniformity, not individuality.

It was my first experience of being in a group relationship, where judgement and comparison could be made. It was a very different kind of relationship than the relationship of trust that I had with my sister.

I realize also that there was nothing to sense aesthetically in that classroom, unlike my sister Ros's kitchen, where we both became very animated in our conversations.

Choosing Voice as a Focus

These recollections of experiences were bringing me ever closer to my topic of voice. It was with a growing sense of commitment that I began to focus in on the work of the research proposal. I had to think about methodology and review the literature with more intention now.

Reading the work of Vivian Paley and Lucy Calkins, Nancie Atwell and Eleanor Duckworth reaffirmed in my mind the importance of listening to and observing children. Being the kind of teacher-researcher that these authors were appealed to me. It seemed so natural. As a teacher I always felt that I learned so much from the children. Now I would be documenting and purposely reflecting on these experiences. And those experiences would have legitimacy because I would be there, participating fully in the classroom experience. It would be easier to find out what was going on. Taking the stance of a teacher-researcher then, could help me become a more responsive teacher. It was a good enough lure for me.

As I prepared to write my literature review for my proposal, I decided that I could not go in a straight forward direction with my focus on voice. ERIC, for one, is not set up for metaphors. The entries under voice relate to speech therapy disorders. I started to gather literature which seemed to be related to the topic instead. I madly devoured books

and articles underlining, making notes in margins, pulling quotes and recording my thoughts. I went back to books that I had read months before when I first began to explore for my focus. I started making collections, sorting ideas physically into stacks on the floor. The writing took place in surges which often went until 2:00 a.m. I felt too absorbed to accept a dinner party invitation at this time. I thought I'd probably make poor company. A pot of rice on my stove boiled quite black. The ringing smoke alarm had not registered as the words flowed out on to the paper.

I waited to present my proposal with a mixture of excitement and anxiety. When the day came it was gratifying and exhilarating to have the attention of fellow grad students and staff members at the table. Comments and questions helped give me a clearer understanding of the task ahead. The smiles and good wishes gave me the support. It was strange to feel like I was finished when really I was just beginning.

There was a lull as I awaited clearance from the Ethics Review Committee and permission to approach the school officially. Several phone conversations and an initial meeting with Heather, the classroom teacher with whom I would be working, sparked my enthusiasm once again.

Being A Teacher-Researcher

It was wonderful to meet the children. They were very welcoming. They were eager to share their ideas and experiences. Their animation revived my vitality.

My first sense of being a teacher-researcher was that this was going to be harder than I had thought. I found on the first day I had to pay close attention to what the children were saying and asking and at the same time be a full participant with the children in the reading and interpretation of the story. I would jot down brief field notes when I could. This would usually be when Heather took over for a few minutes or during transitions, at recess or immediately after school. When I got home in the evening I would expand the notes with details of setting, the children's actions, and expressions of feelings.

One of my first tasks was to choose a few children to follow more closely through the research experience. I observed and listened to the children and I talked with Heather about possible choices. All the children would be interesting but in the end I was attracted to some children who seemed to be gaining a sense of confidence as the year had progressed. Heather had spoken about Kim and the twins Amy and Erin. She also spoke about Robert whom I had initially considered and then changed my mind. He seemed to stand out a little too much. But

Heather's comments struck a chord. Robert was full of exuberance and wonder. It was just that he often seemed frustrated. My feeling was that these children could probably benefit from the rapt attention of a curious adult so that, if nothing else, their participation could have a positive affect on them. But a focus on these children would not exclude me from watching, listening, or helping other children throughout the study. It was the beginning of decision making which always considered the children and Heather first over my research situation. It became a rule that I followed. I saw it related to the ethic of caring that Noddings (1986) believed in so deeply with regards to research in education.

As the study progressed I found it more difficult to keep track of my small group of children. A lot depended on what activity they were engaged in. During exploration the children could be grouped together but when choice became a consideration (their chosen bug or presentation format) the group dynamics changed to reflect that choice. I had to change my pattern of interaction. It would have been nice as a researcher to keep the group together for my own convenience but this would not have been the natural situation, neither for the children nor for the teacher. I wanted the situation to be as close to the real thing as possible, even if it meant dilemmas for me as a researcher.

So my focus changed from a close-up of my original group interacting together to more of a wide angle shot of the children

interacting in other groups. The trade off was seeing the chosen children a little less but seeing other children more. It was a dappled view. It had some depth and some breadth. To me it seemed like the way it really is for a teacher in a classroom.

It was fascinating to be able to explore the way the children were responding, to try to get inside their minds. The more I listened to try to understand how they were making sense, the more I found myself caring about them. I was getting to know them so much better. My interaction was much more geared to what the children were actually saying, more like a conversation. It was a subtle difference but I think an important one. In the past I think my usual listening stance as a teacher has been more like polite acknowledgement with behavioral considerations colouring the interaction: "What a careful job you are doing cutting out the butterfly" rather than "Why did you choose to cut out the butterfly?" Of course, we have been taught to give pointed praise. I wondered if this was inhibiting us from learning from the children.

I thought also about set curriculum. Imposed objectives could so easily interfere with the relationship being built between the children and their teacher. For example, when teachers focus on comprehension questions to make sure children have read the passage or retained the information, they might miss wondering together what something in the passage might mean. In wondering together, the teacher and the child

are on more equal footing and the relationship has a chance to grow.

As a teacher-researcher I learned to change my strategy in order to continue to respond to the children's changing context. One of these occasions occurred in the library as the children gathered more information on their chosen bugs. They were sitting at the round tables bent over pictures, reading from books, scanning pictures from magazines and peering at slides and filmstrips, all in an effort to look for information relevant to their questions. They were very involved. My presence became one of support. They were intent on having captions read or words spelled. I had very little time to ask them what they thought and it seemed like an interruption when I did. I wondered when I should be turning the tape recorder on. I looked around for that wide lens view and there it was--the single mindedness, the drive, the commitment. This was what I needed to be taking note of. It was a shift in focus.

I loved having surprises. These turned up when I would think I was doing something for a particular reason and then something else would happen. It wasn't that my idea wasn't valid but that there was so much more involved when you could see it from a different stance. In my personal journal I wrote:

> My original conception of voice in research was heart and mind. But I was worried at the beginning of the research that the students would not necessarily be able to choose topics that they cared about because they were so young. Poverty, endangered

> species etc. are probably not an issue. So I chose the 'or something that they know about' route and decided to have a long exploration time so they could be working from some sort of familiar personal knowledge base. But as it turns out, it seems that as they have become more involved in exploring, they've become more interested and more caring about what they are looking at. So now the children are I think in a position to research something they care about. This is so neat! (Personal Journal, April, 1992).

Another one of the surprises came with the stories and poems which we included throughout the research project. Traditionally these would be included to boost enthusiasm and ignite interest in the general topic, a motivator to get kids to want to do the work. But I thought of Brinckloe's story, Firefies, where a little boy was enchanted by the fireflies he saw outside on a summer's night. He wanted to catch as many as he could. But his joy as he watched the fireflies flitting in the mason jar was soon tempered as he realized that in order to keep them alive he could no longer keep them captive. It really touched the children, drawing them closer to the work emotionally and morally. Now the motivation started to come from within and the research experience became richer, more humane because values were expressed.

Another surprise came as we 'reviewed the process' after various stages of the research. This whole class reflection of what was done is supposed to help children come to a kind of metacognitive understanding of the research process. But it seemed also to be taking on the aura of a celebration. The children were proud to see all that

they done. It was written on large chart paper and displayed on the walls of the classroom. It seemed that I was developing a fuller, richer view by acknowledging the aesthetic aspects involved in the activity.

Surprises would lead me to ask new questions. I kept track of these in my personal journal. Using literature to get children to do the work now seemed suddenly insidious, like using well loved children's stories to teach phonics. I was becoming disturbed and uncomfortable. Everything seemed so fragile all of a sudden. Might caring be the difference? I wondered about new solutions, new trends. In my journal I wrote:

> Is this what we should think about everything, the dark and the light side? There is no perfect solution. Everything can be done for better or for worse. The solution can be looked at very differently and very different things can come of it. We always assume solutions are good. Why don't we realize that it's no different from anything else. Is this an awakening? (Personal Journal, April, 1992).

Later in my journal I came back to this idea again. I wondered about looking and talking about the moral implications of solutions. What about research which is all mind and no heart? Questions would keep surfacing.

I've continued to use my personal journal. It has been an ally, something of a friend and a solace. Ideas often occur while I'm writing, or just before going to sleep, or during walks with our golden retriever in the woods of the river valley. I try to capture these thoughts when I can.

They are often fleeting and may seem unrelated but I have a feeling that I may see connections as time goes on.

I couldn't imagine doing the research alone. I have needed a relationship with others. They have provided me with different kinds of support. Some days I would literally bounce down the hallways and along the campus pathways. It would be after a meeting, which really meant a conversation. It was usually with my advisor Dianne or with other encouraging staff members. My stories, my ideas, my questions, were on the table. I felt important. It must be a luxury to have this kind of attention I thought. It was more like my family, my Mum when I was growing up, or my husband now.

Talking with other students would also help me figure out what I was trying to do, what stories I would want to tell. I remember a conversation with another woman student. It went something like this:

> "How are you going to do your research?"
> "Well, it will have stories but it isn't a narrative inquiry as such. I'm going to be a teacher researcher, but it isn't really action research in the traditional sense. It's qualitative," I said feeling safer with the broader term.
> "Oh, so it's a kind of mixture."
> "Yes I'm constructing it, kind of like what I do when I teach," I replied.
> "Everyone seems to do it their own way, a little bit of this and that," she said.

It was great to talk to her, to see that she understood the way I was thinking. I didn't want to be pinned down, like a butterfly on display.

I've been going to a research group which meets every Thursday. People attend when they are able. It is a small band of researchers, mostly students and interested staff. We share problems, listen to each other, and participate in discussion. We always start by naming ourselves and the work we are engaged in. It's funny, I think I've described my study differently each time. We have found that there are many different ways to do field notes, interviews or write stories and there are always questions, dilemmas and ethical considerations. We don't seem to lean heavily toward solutions but somehow the struggling together provides a network of support.

My relationship with Heather during the actual study was of inestimable value as a researcher. Because we shared the same experience our talking and writing together could be that much more honest and true. We would each have our own perspectives but the point of reference was the same. We had both been there. The afternoon the children worked with an artist-in-residence, Heather came over and whispered that the children had picked up a lot of information incidently while we were exploring from a broad base. They knew for example, that if you were making a bug, it would have to have three body parts and six legs. I had been making a similar observation of the children and I wrote in our dialogue journal about this that night. I liked airing my ideas:

> Some people think kids do nothing but incidental learning--picking up what is most important to them or what fits with their experience. This seems to tie in with our previous conversation about two people both having quite different notions about the same thing and our trying to construct together what is going on. If kids do this sort of thing then presumably letting them choose their questions and the kinds and forms of information most relevant to them would make sense I suppose ... Maybe we'll learn more about this next week.

I concluded, "It's really helpful to me when I see you are noticing similar things to what I'm noticing. I think it gives validity to the observations," (Dialogue Journal, April,1992)

After the research project was over and I returned to the quiet of my study at home, I felt like I had been set adrift. I had plugged into the energy of the classroom while there and now the only way to get that feeling again was to listen to the children's voices on tape, look at their writing and reread the dialogue and personal journals. When I did this the vitality of the project returned. How could I capture this sense without shutting it down? I thought about the story, Fireflies, again. Yes, this was my dilemma.

I had planned in my proposal to present the research experience in story form. Now, more than ever this idea made sense. Amy's words, when she was peering at her worm, were transcribed as "What is it doing?" But we do not know that she was squealing this! Her curiosity was coming out at the seams. There needed to be a way to tell much more. A single sentence is only the tip of the iceberg but a story would

allow me to get into the experience to share in the moral, emotional and sensory dimensions at work.

So, how to go about this? I would have to be cautious not to be colouring the stories too much with my own interpretation. I might miss something later by labelling too soon. I would try not to tamper too much, trusting that the actions could speak for themselves. But I couldn't just retell events either. I would lose interest. It had to be something I created. Perhaps it was what I selected and how I put things together.

The data sources for the stories are listed in the Appendix 3. For this study I had decided that I would tape children's conversations with me and with each other. Conversations seemed to be more natural than interviews with such young children. It would allow me to take my cue from them a little more. The conversations revolved around what the children were doing at the time--such things as responding to a story, talking about their dioramas, looking at information books or observing bugs. The children spoke openly and honestly in their interactions. I always transcribed as soon after the time of taping as possible as it gave me an ongoing sense of what was happening and I could share these thoughts with Heather. Because this was conversation, there were often interjections, or one child might start before another was finished. I found that I would rewind the tape a second or so back and hear

something completely new. It was a vivid illustration of selective hearing. I thought back to my journal entry to Heather about incidental learning. Something else to think about.

As I waded into my data--expanded field notes, journal entries, transcriptions, children's writing and other artifacts--I would try to immerse myself, to let it envelop me. Then I would try to relax to see what rose to the surface. I would write all the ideas down quickly. It seemed to be a variation of some of the Progoff journal work.

As I started writing I found I was making rules for myself to help guide me in selecting what to include in the stories. I liked using as much primary source material as possible, the tapes, journal entries, some pictures and children's own handwritten pieces. The sensory stuff seemed to give my writing clout. Another rule was to include any observation Heather and I made when it occurred in the action that day. For example we both noticed during one of the Show and Tell episodes that the children were asking different kinds of questions depending on whether the item they had brought was manufactured or in its natural state. We both picked this up as we watched and listened to the children. Our view then is expressed in the research story because the observation was made at the time. It is not left to be pulled out by the reader although other things can be.

There is a magic in my researcher's story because it doesn't really

end. I have been touched by an experience which will enable me to see things in a way I have not seen before. I will ask new questions. My relationship with the children I teach will be richer because I have tried to understand them more fully. It is an experience I will cherish.

CHAPTER FOUR

Working Together

Overview

The research took place over a four and a half week period from mid April to mid May, 1992 during fourteen afternoon sessions. In March, I shared a few telephone conversations, my research proposal, a few books and an initial meeting at the school with Heather. I also met with the school principal during this time and shared my proposal with her. At the beginning of April, before the research would officially begin, I was invited into the classroom for an afternoon, to get to know the children and to have them get to know me. Heather liked having parents, teachers, and other adults in the classroom. The children were used to having visitors. We planned that the research sessions would take place in the afternoons.

We exchanged the dialogue journals every few days. There was no rigid schedule and I took the lead from Heather. I was cognisant of the amount of time she was giving me so I needed to allow for flexibility here. The entries ranged from one and a half to six pages long. Over the four week period seventeen entries were made.

Introduction

What is it that they say about serendipity? Does it bring good fortune? A set of circumstances was looming up beyond my control. A friend and colleague whom I had made arrangements to do my research with was no longer available. She would be moving with her family out of the city. However, Heather, another teacher at the same school had shown an interest--a colleague from a few years back.

It wasn't long before I was getting very excited about doing research with Heather. She was interested in the whole idea of library research work and a process of learning to learn. She thought this type of approach could be meaningful to a broad population of children.

A kindred spirit, I thought. Heather had worked in special education for many years. She had been highly successful in her professional helping role. But she had begun to tell a new story. "Over the past six years I have been telling the unfolding tale of how I have come to talk about inclusion rather than exclusion for children with disabilities." (Personal Communication, 1992). She spoke of an awakening that first took her by storm when she attended the McGill Summer Institute on Inclusive Education in 1986. While there, she met several renowned professional speakers sharing personal stories of their own experience as people, and with people, with disabilities. As Heather

listened and spoke with these people, a fuller, deeper understanding, more than just the professional view, was unfolding. My experiences and Heather's too were leading to an ever growing awareness that each of us has something of value to share but perhaps what we need are more ways to honour and respect each person's unique contribution.

She was also doing graduate course work and, like me, she was finding that reflection and journal writing were becoming acknowledged facts of life. Or was it that life was being acknowledged by these facts? I felt grateful and fortunate that Heather would give of her valuable time and share her ideas with me. I often felt guilty. She did so much for me and the children. Throughout the research she would continue to tell me that she enjoyed the opportunity to work with a colleague and that she felt she would be gaining a lot by the experience too.

The Classroom

The motto in Heather's class placed squarely above the front black board in bold letters is "Together We Grow". The children have worked this year on specific aspects of co-operative learning. A 'T Chart' is visible at one corner of the blackboard where the children have supplied the written responses:

Encouraging Others

Sounds Like	Looks Like
I like what you are doing.	Hug someone.
I'll help you.	Pat their back.
Your work is nice!	Sharing materials.
That's good work.	Looking at them.
I like your writing.	Shaking hands.

The children's desks were arranged in clusters of four. A large round work table was placed near the entrance at the front of the classroom. This was where I sat when I was observing and where Heather and I sat to talk and make plans. Heather's desk was located at the back of the room. I never saw her sit there during class time. There was a reading/listening centre with an author's chair and shelves of storybooks and tape recorder on the left front side. Shelves along the window side were filled with writing paper for story writing, diaries, and other materials. A math centre with manipulatives and real money in the cash register was located at the back of the room along with the coats and cubbies area. Along the other side were more shelves for collecting material (books, artifacts) for whatever theme was being explored at the time. It was here that we housed the ant farm, the compost worms, the children's own books and magazines about bugs, an assortment of pictures and specimens.

Of special importance to Heather was the entrance to the classroom. Every child in her room could find their name printed on the classroom door. Each month a theme related to season or classroom work would be reflected in the name design for the month. Twenty eight crawling worms appeared during the month of my stay.

Heather told me that at the beginning of the year the twins, Amy and Erin, had not wanted to read books and Kim showed very little confidence. And there were other stories. But now, looking around her class, she said she felt a tingle when she saw the children caring for each other. "These same children could have spent the year fighting with each other," she told me. Silent children had become learners in this classroom as the year had unfolded.

Each afternoon started with Show and Tell. Heather and I both thought it was important to keep this going. There was a schedule of four or five children who shared each day. There was a set routine and the children had this down pat. A child would arrive at the front of the room with his or her treasure, tell a little bit about it and then ask for any questions. They were each allowed to respond to three questions.

Much of the time the children brought in toys or stickers. The questions centred around asking what their favourites were, where did they get it, and can you show me how it works?

We were particularly interested in anything that we thought might

relate to the bug research. One day Shawna brought in her nature magazines. The children were asking questions about the frog on the front cover. Essa brought in an information book from the library which told about ants in the jungle. Kim rarely brought something for Show and Tell but one day she came up to me and showed me some stones she had found outside. She talked about their shapes and colours and identified for me the father, mother and baby rock.

Heather and I both started noticing that the material things and the natural things were eliciting very different kinds and quantities of questions. Amy had found a wasp's nest on the weekend and it was a big hit--"Does it look like that when its finished?", "How do they make it?" and, "When do the babies get born?"

When Kevin brought in his ferret, Robert asked if they could have ten questions that day!

Planning

When two people plan together the context is very different from working alone. More is asked of you but the possibilities are greater. I felt a tingle when Heather shared with me in her journal on the first day, that she was finding that the planning together as teacher and teacher-librarian was exciting. "I already see myself being eager to think in new

wa use I don't have to do it alone," she said.

Our first planning sessions were very open ended. 'Nailing things down' would have also shut down our conversation. That conversation in the early days of the research drifted toward 'voice' and what it might mean in a class of twenty eight young children. Opportunities to participate seemed to be a key issue. She talked about her smaller class the year before and I talked about resource room programs, something I was very familiar with. Why did they both seem so beneficial? Wouldn't all children benefit from them? What about studies that say that class size doesn't matter? We decided that having the children work in small groups, as they did in this classroom, partly addressed this but we were still wondering.

Most of our planning took place at a large round table in the quiet of the classroom after the last of the children had left. It became a process of negotiation. I had given Heather a copy of Focus on Research as well as my research proposal and shared some books I thought she might like to read. I read the book on cooperative learning that she had in her classroom. I felt I had to step lightly and delicately. We would inch towards a mutual understanding. Neither of us wanted to run and crash into each other. Neither did we want to bypass each other. We had both had experiences where an idea talked about on a single occasion could conjure very different perceptions and corresponding

practices in class. Teacher conventions seemed to come to mind, but also personal experiences with consultants when a new idea or strategy was being attempted.

This would be different, we felt, because we would be working it out together over a period of time. Heather shared with me that in terms of the research project we were doing with the children, a general to a specific approach was not the way she had been thinking of it but our repeated discussions had brought her closer to this notion. "My ideas are being shaped by hearing your ideas and then fine tuning yours and mine," she said. She spoke for us both.

Our initial talks about things that mattered--the children and how they experienced their learning--led to a willingness to share and be vulnerable. Heather would ask me questions about the research project. How will the children use the research notebooks? Would they be used to gather information or to try to capture the children's voice? What happens if a child chooses to research a bug for which there is virtually no information? For my part I felt I couldn't answer these questions in the strictest sense. It was evolving from the children and their experiences and Heather's input. I felt safe enough to waffle a bit.

Soon after Heather showed me a language arts activity which the children had done using a web format. Later in my journal to Heather I suggested that the children might use the web format for information

gathering, reserving the research notebooks for more personal thoughts and questions.

Planning after the first few days, usually started with some reflection on the events that afternoon or comments about particular children. In turn, our dialogue journals often contained planning suggestions--things that might be useful to bring in, or possible ways of going about our work in the classroom. Our planning sessions and reflective journals contained elements of both.

It was at both these times that we were most conscious of why we were doing something. There would be reasons Theory came up. 'Reviewing the Process' would give the children a metacognitive framework helping children see how they learned. We would choose a general film like Backyard Bugs over a specific film on ladybugs in the first few days to build a broad background knowledge, to keep the exploration open and not narrow things down too early.

As we wrote down the plans each day, the crisp white pages of our binders took on different appearances. I noticed that mine were taking a more haphazard tack. Heather was keeping track of times and spaces better than I. Glancing over, hers seemed more organized, much more like my own plans when I'm planning by myself. I think I was depending on Heather to take care of some of this for me. It was allowing me to be more whimsical. My plans looked more like possibilities.

We tended to plan by the week. We used the natural rhythm of the Monday to Friday routine to incorporate elements of the research process. The first two weeks were devoted to exploration; they culminated in each child choosing his or her own bug to research on the second Friday. The third week's activities centred around using resources and gathering information. The last week's activities engaged children in making their products for presentation and sharing on the last day.

A pattern emerged. Half way through the week we would start to float ideas for the next week--seeds not yet developed. By Friday the ideas would have taken on some form, starting to materialize in our written plans. It was convenient because it gave us the weekends to collect resources when necessary. It fit our style because it meant we never had to figure everything out at once. It would allow us to be receptive to each other and the children. It felt both fluid and smooth at the same time like we were moving together in harmony--it felt good.

Teaching

When two teachers work together as a team in a classroom, it can be both exciting and risky. It makes you pay close attention to the relationship. Questions and fears pop up. Should I be listening to Kim

who's telling me a story or helping Heather get the children ready to go down to the art room? Should I make a comment about Mark who's rummaging through his desk or should I wait for Heather? Am I talking and taking over too much or not enough? These things can never be all worked out in the planning because it is more of an impromptu performance you are in, not a play with the script written out.

Trust became a very important part of the relationship. We believed that we were both trying to do what was best to help each other and the children. We started with that premise. Energy and momentum began to flow from our feelings of connectedness. Heather helped me see this in another way as she wrote in her journal about being a team player. She said that she had always enjoyed working with other people in her class. As a teenager she had done a lot of kayaking. She had always preferred the two or four person kayak over the single boat because she would get energy from others. "These relationships help me to remain focused through other's encouragement," she said (Dialogue Journal, April, 1992). We both thought it would demand tremendous effort to do a research project such as this alone. We wondered how long you could keep it up.

The children began to see our relationship develop as a team also. Some would ask where I was on days I was not scheduled to come in. They shared stories with me. They asked me for help with spelling and

the clincher, permission to use the washroom. They were little things that showed me I was a member of the team.

Not only did we have more energy working together, but we were braver. We were giving ourselves permission to ask new questions, break new ground and follow intuition. We often found ourselves sensing things in the same way. On the afternoon we presented the video Joyful Noise, where artful bugs told their animated stories in lively poetry, the children pleaded to see the movie again. A quick glance over to Heather and the video was clicked on for a second showing. It would have been a harder decision to make on my own. The lesson plans and an urgency to be "getting on with it" might have dominated.

On another occasion, we had planned on having the children write in their research notebooks about the bugs they had collected on the bug walk. They spent the first part of the afternoon observing and talking about their bugs in their small groups. The clock was ticking on the wall but we just couldn't pull them away to sit down and write. I might have felt guilty about this had I been on my own but sharing the decision seemed to give it legitimacy. Keeping to a set path did not seem necessary when something was seen as mutually important. We were able to be more responsive to the children, to allow ourselves to be guided by our feelings and sensitivities toward them.

As team teachers we supported each other's activities. It allowed

us to get closer to the children both literally and figuratively. If I was reading a story, Heather was not at her desk correcting student work. She was sitting with the children enjoying the opportunity to be with them in this way and along with me, listening to their comments and enjoying their responses. At other times, because there were two teachers, we could each take smaller groups or at least get around to meet with everyone if the children were working at their desks. The amount of teacher contact went up for the students.

We were learning by doing. The relationship became, in Heather's words, "like the branches of a tree, moving around each other to form a whole."

Our teaching felt very creative. It was as if we were altogether, children and two teachers making something--music perhaps or a play. It was live and dynamic material we were working with. Heather and I saw ourselves as directors. We could focus in on individual players to hear their voices, their songs, and then swing back to the overall scene, to bring it back together, a symphony of children we had the privilege to lead. It was a score, a script, of rarest value, for it never could be duplicated.

In another way it seemed that we were playing. It was our game, our rules. The work had been done in preparation. Routines were established, the materials had been gathered and the climate set.

Five weeks had passed, and our last Friday came, and it seemed that it was over too soon. I was touched that Heather was having a hard time saying good bye. I had struggled quietly with this the evening before during my journal writing. Well, what was it, we wondered. Why were we upset? Dare I say it? We were having fun.

Reflecting

It was something to look forward to, a gift of ourselves we gave to each other. It was our dialogue journal. We kept it during the time that we worked together. There were no set times for exchange or numbers of entries to make. I took the lead from Heather who was more than generous with her time.

Our conversation spoke of our beliefs and dilemmas, of our questioning and wondering. It brought us closer to each other and closer to the children. It was part of the relationship. It made the landscape more vibrant. I have chosen several excerpts from our script we made to illuminate the nature of these conversations.

We began our journey together with questions related to voice. Our attention was drawn toward Robert, the little boy who liked to play chess and had so much to share.

Pam: Teachers are really put into dilemmas when they have to balance the nurturing and drawing out with the management of "X" number of kids. Size of class might be a factor when learning reflects a constructivist view. As we mentioned, children need to work in different ways. The teacher can't be everywhere at once, but children in small groups can talk, voice their opinions, listen and learn from each other.
I think teachers can be like Robert. We have so much we'd like to say but we are caught in a system which restricts us.

Heather: I agree, teachers are like Robert. I often hear people say there is not enough time to have meaningful dialogue. I sense there is more to it than that. I clearly feel that it is the setting, and setting for me includes the leadership that encourages the collective of people to be interested in wondering. The leadership in the classroom is the teacher. I wonder if part of helping children express how they construct is letting go of control?

Pam: What <u>is</u> the situation we are creating for the children? There does seem to be a need for some kind of gatekeeping and facilitation of social learning, "Thank you for helping" etc. But we also need time to be in conversation with the children, to be part of their exploration. There has to be room for children's response which can then shape the interaction. Perhaps though it is easier to be this way when there are two teachers working as a team and there is a sense of trust between them. If you diverge off the given path, constructing your own way, support is necessary. How can we support children on their paths if we don't also feel supported? I agree with the need to encourage - allow even, children to wonder. Critical thinking for example will be limited to behavioural procedures if the wonder and curiosity are not there. We are initially touched through the senses. They <u>must</u> be taken into account. I think we are really seeing this with the children and their exploration. I don't think enough attention is paid to this, probably because in the past with mainly quantitative research, these things couldn't be measured as such. The mentality prevailed that, "If you can't measure it, it doesn't exist " or at least its not important. I like learning that involves body and soul.

Heather's commitment to inclusive education for children with special needs kept surfacing in our ongoing dialogue.

Heather: At the beginning of the year I had a particularly difficult student. He cried all day, would do nothing and was aggressive towards others. He was very draining for all of us but at no point did any child in the class reject him. They asked him to join their groups repeatedly and to play with them. This little fellow did grow and become part of the class. Unfortunately due to his foster home situation he was moved. Some of the children still say they miss him. I feel this comes from helping children see their connectedness with the group and how we all need to bring something to it.

Pam: It was wonderful the other day to see how the children responded to the web in The Very Busy Spider. [The children were interpreting what the web looked like to them.] The flow of ideas was like the turning of a kaleidoscope. I think the children really feel their ideas are valued. This kind of activity is often considered for gifted children, for fluency and flexibility.

Heather: It is so sad that we do this, that we limit children based on what we perceive would be impossible for them to experience or understand. Although my students are not strong in writing they are willing to explore their ideas and thoughts through this medium. I believe it is because we believe that they are writers.

Pam: It was interesting to see that they could all work more or less successfully [in the library], at greatly differing levels. You could really see how this kind of work is ideal I feel for students with special needs. They can fit in comfortably at their level and are energized and stimulated by the children around them, and I'm thinking of gifted children as well as those experiencing difficulties.

Heather: I love how the children are still bringing in things and I'm sure it will continue long after you leave. Today when we started Tim came up to me with concern in his voice, "Where is Mrs. Steeves?" He was concerned you were not in the class when we started. It is exciting to see him motivated to learn. Often his orientation is one of a passive learner. Once he wrote a story that was so him. He wrote something to the effect, "If I was a submarine, I would sit and wait for my supper to be served." This story was so much a reflection of him. Throughout this unit he has excelled and shown wonderful interest.

In the final pages of our journal the conversation returned again to

a sense of wonder and imagination. It sprung from watching and listening to the children during the research project and during Show and Tell.

> Pam: The wasp's nest that Amy brought in led to some interesting and imaginative questions. Is it that the children have more information to share that spurs these questions? Does one interesting idea lead to another one? Toys and stickers bring more consumer oriented questions. I wonder if children may have lost their sense of wonder about natural things in favour of the razzle dazzle of commercial things? I remember my own childhood being full of imaginative play, but I also remember living near wild open spaces when my sister and I would play early settlers or horses or superman. I used to think that this was the difference, that kids in cities and cramped places lacked this, but now I'm thinking differently. I'm remembering Kim bringing in her "rock family." In a round about way I think the research exploration with bugs was opening her eyes to many things around her. Perhaps this was also the case with Erin and Amy on their weekend in Carrot Creek. It would be wonderful to think that school could act to open children's imagination, to help them be creators rather than just receivers of what's around them.
>
> Heather: I wonder if some children are better at wondering than others? Kim does not come to school filled with all the many trinkets the other children do. Her life is more sparse. I wonder if for Kim this allows more imagination to occur? Some children live their lives in front of Nintendo. This worries me because they spend so much time being entertained versus creating entertainment. Yes, it would be wonderful that school helps children to be creative. Your personal experience is interesting because I lived in Montreal in an apartment as a child. My memories of childhood include imagination and play so I wonder if it has to do with our changing society? I wonder how much these children play with each other outside of school? Children do not gather in packs like we did. More and more of their time is spent sitting and watching, not creating.

It was in this way that we helped each other see differently, so we could gain new insights and learn more.

CHAPTER FIVE

The Children's Research Story

Introduction

It was late April and the snow had forgotten that it should now be a distant memory. Patches of it lay like shadows but the new green sprouts of grass revealing itself gave me hope that there was life under there bubbling to spring forth. You see, what we needed specifically was bugs!

Heather and I were about to embark on a project. It would be research for us and research for her 28 year one/two children, who were also ready and keen to spring forth. In preparation for the project Heather had encouraged children to bring in their books and magazines from home, magnifying glasses and bug collection jars. A request had been made to any talented parent for a homemade ant farm. She had read the children Charlotte's Web by E. B. White.

There was a sense of anticipation with my arrival as it would be then that we could officially start our bug research. Was I a "bug psychiatrist?" I was asked by Kevin. This was going to be fun!

Establishing the Topic

Wednesday, April 8, 1992.

Reading and talking about stories with children is one of my favourite ways of getting to know them. I sat in the author's chair and the children huddled around me on the carpet while I read the folktale Anansi and the Moss Covered Stone retold by E. Kimmel. The children shared their ideas about the story and the connections they were making to other stories. They became quiet and absorbed as they waited to see how Anansi the trickster spider got a 'taste of his own medicine'.

I followed the children down to the art room for the rest of the afternoon. They were making chicks in preparation for the upcoming Easter holiday. I was able to walk around, striking up conversations and helping the children in small ways where I could. I watched how the children worked in co-operative learning groups. In this instance, one child would gather materials, one child would be a checker, and two would be encouragers.

After the children left that day, Heather and I began our plans in earnest. We had decided that we would spend quite a bit of time giving the children opportunities to explore in order to establish their topics,

the particular bugs they would choose for their research. We wanted to build background knowledge and interest and we were also acknowledging that we were working with young children.

Monday, April 13, 1992.

The next afternoon I read the story of The Two Bad Ants by C. Van Allsburg. I noted the way the children were sitting. They were so polite for being in such tight quarters. The children who had heard the story before did not give the story away. They enjoyed commenting on events. Shelly informed us that "the queen was the boss". The humour in the story provided lots of stimulation for the small group discussions that followed. I became a part of one of these discussions. I asked Kim what she liked in the story and she told me she liked the part when the ant ate the crystal.

"It was funny and I didn't ever see a ant eat a crystal," she said.

"I saw a little ant eat bread," Amy piped in. "Last year Erin caught an ant in her hand and put some sand inside and then we went home and put a little bread and put it inside and they ate it."

"You know quite a bit about ants," I said.

Now Kim was joining in again, "I seen ants putting food into the

ant hill we have in our backyard."

"Neat, eh?" I said.

Amy added "We have lots of ants on the steps and whenever we got food and stuff and we put it out for the ants to take it."

"That must be interesting to be able to look in your own backyard and see ants."

"And I caught one before and I put it in a jar. I put in grass and sand and um leaves and bread and crackers and cheese and apples and he ate it all up," Kim said.

Robert then joined in the conversation by telling us that he had a friend who collected worms, but what Robert would like to collect was wasps. "Why would you like to collect wasps?" I asked.

"Well, I wonder why they sting?"

"That's a good question Robert, something neat to find out," I said.

"When I see them flying, I run," Kim burst out.

Robert continued, "When I was in kindergarten, we caught a wasp by just slapping it."

"You didn't get stung?" I asked.

"No. I know why he didn't get stung. I guess he hit him on the side where the stinger wasn't pointing."

Now it was Amy's turn, "I once caught a butterfly

it was um yellow and it had little dots on it ... black and um I caught it in a jar and I let it go and I know how you catch wasps."

Now we were back to Robert's territory again. "They're easy. I catched a million."

"Yeah, and bees," said Amy. "Just take honey, sit there for a while, come in and put on the roof and there you go. If you just put honey in, they'll come and they'll step in it and their feets too sticky, they can't fly away."

"Or maybe," said Robert "you could just get um some food, put it in some honey and then when they try eating it they'll be stuck."

Kim starts to tell the story of how her brother kills them at her grandmother's house. But Robert is still thinking about catching them and soon interjects "My turn, I know how to catch wasps."

"How?"

"All you need is glue and honey and a jar," Robert added.

"That won't work cause the honey's not so sweet and when they try tasting it the glue will dry up in the sun and then you know what ... the honey will be dry and if they get it you know what happens ... you won't catch it," Amy retorted.

As the children prepared to come back together to work as a large group again I asked, "Do you think we can fill up this whole blackboard

with information you already know about bugs?" Heather and I worked together to take down their responses (See Figure 2). Initially we got almost a listing of bugs. When the children had something to say about a bug, we asked if there might be more interesting things to tell us. Much of this information was related to personal experience--"I saw an ant on the sidewalk," "A ladybug peed on me, "I got stung by a bee." The children were asked to cluster information that seemed to go together. We did this on the board. Heather and I drew different shaped boxes around these clusters to help the children sort out one from another. From these categories, the children, as a group, were asked to generate questions that could help guide their research. Since we were scaffolding the research process for the children, we thought it was best that there would be some group generated questions for a start and then the children who were interested could add further questions specific to their chosen bug. The blackboard brainstorming was typed up and given to the children so that they could use it as a spelling resource.

After recess we showed the children a lively information video, complete with rap verse called Backyard Bugs. The children were leaning forward, clicking their fingers and swaying to the tunes. When it was over, they wanted to watch it all again. But on this occasion we didn't. Heather and I had just begun working with each other and at

Figure 2

Class Brainstorming on Bugs

grasshoppers are bugs
spiders are bugs
spiders aren't insects
wasps sting when scared
termites eat wood
ants can eat dirt
some ants are black
some ants are red
red ants might be girls
ladybugs pee on you
some ants bite
ladybugs live at the farm
ants and spiders live at the field
queen bees are bigger
spiders don't fly
army ants
some bugs fly
some ants fly
when ants are hungry they eat grass
ants can climb steps and walls
queen ants lay all the eggs
worms crawl
bees and ants go into the cracks of houses
when bees are scared they sting you
mosquitos bite you
bees sting
some people get stung others haven't
dragon flies
centipede hornets
hornets
carpet ants eat worms
beetle
moths
butterfly
fly worm
cockroach
waterbeetles
caterpillar
praying mantis
in winter bees don't come out they die

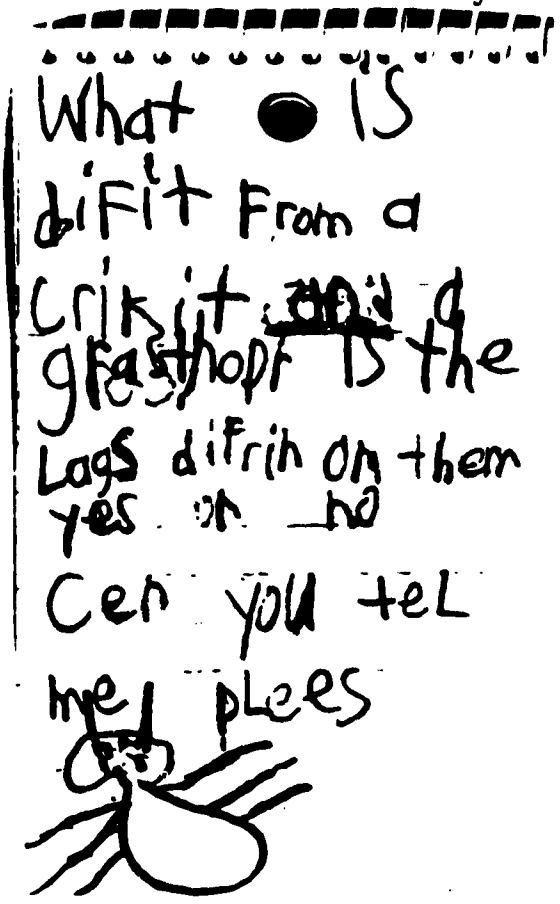
this stage I believe we were both going by the book.

We wanted to capture some of the children's excitement. We asked them to write down their thoughts in their brand new coiled research notebooks. Heather and I circulated round, encouraging developing spelling, scribing for some to get them started, and helping them find spelling words from the board. Nearly all the class were interested and working. I was amazed. This was a year one/two class at the very end of the day. The children were mostly interested in asking questions. Some entries reflected personal remarks and information they knew about bugs (Figures 3-6).

Figures 3-4

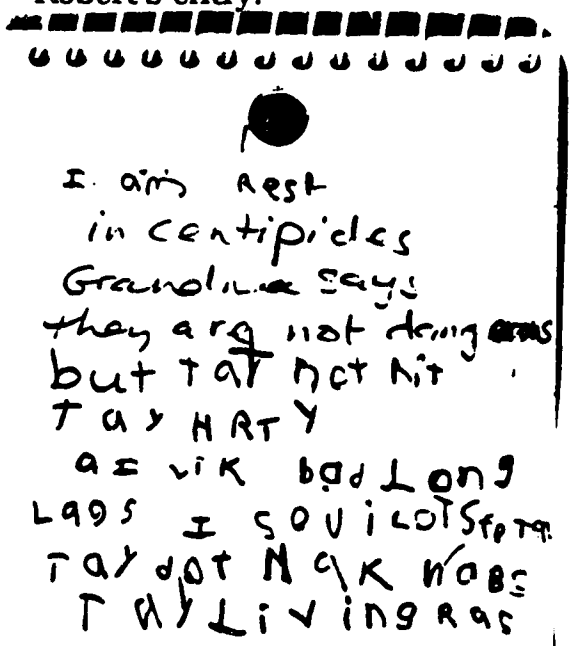
Initial Journal Entries

Erin's entry:



"What is different from a cricket and a grasshopper? Is the legs different on them? Can you tell me please?"

Robert's entry:



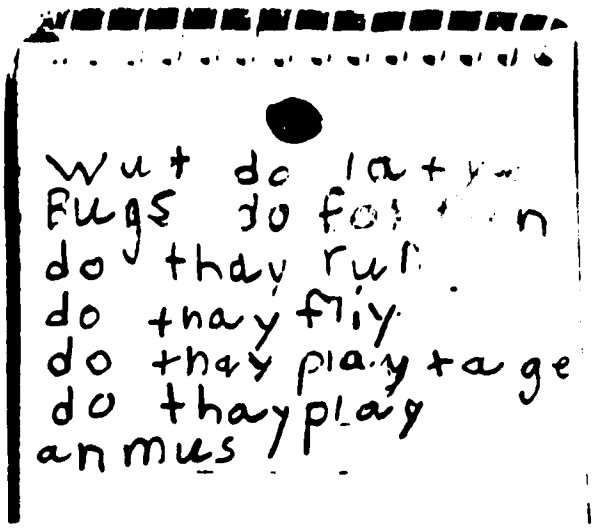
"I am interested in centipedes. Grandma says they are not dangerous but that's not right they hurt. I like daddy long legs. I saw lots of them. They don't make webs. They live in grass."

Figures 5-6

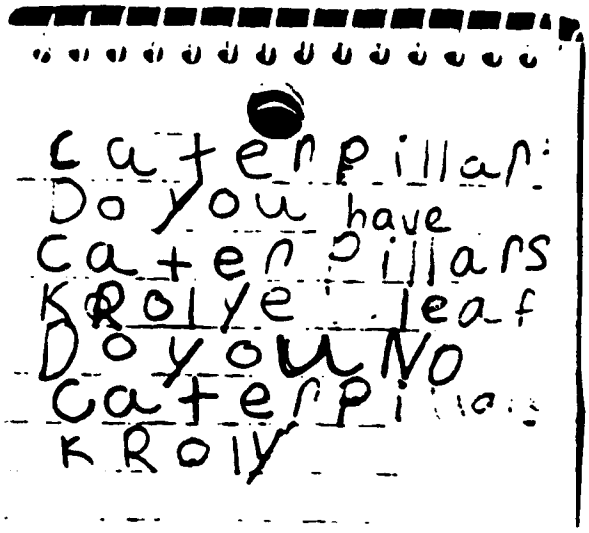
Initial Journal Entries

Amy's entry:

"What do ladybugs do for fun? Do they run? Do they fly? Do they play tag? Do they play animals?"



Kim's entry:



"Caterpillars. Do you have caterpillars crawling on leaves? Do you know caterpillars crawling?"

Wednesday, April 15, 1992.

As the children entered the classroom the next afternoon I positioned myself close to the door in order to share in some of the exuberance filtering in. I received a welcoming hug from Kim. She told me that an ant had died outside and she had to bury it. Robert wanted to know why there were bubbles on the plastic glass of the ant farm.

That afternoon the plan was to walk down to the library to explore resources which we had set up in centres. We had a listening centre set up for an African folk tale about mosquitos We also had an encyclopedia table where children could draw bugs found on marked pages. We had a filmstrip centre and a magazine centre where children would put markers on all the pages which showed bug pictures. We had an information/story book centre for sorting activities and we had a picture centre with numerous large colourful glossy prints. Since we were working with young children we expected them to get much of their information from pictures and it was pleasing to see the quality in recently published information books.

The children spent about ten minutes at each centre with a recess break in between. They didn't cover all of the stations but they did

participate fully in the ones they went to and Heather and I decided that it was not a problem. It seemed that it would be better that they experience a few centres in depth rather than try to cover everything in a limited time frame.

Initially the group of children I was visiting with had lots to tell me about what they were seeing in the information books. Kim had found a butterfly. She liked them because "they're pretty." She showed me the cocoon and told me that caterpillars turn into butterflies.

Amy had found a picture of a fly. She told me that the fly was eating sugar, that he was on top of a sugar cube. I noticed the resemblance in this explanation to the sugar crystals that were eaten by the ants in the Two Bad Ants story. Amy's voice was becoming louder and more animated as she turned the pages. "What does this look like?" I asked.

"It's a moth, it's a moth," she shouted. I asked her how she knew and she told me. "Cause it's ugly and um moths you can always tell because um I've seen one like that."

In the meantime Kim had found some grasshoppers. She told me that she had caught one at her grandma's house but she was still looking for more butterfly pictures.

Robert wanted to tell me about the caterpillar he was looking at.

"Caterpillars, um, when they go to sleep they stay there till they change to a butterfly." I asked him how he knew and he told me that "I heard it." I responded that this was very interesting at which point he further informed me, "And flies have millions of...a hundred eyes." He told me he had found this out in his friend's book.

As we moved over to the table with the glossy pictures, bug monsters seemed to be looming everywhere in their newly expanded forms and it was causing very lively interaction. Amy was squealing about the bumblebee, "A bee, a bee, I was looking for a bee."

As the children continued to look at the pictures, Robert and Amy now started asking me more questions. Robert had found some termite pictures, "Ooh that looks scary. Is this what they look like when they die? What is that? What does it say?" I read him the short piece and then showed him the picture of the queen termite, a sausage-like form. "That's what a queen termite looks like?" he inquired, "Holy, you wouldn't want to mess with that!"

This seemed to spur many more outbursts of "What's this?" and "Look at this," and "Can you read this to me," from Amy now as well as Robert. Robert was thinking again about the termites. "I never saw a queen termite."

"It would be amazing to see one," I said. "I wonder where they

come from?"

Robert then added "Hmmm, I saw a lot of wasps."

"You know about wasps, don't you Robert," I said.

"Hundreds...hundreds," he replied. He then proceeded to tell me the story of finding wasps in a crack beside the door of his house and that his Dad had put in some sticky stuff to stick them so they wouldn't come out. I thought back to a previous conversation in which Robert had outlined his method for catching bees.

Kim all the while had been engrossed in a pile of butterfly pictures. She was showing me some which had patterns on their wings. "These look like eyeballs," she said. I wondered why and she told me they were circles, and, very matter of factly, "That's how they're made." She started looking at Amy's bee pictures. She thought she had recognized the queen but then took it back, "No no no, that's not...I don't know."

But Amy knew, "The queen bee's bigger," she announced "and it always has a bit of orange."

This prompted Robert to say, "I saw a black and red ant before and they bite and, oh, it hurts when they bite. Ants will bite you right down to your bones, right?" My ears were perking up! "They bite right down to your bones 'cause there's hundreds of them," he emphasized.

Now the conversation was being led back to wasps and hornets by

Amy. "They're the ones that hurt you," said Robert. I replied that they do seem to be very sharp Robert had another angle on it, "They seem to be very angry!"

Amy now seemed to be adding a moral tone to the discussion, "And when they sting you the stinger comes off and they die sometimes." I said that I guess that would be the end.

"They should learn that," finished Robert.

Now everyone in the group focused on a particular grasshopper picture. It was large and it was purple. "Maybe someone painted it cause it looks like it got painted," exclaimed Robert. I asked them if they thought there could be a real purple grasshopper.

"Try washing it off," contributed Amy.

"Don't put it in water it might die," warned Robert.

I asked again if they thought it might be real. "If it wasn't painted it might be a different kind of grasshopper...and we wouldn't want to kill it," said Amy.

I motioned to some pictures of green grasshoppers and said that this was the kind I normally saw, not the purple ones and not locusts. "I think I've seen a locust before," chirped Amy.

"Do they bite?" asked Robert...

After we had returned to class, in the last few minutes of the day,

we asked the children to share their thoughts in their notebooks about their experience in the library that afternoon. This time the notebooks reflected preferences and feelings for the most part. However, some still contained questions or information about bugs.

Robert's entry: When wasps sting (they) lost a stinger. Bees eat honey. Bees have stingers.

Kim's entry: The butterfly, blue, red, orange, green, yellow together on a butterfly.

Amy's entry: Why do bumblebees have wings? Why do bees sting? Why do bees make honey? I liked the colours on the bees. Why do bees have only black and yellow colours?

Erin's entry: I like ladybugs because they have spotted coats and they're red and it's my favourite colour.

Tuesday, April 21, 1992.

Today was the day the children had been waiting for--the bug

walk. We were equipped with a white cloth, mason jars, and homemade straw pooters for sucking up the bugs! Heather went through the field trip routine--stay together and check with an adult if walking off. We headed out in groups of six. Two moms had agreed to join us. It was a cloudless day and the dry grass spoke of warm summer days to come. The children skipped and squealed their way to the park.

When we arrived we searched in the dirt, in the grass, and we poked around dry leaves and under stones. We batted the trunks of trees and bushes to shake bugs off the needles onto our white cloth. The children managed to fill their jars with bits of all this. Ladybugs arrived under mounds of dirt, flies buzzed to get out of their jars, a butterfly was captured at the last minute, and Kevin dug down far enough to get the big one, the queen ant.

At first the children could hardly contain themselves, darting everywhere. I found myself counting a lot--were there five or six? The white cloth worked well to bring the children together, especially when it produced bugs. As the children started getting bugs in their jars, they began to work more quietly and diligently staying in one spot for longer. Kim had found two ladybugs and a grey-silver thing. Amy had caught a fly with the butterfly net. Robert remarked that it was as big as a wasp. I asked him if he had seen any wasps but he told me it was too cold and

it was not summer yet. The children wanted to listen to the flies buzzing sound. They were tapping on the jar to see what would happen. They were saying things like, "If you hit him (the jar) he goes down." They weren't merciless but it seemed that the fly was being used as a source of entertainment (See Figure 7).

We traipsed back to school with the filled jars. After recess we took the class down to the art room. An artist in residence was visiting the school and Heather and I decided that working in art would be another way for the children to explore bugs. Being observant, cultivating an artist's eye, now seemed particularly relevant to doing research. As the children interacted with the artist Heather and I were both equally surprised at the amount of learning that was showing up. Insects had three parts, head, thorax and abdomen, they informed the artist as he puzzled about how to draw one. The children created their own dry brushes using twigs which they pounded with smooth stones. With these the children worked with quiet concentration to paint wisps of grass and fuzzy caterpillars with dabs of thick green paint.

There seemed to be a kind of rhythm emerging in our work with the children. The next day the children were much calmer after the high of the bug walk. Sometimes we wondered about the momentum we were

Figure 7

The Bug Walk

a part of. Would the children get tired of it all? There was still much ahead. Would we lose our energy?

Wednesday, April 22, 1992.

The following afternoon we would start with another story, this time The Grouchy Ladybug by Eric Carle. But the children approached the story differently this time. They wanted to know what the ladybug liked to eat and about the aphids pictured in the illustration. Robert said that you could tell how old ladybugs were by counting the number of spots. There were comments and questions about the nature of the stag beetle who appeared in the story.

After the story, the children located their bug jars and in small groups, they observed and discussed their bugs. As this exploration went on I noticed changes occurring in the way they were interacting with the specimens they had brought home from the park. Robert shared that his spider liked it in his jar and it wanted to stay in it. Amy mused that the crickets must like the damp because they kept hopping in the water. "They're after each other. They're playing tag," she said.

Kim was watching her ladybug and said, "I'm going to let him go in my yard 'cause he'll be hungry and there are lots of other ladybugs

there."

Amy was intently curious about her worm who seemed to be excreting something from its body. "What is he doing?" she screamed! After much speculative discussion and intense scrutiny by the group, Amy said, "I'm going to put him back in the jar because he needs a rest."

After recess we went to the art room for a second day with the artist in residence. This time the children would make clay casts of bugs using smooth stones as tools. As we walked down to the art room Heather said that she noticed that the children she was observing and talking with were giving their bugs names and human characteristics. They seemed to be getting attached to their bugs. I agreed.

Friday, April 24, 1992.

The next day Heather wanted to show me Sarah's diary. She was delighted with the amount of writing she had done--all about bugs. It was especially gratifying because Sarah had never done this much before. Heather described her as a reluctant writer.

The day before Heather had mentioned that one of the children had not wanted to go home in the afternoon. She had wanted to stay and learn more, and this was someone who was not usually keen about

school.

I thought about Robert. I was particularly interested in understanding his experiences with this research project. Heather had described him as a boy who had so much to say, so many questions to ask, and that in a class of twenty eight children it was difficult to give him the time and space he needed for his ideas. She felt that often he was frustrated. Recently she had taken to playing chess with Robert at recess time.

The children started the afternoon watching Joyful Noise, a video based on the Newbery Honor book by Paul Fleishman. I watched the children. The children were captivated, drawn in by the sound of the poetry, the music and the bugs, so imaginatively portrayed. They tapped their pencils, joined in the chants, shouted their preferences and asked that it be shown again. This time, we showed the video again.

Afterwards the children were asked to go to their small discussion groups to talk about the show. But what they wanted was their bugs. Kim told me her bug had "just got up out of its nap." She wanted to "get it out of here and see what it does." She was busy making muslin curtains for her jar.

Amy said one of her bugs got away. There was giggling, and Robert chimed in that his little spider was lost in the school. "We might

get in trouble 'cause I lost one of my ladybugs. I have about two things now," Kim admitted.

Robert expanded on this, "What if all our bugs got away!" Amy replied, "Not mine."

Kim clarified, "Only one ladybug, the red ladybug got away from this jar."

"Is it poisonous?" Robert asked.

Kim replied point blank, "No, it isn't. No ladybugs are poisonous."

"Except orange?" Robert asked.

"No!"

"The golden ones? What do the golden ones do?" he persisted.

Kim seemed to be taking on the role of expert in Robert's eyes. "Those are not ladybugs," she insisted.

"What?" Robert said.

"Oh, just never mind."

"They're not ladybugs?" Robert was still wondering.

Although the children had shown me how much they had enjoyed Joyful Noise, talk kept drifting back to the bugs on the tables. Now they were discussing Amy's worm. They were looking for the babies.

Kevin announced "If you break a baby earthworm in half, tomorrow when you look at them you will have two."

"I want to see the baby," Amy shouted.

Robert was thinking about Kevin's comments and asked, "What if you ripped it one time and there's two, and tomorrow you ripped it one more time, could you get three? Four, I meant." Kevin nodded. "Holy" said Robert.

"But it might die," warned Kevin.

"No, it wouldn't," piped in Amy.

Robert wanted to know more. "If you do it too much?"

"Yeah, because it has to grow," said Kevin.

"You have to let it grow," acknowledged Robert. "What if you break the father worm?"

"They lose their powers to regenerate. After they get older they lose their powers," Kevin stated.

"Do they use their magic to try and get them...do they forget all the magic words?" Robert asked.

"It's not the magic. It's just their powers," explained Kevin.

"Want to see my caterpillar?" someone said...

Since it was Friday we decided the children should release their bugs at recess. Janette told us later that she and Erin had gone to the far corner of the playground to release their worm Pretzel. They had put it down quickly and then had run. "Erin might cry", Janette had said.

When the children came back in, we did a whole class 'Reviewing the Process'. I reminded the children that we had been exploring about bugs, and that today they would each choose a bug that they wanted to find out more about. But first we would think about all the things we had been doing and a list was generated by the children (See Figure 8). When the board was filled I asked them whose ideas were there, the teacher's or theirs? They chorused together, "Ours!"

We gave out their notebooks and asked the children to think hard about their experiences over the last few days and make a choice. It didn't have to be the bug they had written about or captured. We listened to hear what thinking might sound like. I wrote the word BECAUSE on the board in large letters and told the children they could use this when they were thinking about why they chose their bug. Many of the children did not get further than writing the name of their chosen bug on paper. Of those that wrote reasons for their choices in their notebooks, the responses were mostly personal and factual. Kim chose ants because they eat bread. Amy later told me that she liked butterflies because they fly. A further sample of the responses is presented in figures 9-12.

It was odd. I had a sense that the choosing of the bugs was both the beginning and the end of the research. The pre-research stage of

Figure 8

Reviewing the Process-Exploration

We used clay to make bugs.

We read bug stories.

We talked about bugs.

We went on a bug walk.

We observed our bugs.

We covered the chalkboard with our words about bugs.

We made our own questions.

We went to the library to look at research.

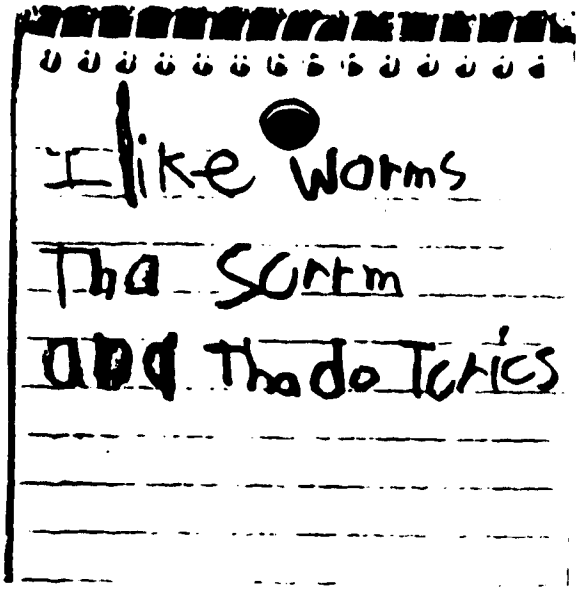
We wrote in our notebooks.

We watched movies about bugs.

Figures 9-10

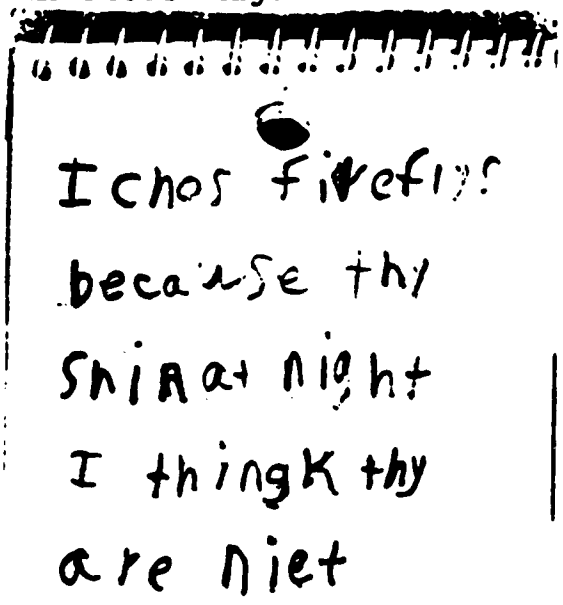
Choosing a Bug - Journal Entries

Erin's entry:



"I like worms. They squirm and they do tricks."

Kenneth's entry:

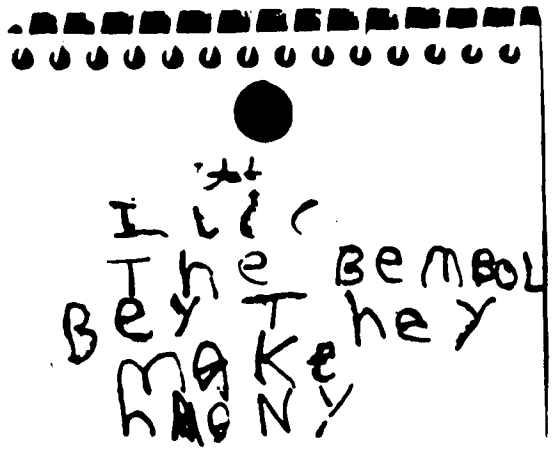


"I chose fireflies because they shine at night. I think they are neat."

Figures 11-12

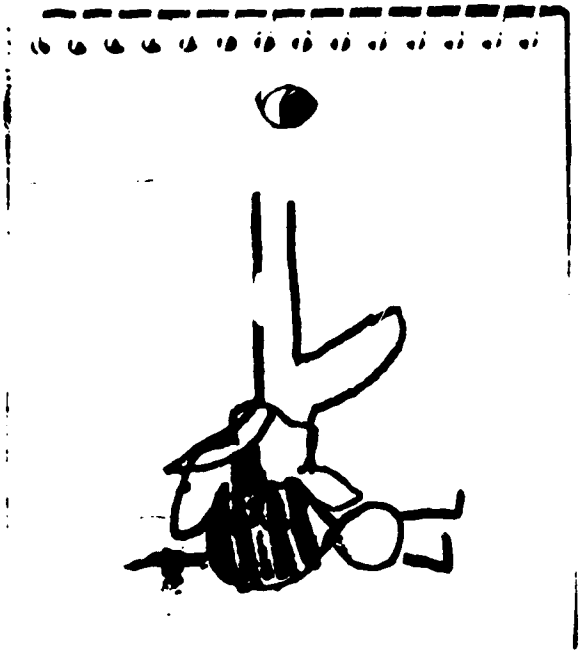
Choosing a Bug - Journal Entries

Robert's entry:



"I like the bumblebee.
They make honey."

Robert's picture:



establishing a focus topic had been completed. Now, the task of selecting information and creating a new understanding of the topic would be more manageable. But it also would be meaningful. The children had been given the opportunity to explore and they had made their own choices.

Information Retrieval and Processing

Monday to Wednesday, April 27-29, 1992.

For the next three afternoons the children walked down the hall to the library to gather information and to learn more about their own chosen bugs. Heather and I had scurried about on the weekend to supplement the school library resources. We provided information books, magazines, pictures, filmstrips and some slides. These were set out on tables, organized by topic. Clusters of children would be working at tables with material on ladybugs, bees, butterflies and spiders. Other tables would have groups of children working in pairs or working alone depending on the popularity of the bug they had chosen. These included children working on the waterbeetle, dragonfly, and worms, for example.

The children had been given complete freedom of choice in deciding which bug to research, and for the purpose of their interests, worms were accepted as worthy of research.

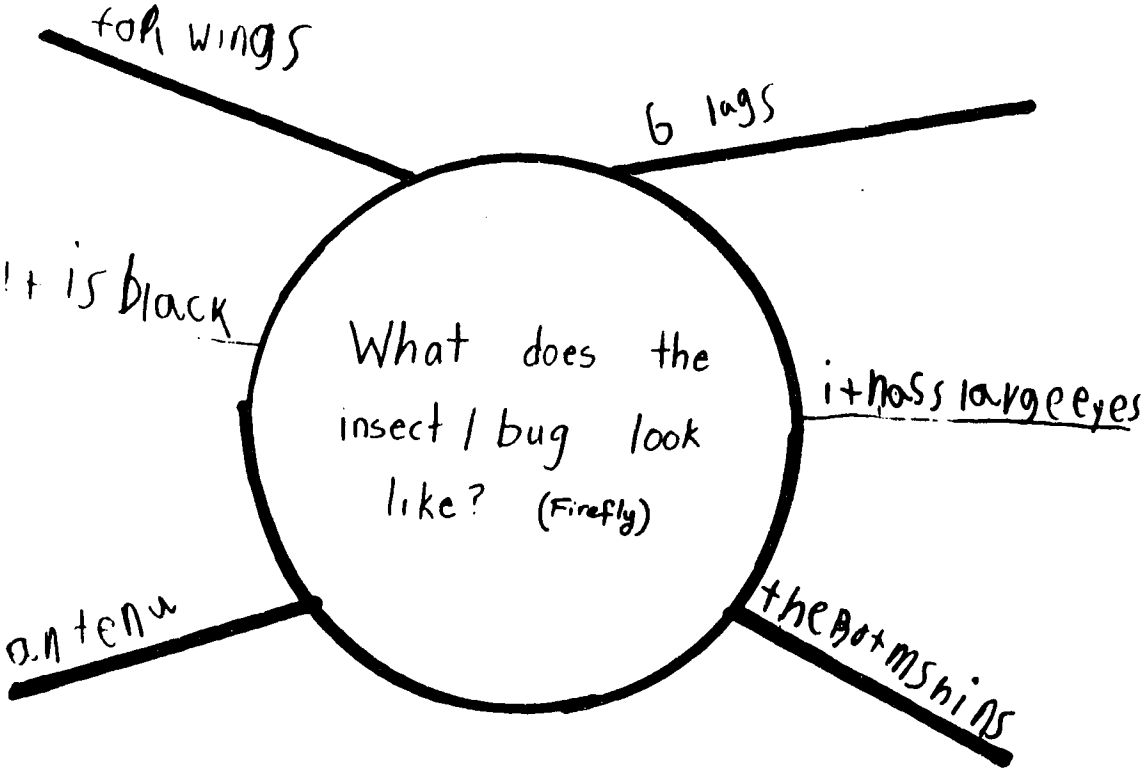
They started out down the halls with pencils and question webs in hand. The questions had been chosen from their generated list and these had been written on individual web formats for collecting information (see Figure 13). The most popular question chosen on the first day was "What did it eat?" The children began the webs by writing down what they knew from their own experiences. Kim was distressed that she only knew that ants eat bread. Others assured her that she would find out more in the library.

I spent a short time with the whole group each afternoon modelling for the children how they might find more information to do this. I talked about looking and listening for key words--that they would be like detectives unlocking information. I pointed out the usefulness of bold face print when locating information. I read short pieces and we viewed pictures and I asked which of their questions this information was answering. I waited for hands to go up. I waited for more hands. The hands went up. They were beginning to get the hang of this.

Once in the library the children got down to work quickly and busily. Although I had noticed some yawns earlier in the afternoon, the

Figure 13

Sample Web Format



children now seemed suddenly revitalized. Two parents had joined us to help at a couple of the tables and Heather and I circulated. The children were poring over their material. They needed no coaxing to do the work. We were there purely to help them in their endeavours--reading to them when necessary, scribing or supplying spelling words, and asking leading questions. I had to watch myself that I was not telling the children too much. I wanted them to be in charge of their own learning.

Heather remarked that there was little need for management, although we had both done a lot of preparation beforehand. But the children seemed so focused. It did look like a beehive of activity. We both expected children might decide to change bugs or wander off after fifteen minutes or so to find out what someone at another table was doing. This did not happen.

We also thought some children might become frustrated, but the work was taking on very individual shapes. Kenneth was able to use the table of contents to find more information about fireflies while other children were pleased just to have found the pictures which answered their questions. Kim was choosing the kind of information most interesting to her. She had known from her own experience that ants were black and she had written this on her web. When she found the variety of colours that an ant could be, she wanted to fill up her whole

"What does it look like?" page with colours. She seemed fascinated.

Children worked at different paces. Some went methodically through the four original general questions choosing one at a time over the three sessions. Others went on to generating new questions about their bugs. wanted to know what butterflies did for fun. A picture of a queen termite had become a source of new questions for Bryan and Kevin. They were impressed that it lay 3000 eggs a day. So was I. It was fun to be learning along with the children!

Some children were concerned when they could only get one piece of information to answer a question. It seemed that ladybugs just ate aphids! Robert was sceptical too. He was fascinated with an enlarged picture of a bee's stinger. He would check this information on Friday when he had a microscope to examine the dead bee on the specimen table in the classroom. He would see whether the book "was fake or not."

The room continued to bustle with industry for three consecutive afternoon periods. Because they were in groups they could talk to each other and get energy from each other. Some copied from each other, others didn't. The last day saw us scrambling to get to all the children who needed their ideas scribed and running to get paper for others to write their new questions. As the last of the children left the library to

go out to recess, Katy said, "I'm sweating from all that thinking and all those papers."

Heather and I acknowledged that the children were doing a lot of work. It was the intensity that we found most striking. Intuitively we felt we needed to keep the children 'nourished' while they engaged in this work. We would energize them with games, songs, and laughter. On one afternoon we took the children outdoors for a game of hug a bug and spiderweb tag. "They threw themselves into it," Heather remarked. On other days the children played category games, laughed at bug jokes and sang bug songs.

Later, that Wednesday afternoon, I asked the children if we could now stop, think and remember back to what we had been doing for the last three days in the library. It was time to 'Review the Process' again. "Let me hear you think," I said as we closed our eyes for a few minutes of silence. Then the children generated another list "Gathering Information" on the board (Figure 14). Heather noted that each idea for the list started with "We".

We would like to have had the children express in their notebooks how they felt about doing this part of the research but it was the end of the day and the best we were going to get was some informal talk with the class as a whole. The general consensus from those who shared was

Figure 14

Reviewing the Process - Gathering Information

We used a web.

We brainstormed for what we knew.

We got information from books.

We learned from writing.

We learned from looking at magazines.

We wrote in our notebooks.

We got information from slides and film strips.

We used information from our bug walk.

We got information from pictures.

We got information from teachers.

We learned about bugs from our experience.

that it was as Amy stated, "a little bit easy and a little bit hard." Robert said it was simple. He knew lots of information. He only needed one book. Had Robert thought the library research was a kind of test? I wondered. A couple of little girls said they were sad about some of the information in the books--when bugs were fighting.

Now, as the research seemed to be coming to another close for the children, Heather and I started coming to grips with the final aspect of the research project, a represention, in some form, of their new understanding.

Friday, May 1, 1992.

The children were still bringing in bugs and we were starting to hear stories from parents about the carry-over of the bug research outside of school. Amy and Erin's Mom said they were asking a lot more questions when they watched a nature show about bears on T.V. They had told their mom that they could use the animal book series they had at home to get some information. All this was, 'a first', according to their Mom. She also disclosed that the weekend before the girls had spent the entire time hunting for bugs and exploring nature out on their acreage.

Today we would start our bug work with the Fireflies story by Julie

Brinckloe. I asked Kenneth to tell the children something about fireflies. It had been his research bug. He smiled confidently and told us that they had four wings, that they fly and that there is a light at the bottom of their body that goes on and off. I started to read the story. We noted that the boy who saw the fireflies outside at dusk lived alone with his Mom and Dad. The children identified with this boy. "He's going to get a jar," just as they had done. There was great excitement when the boy caught his first firefly. He was trying so hard. Perhaps they remembered their own excitement on the bug walk!

When the boy started catching many more, the children shared in his enthusiasm--"he might catch 10, 20, 100's, 1000's," some said. The boy in the story took the jar home. I told the children to look closely at the jar which he placed beside him on the bedside table. "It's like a lantern," someone said. Then I turned the page. The fireflies were crashing against the sides of the glass jar and the little boy had a lump in his throat. "They're dying," Kevin called out softly.

"They're getting too crowded," said Robert.

Someone else said "Maybe they're asleep."

Robert asked Kenneth. "Do they sleep at night, Kenneth?" He replied that he didn't know. He hadn't found that out yet. Then I asked the children what they would do?

"Let them go," Janette answered.

"But he loved them so much, remember how excited he was catching them?" I said.

"Yes, but he'll just have to let them go," she affirmed. I turned the page. The boy in the story had his head under the pillow. "He's crying," said Colin. The boy in the story took the jar of fireflies to the window. They were now just a glimmer of life--settling to the bottom in a bluey green mass. The boy opened the lid and his bedroom window saying "Fly", and the fireflies started to burst forth like tiny stars floating back into the universe. The children helped me read the last page. The boy in the story was watching the fireflies with tears in his eyes but "a smile on his face."

The children responded to this story in their notebooks. Some children were very intent from the beginning. Others seemed to get more drawn in as they wrote. Most of the children talked about how they felt when they had to let their own bugs go the week before (Figures 15-18).

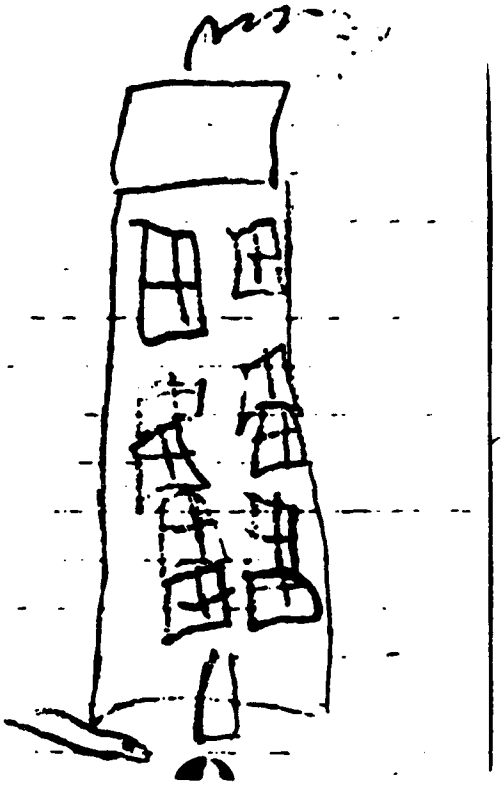
The rhythm, the up and down of the research project, became readily visible again after recess that day. Now that the children had their web notes all stapled together, we would ask them to get into their groups and tell a partner about their bug. I asked them to use their notes as triggers--that in their head they knew much more. We

Figures 15-16

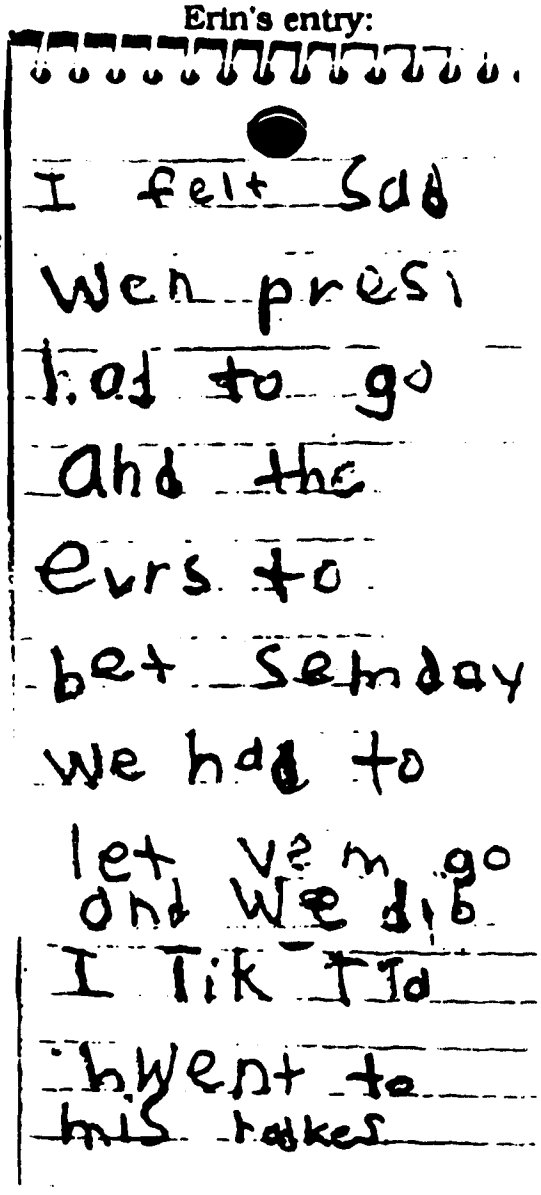
Story Response - Journal Entries

"I felt sad when Pretzel had to go, and the others too but some day we had to let them go and we did. I think they went to Mrs. Redkey's." [Elderly neighbour friend who lives in an apartment building close to the school]

Erin's picture with Pretzel the worm approaching the apartment.



Erin's entry:

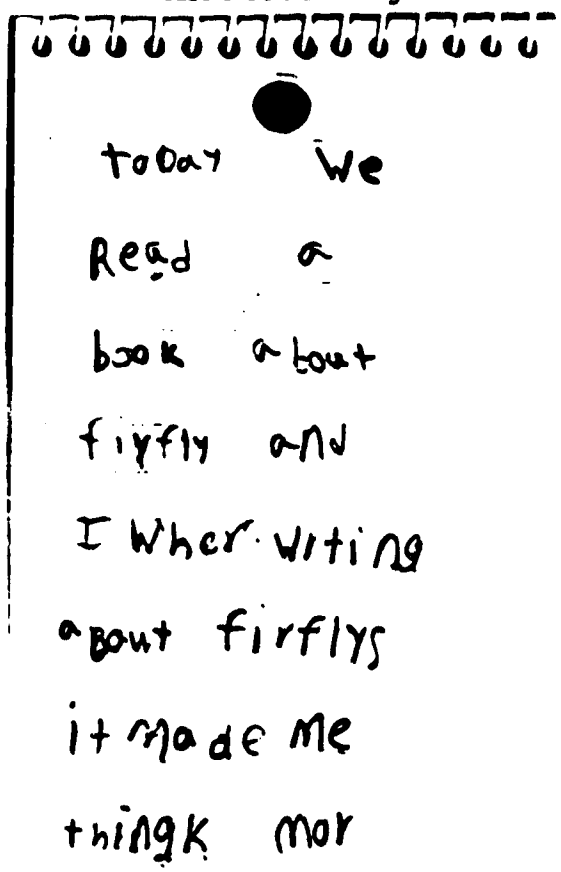


Figures 17-18

Story Response - Journal Entries

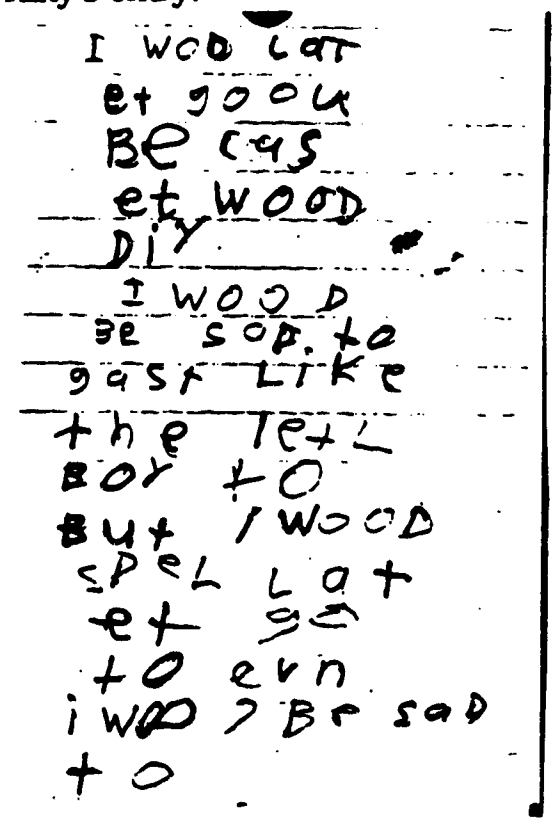
"Today we read a book about fireflies and I was writing about fireflies. It made me think more (about fireflies)."

Kenneth's entry:



"I would let it go because it would die. I would be sad too like the little boy too but I would still let it go even if I would be sad."

Katy's entry:



practised this at the board using Sarah's web notes.

Heather and I felt this synthesis was best done orally. Adding the mechanics of writing would be laborious. We would be unlikely to get more than what was there. I would later see that just reading the notes was hindering some children. Yet Heather informed me that for others the talk led to making additional notes on the web. Overall though, I had a sense that the children were participating in this activity because they were told to. The sparkle was not there. The activity seemed dry and spartan, as if they were being bound by their notes. The children in the group I was visiting did not ask questions of the reader. There was little interest. It was as if the work was over, that they were finished and it was the first time Heather had indicated to me that she felt the children were getting restless. It gave me a nagging feeling and I knew I would have to think more about this in the future.

Things all changed, however, when Heather and I started to tell the children that next week they would be using this information to present their bug to class. The children became curious about the art supplies on a table at the front of the room. Hands started waving excitedly in the air as the children imagined what they would like to make for their presentation. The room was alive once again.

I talked about making books and showed them one with a

caterpillar shaped cover. We could put it in the library. "You mean put those numbers on it?" Robert called out.

Then we showed them a large box and Heather took around a picture of a diorama for everyone to see. The children were becoming very excited. Next Heather and I did an impromptu restaurant scene with a butterfly and a snail--divulging lots of information in the course of our conversation. The children became completely silent. Finally Heather talked about using papier mache showing the children colourful illustrations from a book. So that was it. Four choices to think about.

"I'm going to do my box thing when I get home!" Bryan burst out. "I know what I'm making!" Tasha announced and Shelly said she could make a puppet on the weekend.

I looked at Heather, "They're up again!"

Information Sharing/Evaluation

Monday, May 4, Tuesday, May 5, 1992.

The art room is a large open space. There are no tables or chairs save an old couch in a small carpeted corner of the room. We decided that this would be the right place for the children to do their crafting.

They would be free to move around, spread out their materials, or visit with each other. I was working with nine children all needing help with eyes that wouldn't stick on, or felt that wouldn't cut. They had to wait but it didn't seem to be a problem when they were all dispersed around, kind of like recess I thought.

Most children chose to make dioramas. Puppet plays were second in popularity and papier mache came in third. No one chose to make a book, although many had been writing bug stories during free writing time in class.

Again, as I had experienced in the library the week before, I felt that it was "all hands on deck". I hoped they would be telling me about their projects, what they were figuring out, but it was my hands that were needed not my ears. They were trying to do something, make something, produce something. My role was being directed by the children.

And their enthusiasm was not waning. On the second afternoon Heather commented, "They were flying as they came in off the playground today." Amy and Erin had brought in a large cardboard box decorated with scenery, butterflies, ribbons and signs for the puppet play. Other children had been picking up "natural scenery" from the playground to fill up their dioramas.

Erin and Janette needed no direction. They were right at it. Occasionally I'd remind them about their information. Were they putting it into their puppet play? But I felt a little like I was intruding.

Robert and his group were practising their puppet show from behind the couch. They were concerned that the audience would see their faces. Robert the bumblebee was leading the conversation. He was asking for a 'pollen special' at the restaurant. I was trying to ask leading questions that would give them opportunities to tell 'where they live' and so on.

When he was finished, Robert wanted to know if he could now 'do a box'. Several other children had asked me this and Heather was getting the same kind of requests. They were not asking to change bugs. It was the format that they were not showing any particular attachment toward. Robert actually had difficulty choosing in the first place. It took him a long time before settling on the puppet play.

Heather said that these kinds of formats were all pretty new to the children. We thought that perhaps it would be different with older children. They would probably have had some experiences, how well their presentations had been received by others for instance, that might influence their choice. There was probably more to it than just learning styles.

When it was time to leave the art room, Janette and Erin wanted to know if they could come back later. Could they practise outside after school? They were living the experience!

The children wrote in their diaries the next day. Many chose to write about doing their projects in the art room (Figures 19-20).

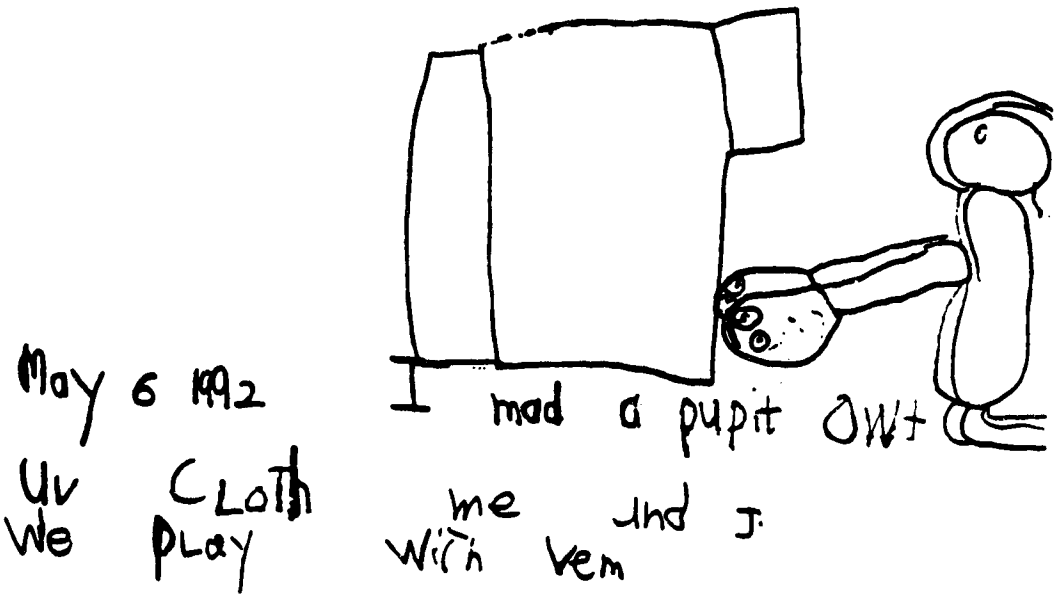
Thursday, May 7, 1992.

Since it was Education Week Heather and I decided to assemble a display for the Spring Tea to show off the children's bug research. We thought it would give us the opportunity to document the process. This was easy. We only needed to look at the charts that had been made to 'Review the Process'. Looking back at this we thought how impressive it was to see all that the children had done. It seemed to be a way to celebrate. The formal celebration would be on Friday afternoon but Heather pointed out that there had been many mini-celebrations in the research process already. During a morning assembly on the day of the Spring Tea, the children stood in a single line altogether at the front of the gym. Each child had a role to play in telling a part of the process. Many of them held an article--web notes, pictures, notebooks--that they had used or made. It was like a massive Show and Tell (See Figure 21).

Figures 19-20

Presentation Responses - Diaries

Erin's entry: "I made a puppet out of cloth. Me and Janette we play with them."



Daniel's entry: "I felt good. I felt perfect. I felt so happy."

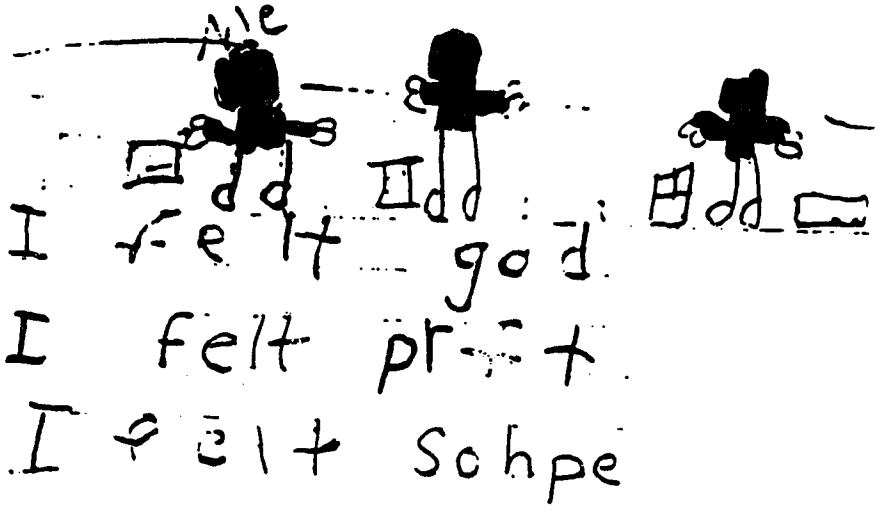


Figure 21

Reviewing the Research Process

Other teachers at the assembly commented to me later on the confidence the children seemed to have. No one had trouble remembering their lines.

In the evening I was able to talk to some of the parents. I noted that some who were not overly keen on bugs themselves but had been lured into the project by their children. They had been asked to buy bug books, make worm farms, and allow numerous crawly creatures into their homes.

I met Robert's Dad. He was enthusiastic about the bug research that his son was a part of. "It gets them curious about things," he said. He went on to tell me that this sort of thing was very different from when he went to school. He thought that it was more individualized now. I told him that the idea was to have the children start in the early grades to learn a research process so that later, as they got older, children could really learn about what interested them. They would have some understanding of how to go about this. He said that in schools "It's kind of the reverse situation. It [the curriculum] starts off broad and then narrows down."

I told him that I was trying to understand how children construct knowledge in a research project. I wanted to find out what the children thought and that their ideas counted. I recounted the story of the

worms and their magic powers. He said this was "neat" showing the "kid's imagination". He said that when he was young, school didn't mean anything. "Ppppt" was the expression he used. Robert's Dad told me that he had dropped out of high school.

We finished our discussion but not before he could ask me something about fireflies. It sounded so much like Robert, the little boy filled to brimming with curiosity and comment about all that went on. I did my best to answer his question, but my heart and mind were racing. Robert's Dad had found school irrelevant. What if Robert didn't have the opportunities to talk and question? Would he too come to find school irrelevant?

Friday, May 8, 1992.

The last day. I had set a bouquet of roses, a card and a gift on the front table for Heather. The puppet show stage was set up and the children's desks had been pushed out to the edges of the room to form a large horseshoe. Some chairs had been arranged for visitors and pillows had been tossed into the centre carpet area for the children. A selection of goodies awaited on a trolley nearby.

We started with the puppet shows. The visitors were forewarned

that these would be quite informal. This turned out to be an understatement.

Robert's group went first. Their restaurant scene revolved around aphid burgers and pollen soup. They had forgotten most of what they had practised with my prompting earlier in the week. I worried a bit. They, however, were receiving rapt attention and gales of laughter from their peers.

There was a marked difference when Chantel did her scene. Heather had to fill in as understudy to the grasshopper. This was the most informative of all the puppet plays as Heather could draw upon Chantel's knowledge in their conversation. The audience was more subdued however. The relationship of the players (adult and child) was different and perhaps it accounted for the different response.

Erin and Janette's puppet show would be a surprise for all of us. They had been working on their play both in and out of school. Their cardboard box stage was set up on a table for the event. The title of the show was "Bump, Bump, Bump Will You Be My Friend?" Friendship was the theme as the two worm puppets, Dirty and Pretzel played tag, swung on the swings and had a picnic of grass and dirt in the park. The children loved it and Erin and Janette had to be prompted to finish up, (See Figure 22).

Figure 22

Presentation Day

For the diorama presentations the children sat at their desks with their boxes. The principal and several parents were walking around talking to the children. Heather and I did the same. The puppet show groups were either asking questions as well or doing a lot of impromptu puppet plays. At one point I saw three going on in various corners of the room. Mark was running around the room with a very large papier mache dragonfly, making noises and saying he was one.

The research project had been one of the best learning experiences for Kim, according to Heather. It was evident when Kim showed me her box. Tiny black ants emerged from a hole in the brown construction paper dirt. They were marching in a row towards bits of paper bread lying on the ground. A large queen ant was present. Kim had drawn on wings with her brown crayon. A spider leered from its cotton web nearby.

When I came to her desk she told me that the ants were hunting for food. They would steal the food to take it to the queen ant. "Want me to tell you the story again?" she asked.

"Yes, I'd like to hear," I said.

"They're underground and they came on top to meet some friends to get some food."

"Yes," I nodded.

"Then they went down to meet somebody and then they went back and lived on top of the ground."

"And there's the spider," she went on.

"What do they do about the spider?" I asked.

"He wants to get the butterflies, and this one," she said pointing to the queen ant.

"He wants to get that one to eat the wings, to get the wings so he can fly off. One thing he can do is he can get those wings, and get more wings and keep on flying."

A stream of visitors came by to hear her story. Heather told me later that Kim had been upset because she thought Heather had missed her. Later, all was fine when she remembered Heather had visited after all.

Children, too, joined in the visits. I was sitting beside Kevin when Robert walked over. "Where's yours, Kevin?" he said.

"Look at those termites climbing up and getting into the hole there," I said. Kevin had used clay and bits of wood to depict the termite mounds.

"Cool," Robert exclaimed. Then he noticed a long, thick and smooth piece of clay laying near the front. "Some of them are going in here. Is this a rock?"

"No."

"What is it?" he inquired.

"That's the queen termite. That's the laying eggs stuff," Kevin announced.

"That's the laying eggs stuff?" Robert was curious.

"Oh, that's the queen termite," I said. It was finally clicking.

"Yeah and it lays eggs," Robert affirmed.

"It opens and closes, opens...closes..." Kevin said giving us a demonstration.

"It looks like a sausage too. Remember when it said that on the picture?" I reminded him.

"It's neat," Robert said.

"And it's as long as a sausage," Kevin went on.

"And it's as fat," Robert added.

Kevin continued to show us other things in the diorama, twigs and the grey construction paper floor to represent the desert, the desert in the dark, which is how the diorama looked when you viewed it through the peek hole when the lid was on the box.

After recess the children all sat at their desks, still in the large semi-circle while we passed around the bug snacks--blood thirsty mosquito punch, squashed fly cookies, chocolate-covered ants, honey

crackers and jelly worms. Tasha wanted to know what the ladybugs would eat. She had studied ladybugs for her project.

The afternoon was winding down. I would end with a story as I had begun. This time it was The Hungry Caterpillar by Eric Carle, a book I was giving the class as a gift. Too soon the children were filing out the door with good-byes, hugs and their bug creations in hand.

As Heather and I quietly straightened the desks and put the chairs away, we both shared a sense of loss. Did she say, or was I thinking 'the party's over'.

The following week I talked to Heather on the phone. She told me that although our bug research had officially ended "ripple effects" were continuing to occur. The children were taking out lots of the bug books from the library. They seemed to be asking more interesting questions in their Social Studies unit on city neighbourhoods. Many were continuing to write bug stories in their free writing time.

My spirit sparkled once again when I read Amy's piece. Amy's entry: Why do butterflies fly? Because they like to play. Or maybe because they are playing tag. Or maybe because they are warning other butterflies. Do butterflies get lost? I wonder when butterflies fly, I wonder if they are lost or maybe because they aren't lost? The end.

CHAPTER SIX

The Nature of Voice in the Research Process

Introduction

"If there were a greater appreciation for the extent to which knowledge is constructed, something made, there might be a greater likelihood that its aesthetic dimensions would be appreciated" (Eisner, 1985, p. 32).

The meanings that we make will be richer and deeper if we are encouraged to use the most human of our tools, our imagination. I see it linking heart and mind. It chisels out the unique way we each come to know. I see its expression in voice.

Research and teaching weave together and the image of school that I now hold is that of a workshop, a place to reflect and a place to create. As teachers with a shared model of the process, we build a community, provide materials, encouragement and feedback, but we expect the outcome to be different for each child. Each will tell his or her own story. It is something precious. It is something to be

celebrated.

My interpretation of the research process for children in a primary classroom is shaped by voice, by the voices of the children and the teachers, and it leads me naturally to stories. I am aware that the stories I have told are not the whole story but I also know that with time, as we search and search again, we will hone our understanding, smoothing the rough edges.

It is with a sense of great humility then, that I will attempt to explicate the themes which I see weaving through my three stories. My exploration of voice in library research has caused me to re-imagine this process as one of learning to tell a new story.

In this new context, I see the research process as one of exploration, commitment, embodiment and celebration. Woven through these patterns are threads, which are time, relationship, and trust. These threads contribute to the fabric of understanding I have woven. While some threads interconnect, there are broken threads as well.

Voice in Exploration

It is in exploration that imagination first becomes engaged. The senses dominate and concrete experience gives rise to curiosity and wonder. I am reminded of the children darting everywhere on the bug

walk and then again in their exploration in the library, shouting with excitement as each new picture, each new piece of information, was encountered. Exploring through art, through writing, poetry and stories and through information media, the children were able to imagine, to interpret, on many different levels.

Relationships in Exploration

Exploration drew the children closer to the work and the relationship between themselves and their work grew stronger because they could make connections in many different ways. I remember how delighted Kim was with the story of the Two Bad Ants, how funny she thought it was. Kim later chose ants as her topic for her research, an emotional connection perhaps. I think of Janette and the Fireflies story and her urging, "He'll just have to let them go". She seemed to be thinking about the topic of bugs in a moral way.

Often there appeared to be a desire to deepen the experience. The children wanted to watch the films again. They wanted to visit with their bugs again. They wanted to write stories about bugs in their free time. Excitement was generated and imagination was tapped because these lived experiences created many new possibilities. It was an aesthetic response (Rosenblatt, 1982). The context we provide for exploration

seems even more significant when I think of the way the children participated in Show and Tell. It seemed that curiosity and wonder were brought about in certain situations much more than others. Manufactured items led to consumer oriented questions such as identifying favourites or the place where something was bought. Natural items such as shells, moss, or a wasp's nest, for example, led to more interesting, more imaginative questions. In regards to the wasp's nest, children wanted to know who put the sticks inside it, and whether this was what the nest looked like when it was finished?

But imagination and wonder do not have to run in a forward direction only. What about the times when we reflect upon our past, the experiences, the images we remember? The children's talk at the beginning of the bug research was filled with their own memories. Kim had seen ants carrying food to an anthill in their backyard. Robert had talked about catching a wasp in kindergarten. The recollections were full of the concrete sensory stuff, and they acted as springboards for further probing. They allowed the children the opportunity to relate to the topic in a personal way. And so, it is during this time of exploration that a relationship, a bonding with the work, begins to take place.

Time for Exploration

But exploration, allowing our imagination to become involved, takes time. If we are to construct, not merely receive knowledge, we will need time to speculate and wonder and bring tentative ideas to the table. And questions like company. I think of Robert's interaction with the other children. Robert's way of learning involved constant questioning and speculation. Robert's conversation with Kim about ladybugs was telling. He seemed to have the idea that colour variation mattered when it came to determining a bug's biting power. Red and black ants would bite you "down to your bones," he had said. Kim had caught ladybugs on the bug walk. Robert's subsequent conversation with Kim bespoke the connections he was making when he asked whether the orange ones or the golden ones were poisonous. Through his questions he arrived at clearer understanding for himself but he was also doing something very special for Kim. He was showing her how important she was, that her voice, her ideas, counted. His questions were not a test for Kim; he really wanted to know--a subtle yet powerful difference. Time for real conversation was giving Robert what he needed--opportunities to imagine and question. But time was also giving Kim something that she needed, a chance to voice her ideas, a chance to be listened to.

Providing time for exploration continued to have an impact.

Relationships seemed to be forming as the children became more involved in their study of bugs. It first became apparent as I participated with the children as they observed their collected bugs. Initially their reactions were rather stimulus/response oriented--tapping their fingers on a jar produced buzzing noises. But after spending time watching and talking about their bugs in class, these same children began to react differently. Amy's worm needed its rest and Kim's ladybugs would be happier in her backyard where there were other ladybugs and more food. The crickets were playing tag and some children were giving them names. The children's imaginations were letting them identify with the bugs in a personal way. It seemed to lead to more caring.

Trust in Exploration

When we invite children to wonder, we are operating on a premise of trust. Trust opens the doors for voice. It acknowledges that we each have something to contribute. If we accept children's art work, if we hang it up in our hallowed halls of learning, then why not stories about magic worms?

Robert and Kevin were constructing their understanding of the regenerative power of worms. They were connecting their own experiences and ideas with information they had heard about worms. It

was not an adult understanding being portrayed. It was a child's. It was tentative, and we expected and trusted that it would develop further over time just as we expect our own adult understanding to grow too. Learning is not a one shot deal.

At the same time, the children shared with me a way to think about bugs that most adults have forgotten. They wondered if they play, if they have friends. I was not there to fix their understanding, to civilize it and make it conform. Instead I saw that they had something to teach me. I thought about how valuable their lessons might be for environmental education. I thought about how the Dakota Sioux refer to trees as 'the walking people'.

As Robert and Kevin discussed their understanding of the regenerative powers of worms, they were totally open to possibilities but they were also totally vulnerable. Their voices could be silenced so easily. But they trusted us, and we must trust them.

In a trusting relationship the interaction can be very honest. You are allowed to say you don't have all the answers. I think of Kim looking at Amy's bee pictures in the library. She thought she recognised the queen but changed her mind, declaring she didn't know. She was not afraid to say this. It came so naturally. There would be no negative consequence.

Voice in Commitment

Once researchers have had ample opportunities to explore, to build a bond with their chosen topic, a compression of energy starts to develop as a focus is formed. A relationship with the topic has been kindled and an image, a view, an idea, starts to drive us on. Imagination seems to be channelled and text begins to grow out of context. I think of the library, alive with the children's desire to know more about their particular chosen bugs.

Making choices and decisions can be arbitrary but often there is commitment. The difference, I believe, is voice. I see it accommodating the moral aspect of imagination, pledging us to a given course of action. It now seems to me that children will make wise choices when they are able to build a relationship to their work. I am reminded of how the children stuck with their chosen topics in the library. They kept at it for three afternoons. It was not a passive thing as children rushed to their tables laden with materials, or grabbed more papers to get down more information. They were driven to action because the work was meaningful. Management was not an issue. The children wanted to learn more. It was a very different picture from the one Robert's Dad had painted for me about his experiences in school.

Relationship in Commitment

Heather and I encouraged the children to support each other and we supported the children as they made the commitment to learn more about their chosen bugs. As teachers we offered support by acting as facilitators, modelling for the children ways to look for new information. We would read or scribe for them if they needed our assistance in the library. We would be there to talk with them as they tried to clarify their ideas but we would be careful not to interfere too much, not to take over. We would allow the children time to reflect upon what was easy and what was difficult, acknowledging that constructing new understanding is not a simple task.

Trust in Commitment

We were operating on a premise of trust. When, for example, the children gathered information in the library, they were not restricted to just one or two texts and an encyclopedia. Instead they could select what was important to them from a rich array of materials in many media. They could listen to each other's points of view. The choices opened up the space to honour each of the many different children in

the class.

We trusted the children to work at a level and a rate which felt comfortable to them. Individuality could be respected in this way. Some children were happy writing down information for only a few questions while others could hardly keep up with their own curiosity.

In commitment, we have acted to elaborate the image developed first in exploration. What we have chosen to include, how we have constructed our own understanding, will reflect our own voice. It is a part of what we know.

Voice in Embodiment

In embodiment we clothe the spirit. Voice speaks through our actions. It shapes the interpretation we are presenting to others.

Relationship in Embodiment

With embodiment, we acknowledge the intimacy of the relationship between the knower and what is known. I think of Janette and Erin and the puppet show they presented for their research on worms. They were truly "in to" it. Two friendly worms were meeting for a picnic in the park--the interpretation seemed to be a metaphor for th r own growing

friendship. It was difficult for them to wind it down.

And Daniel's comments, about his diorama, were telling. He had said that he felt good, that he felt perfect and that he felt so happy. Truly, Daniel's spirit was there, present in the body of his work.

The idea is further clarified for me when I think of Kim as she sat with her diorama display on her desk telling the story about her ants. Adults and children would come by, pull up a chair close to her and listen, really listen. But then Heather had come over to tell me how upset Kim had been when she thought that Heather had not come. Kim felt much better upon remembering that Heather had come, but it was an incident that Heather and I would not forget. We saw how important it was to have responded to Kim and her work. We recognized it as Kim's voice.

Narrative, whether through puppetry, stories or diorama, seemed to suit the children well. Issues of relationship seemed to dominate the presentations. Settings and characters would be constructed--from information they had about food, habitat and appearance, for example, while the action took on a story form. The children's newly constructed knowledge gained through the research would make the stories better. It seemed to be a natural way for them to embody their understanding; one that gave room for voice and involved both heart and mind.

Time in Embodiment

The children seemed to need the opportunity, the time, to play as well. It was another vehicle with which to think in a narrative way. There were many impromptu shows after the official presentations were over. The children were also using their dioramas like Playmobil sets, to act out little sketches with their newly made play figures, props and scenery. Some children simply buzzed and flew around the room totally engrossed.

Many children were like Robert and wanted to try out a different form. Their allegiance was still to their chosen bug but they wanted to represent their learning in another way. It probably accounts for the many stories about bugs the children had written in their free writing time after the research project had officially ended.

The children were intensely interested in each other's work. Time for sharing this work would give each child a richer perspective. Seeing things in a new way now seems synonymous with learning. It is a reconstruction. It is what we seem to be trying to do when we do re-search. It may not always involve new answers but perhaps often a rearranging and rethinking of ideas. It is exciting because we have constructed a new way to think about something. It is our imagination, our voice, that will help us do this.

I am reminded of my conversation with Amy and Erin's Mom, and her comments about the girls renewed interest in nature on their weekend trip to the countryside. They had spent the whole time outside. The children's richer interpretation of their environment because of the Bugs research was taking the children in many new directions-- both an outward and an inward journey.

I remember also the children's curiosity about the ladybug in The Grouchy Ladybug story. They really wanted to know about her. They were seeing her differently now. There were many more questions, and a renewed sense of wonder. This was reflected as well in Amy's piece about the butterflies after the research was officially over. It gives me a sense of the circular nature of learning.

Voice in Celebration

Throughout my research stories, celebration came to mean a way to mark growth. It is a natural outcome of viewing research as a creative process. Like the artist or composer, we as researchers, as learners, are making something with our mind, our body and our soul. We are trying to invent our own understanding (Piaget, 1978), to make our own sense. It seems to be a worthy occasion for celebration.

Celebrations usually happen at a special time and place, but I

have found that they can pop up at any time, especially during moments of reflection.

Heather and I liked the idea of the children reflecting on the work they had done to date. We did this through the reviewing the process brainstorming session on the board. Every sentence began with "we". The children were taking ownership of their work. On the morning they shared this at the school assembly the children were beaming. They were conducting their own celebration!

New Questions, New Possibilities

"Nevertheless, he (Plato) believed that without imagination, education is more or less useless," (Hughes, 1970, p. 55).

I think of life as a journey, not a destination, and so arrival at a conclusion causes me to feel uncomfortable. Like Amy, the research I have done fills me with new questions to ponder. My question about voice in the research process seems to lie inside larger questions. Like a pebble dropped in a pool, I am seeing ripples spreading outwards. To answer whether the research process is a context for voice is not so straightforward any more. There is certainly potential. But it depends so much on the way you look at it. For children in school, it is the

teacher who will set the tone. It is the teacher's imagination that will invite the children's imagination (Coles, 1989).

In educational research too, the matter of voice is up for question. For qualitative researchers, the imagination is seen as a tool (Eisner, 1991), something necessary, in order for understanding to develop.

I am led from my questions about voice in the research process to questions about voice in general. What is the place of it in school? Is school a place to prepare children as products or is it a place to accept children and nurture their souls?

Children seem to begin school with their voices intact. It is part of who they are. But how will they leave? With knowledge reduced to dry bones, imagination and wonder stripped away? Or perhaps like Robert's dad, they will just leave early.

What is the nature of our society? Why has imagination been a word we are uncomfortable bringing up? Is it because it is hard to explain? Is it because it cannot be controlled? Is it because it takes too much time? Wondering and questioning perhaps are not seen as cost effective in a society where time is money.

What about narrative knowing? Harold Rosen suggests that "narrative in school is not something to be consumed (in written form) but something to be made by every person in every possible way, and that it is limitless in its possibilities" (1988, p. 168). Bruner (1986) says

that it is one of two modes of cognitive thought, a fundamental way of ordering experience and constructing reality. This way of knowing is available to all yet it is not as favoured as rational technical knowing which is available only to a relative few, primarily those in industrialized western society.

Finally I find myself wondering about the nature of humankind, and myself. Why am I so interested in voice? Why am I drawn to the image Ursula Le Guin creates when she asks, "Why are we huddling around the campfire?" (1981, p. 187). Why are we telling stories in the dark? Is it because we are afraid? What are we in danger of losing?

Joseph Campbell (1987) suggests that, in this century, it is our humanity that is threatened by the modern technological system that we are living in. He asks "How do you relate to a system so that you are not compulsively serving it?" He senses that the task is "to learn to live in your period of history as a human being" (p. 144).

It is our imagination, our stories, our shared voice that can help us do that.

These questions open up the context, giving me an expanded landscape in which to think about the future. I see many possibilities ahead when I now think about voice in the research process.

For Children

"Real isn't how you are made," said the Skin Horse. "It's a thing that happens to you. When a child loves you for a long, long time, not just to play with, but REALLY loves you, then you become real."

"Does it hurt?" asked the Rabbit.

"Sometimes," said the Skin Horse, for he was always truthful. "When you are real you don't mind being hurt."

"Does it happen all at once, like being wound up," he asked, "or bit by bit?"

"It doesn't happen all at once," said the Skin Horse. "You become. It takes a long time...." (Williams, 1983, p. 4).

When young children do research projects we have the opportunity to honour their imaginations and, when we do, we are helping their hearts grow.

In exploration, a broad topic is presented and children offer their stories of experience. They learn that what they have to say is significant because other children and the teacher(s) listen. Classrooms become supportive communities where trust can dwell. Children start to build a relationship with their work and with each other. But it doesn't happen all at once.

Children's commitment grows as we allow them to make choices within the boundary that we have set for them. They choose their focus topic, and the questions they want to explore further. They select the information they will need to further their understanding, to tell a better story.

Finally, a piece of work is created which speaks to the identity of the creator. A story form, whether it be a puppet play, a diorama, a written story, or art pieces which can be played with, all seem to be natural ways for young children to present their [illegible]ch. It is a holistic interpretation, something that ensures children will not be cut off from their own voices.

Celebration and support become a way to acknowledge and encourage growth when children give their signature to their work. We celebrate and support their growth as individuals through their work because they are a part of it. It can be an empowering experience, one that will help children 'become'.

For Teachers/Researchers

"Once I spoke the language of the flowers, once I understood each word the caterpillar said..." (Silverstein, 1976, p.149).

When our voices, our imaginations, are honoured we give ourselves hope. It means that teachers/researchers will be able to grow too.

We too, need time to explore. We too, have stories to share, about our children and our teaching, about who we are and who we are trying to become. We also need a caring community to listen to us so that we can grow inside and build a stronger relationship with our work.

Dialogue journal writing between colleagues seems to offers one possibility. Heather's images about team kayaking which she shared in her journal were helping her make sense of how she saw the classroom as a community.

Writing autobiographical stories is another way to see ourselves in relation to what we do as teachers and what we want to learn more about as researchers. My stories about being a teacher and a learner were helping me make personal connections with my choice of voice as a focus for my research. We explore our own lives and our experiential knowing is pulled out. We hold a mirror to ourselves. If we can share these stories, listening to the response of others, we each will have another way of seeing ourselves.

Like the children, it seems important that we as teachers/researchers explore on different levels. I would think about poetry, "The Road not Taken" by Robert Frost, and Thoreau's writings about Walden Pond. They would not seem to have direct bearing on my topic at the time, but later my imagination would often form the necessary bridge to make my understanding fuller.

When teachers view their role as learners too, relationships with the children start to grow. My involvement in their learning, their trying to make sense, was making me more considerate of them. I found myself really listening to them. It mattered what they said and felt.

Teachers/researchers also need freedom to make choices. When teachers see curriculum as possibility, there is room for imagination to bring it life. It is through our voice that this happens, the touch of magic (Yolen, 1981) that makes it real. When research is viewed as possibility, there is room to make it relevant. It is what led me toward qualitative research where I would be trusted to be the instrument of my own understanding.

We become committed. And commitment leads to action, and a story of renewal. Like the children, we will work, we will learn, to create a better story. As a teacher/researcher, my commitment to an image of voice in the library research process of children was making me very goal directed and action oriented. I remember writing my research proposal and the intentionality therein. It was a familiar feeling--the world of the classroom and dedicated teachers.

As with the children, teachers and researchers, need a supportive relationship to help sustain and honour commitment. The relationship that Heather and I shared gave us energy and confidence. We were able to stray off the path a little more, and follow intuition. Often this would mean the children's ideas would get priority over our own plans, as with the showing of the video, Joyful Noise a second time. This is very different from a 'go it alone' myth, cultivated in some schools (Britzman, 1986).

Qualitative researchers need to have the confidence to be flexible and sensitive to the situation they are experiencing. I think of the time in the library with the children as they bent over their work intent on answering their own questions. I had come, armed with my microphone and recorder, but I needed to capture this concentration in my field notes, not interrupt it with my equipment. My focus on voice was expanding. Voice was becoming a metaphor for the bustling scene that was surrounding me.

The notion of teacher as researcher embodies a commitment to the image of teacher as learner. It is a fuller description of the interactive nature of what we do as teachers. It acknowledges that the work of teaching is not a one way street. By collaborating with our colleagues we can gain a richer perspective. Heather and I were a small community of learners, but a community none the less. It is a powerful feature of the library research process that the optimum setting for doing research work is to have both classroom teacher and teacher-librarian involved.

How will we present this piece of work, our teaching and our research? It seems that, as with the children, stories--narratives of experience--offer us a way to share the knowledge of the work we do. In telling a story we interpret our teaching from our own point of view. We are in charge of the tone. The story is composed of the experiences we have chosen to tell. As learners, we teachers will take from the stories

what makes sense for us. But as time goes on we can recollect and re-view the stories. They are there in our images like a painting that we view and view again.

In telling our stories, we, like the children, need to be able to experience different modes of expression. I found that different forms of writing helped me understand my work in broader terms. Journal writing and poetry were most intuitive and exploratory for me. Writing papers would give me labels to identify issues to use in discussion or conversation. Writing stories would show me the meaning of experience.

Then, as we listen to our voices and to those of our colleagues, our identities as teachers, as researchers, begin to emerge. We will have rich, vibrant portrayals. They will be real because they will be made with our voices. This won't happen all at once. It will take some time. But it is a cause for hope, a cause to celebrate.

Epilogue

I have returned to the schools now as a teacher-librarian and I have something that is new to me to say about theory and practice. If you construct theory, if it is not out there as an abstract, then you will use it! For me, voice connects the two. I was able to explore and build a relationship with my topic of voice in the research process. A strong commitment developed and I have gained a deeper understanding. Now I am able to embody and share that understanding (my theory) in my practice.

And so, the research I have done has direct bearing on what I do in the classroom and library. Firstly, I have a renewed commitment to voice in the research process. A research process that makes a space for voice involves more than learning to learn. Over and over, I have found that imagination is the voice that breathes life into learning. It is this human element that allows us to construct our own understanding, not merely receive it. It culminates with a renewed appreciation of the topic and a sense of caring responsibility toward it.

Facilitating Voice in the Library Research Process

I can now share how my commitment to voice in the research process is enacted in my practice. At the beginning, in co-operative planning with the teacher, the model of the research process from Focus on Research (1990) is shared. It is understood as a guide only, a structure within which the teachers' imaginations can adapt, or should I say invent the process in their own way. Rosen (1988) uses a similar approach with story writing in school. She found in her practise that providing students with a story model to work from (a story read or listened to), took away some of the burden of inventing a piece from scratch. The children's imagination was freed up to reinterpret the story in unique ways.

The planning and team teaching which take place in the research model between the teacher-librarian and classroom teacher contribute greatly to creating a situation in which the teachers' shared voice can be heard. My research illuminated for me the importance of mutual support when teacher's try to interpret a process in their own unique way. I found that when there are two teachers there is someone else there to bounce ideas off. The teachers give each other the courage to question the status quo. A co-construction develops and each teacher is supported by the other in forging a new path. The path will be slightly

different each time depending on the nature of the participant teachers, the time of the research and the children involved.

For children too the opportunity for their voices to be heard increases when there are two teachers involved. The amount of interaction with the children goes up. We are able to listen to students more. So there is a corresponding tendency to be more responsive to their needs and not just the needs of the curriculum.

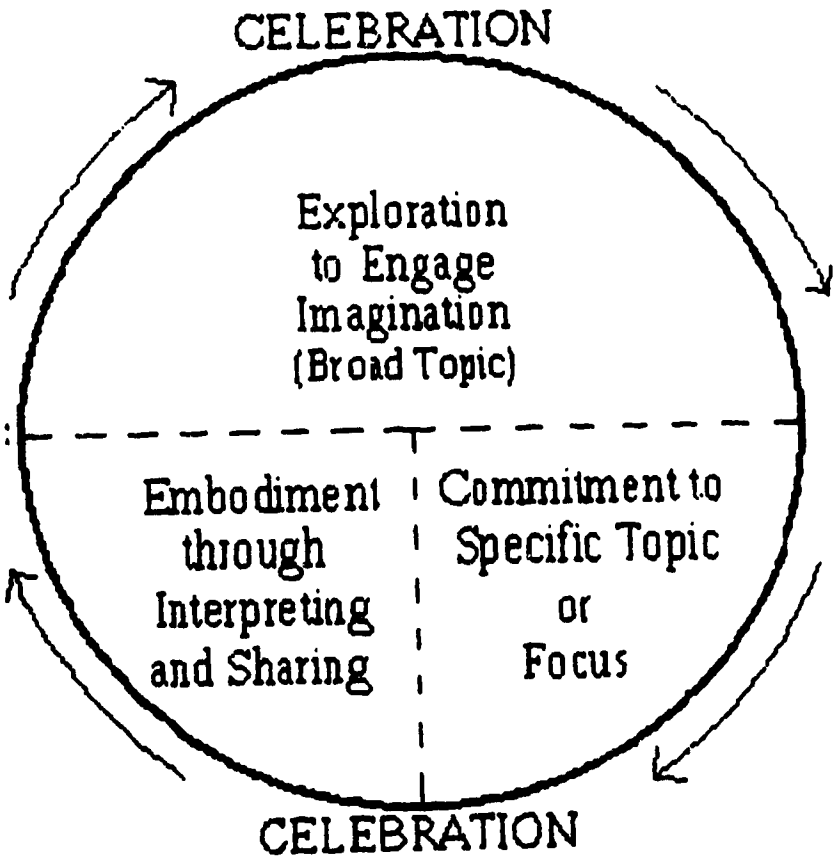
My own research has led me to translate my understanding of voice in the research process into the following model (See Figure 23).

In co-operative planning with the teacher, I have found that planning for the research takes place in sections as shown in my model, after an overall theme or area of study has been decided.

Exploration takes up almost half of the research time in my model. Sufficient time is needed here in order to engage the imagination and allow the child to make a wise decision for his or her specific focus or topic--a choice which reflects personal voice. With younger children, this aspect of the process might be structured in theme activities. The importance of adequate time at this first stage of the research process is probably a key factor for older students also. Loerke (1992) found that junior high school students often have difficulty coming to a focus during this stage of the research process.

Figure 23

My Model of the Research Process



A climate of trust is established throughout the research process. Children's responses and ongoing construction and interpretation are accepted. Nothing is regarded as irrelevant. As with Robert and the magic worms, we allow children to show us where they have come in their learning and growth. It is very different from having children only present to us, that which can be easily measured, a bank of specific knowledge deemed by those in authority to be important.

My research study has influenced my understanding of the specific stages of the research process for primary children. In exploration, my research has shown me the value of building a relationship so that the specific topic or focus is meaningful. A variety of experiences to draw the children in, to engage their imagination, is therefore needed. Concrete experiences, visually stunning illustrations and fieldtrips help to deepen the wonder and curiosity at this initial stage. Experiences with literature, poetry and narrative videos help the children begin to connect at an emotional level with the topic, leading to a richer relationship with the topic.

Experiences with a wide variety of multimedia materials in the library at this stage in the research process give children an overview of the topic as a whole. Something in particular may catch their interest so that within this framework a more specific topic or focus can be chosen.

Children in this exploration stage are also given many opportunities to make personal responses, to further open the spaces for imagination. Younger children can share their experiences relevant to the topic orally in discussion. Older students might use written memoirs here. Response journals or research notebooks can be used for personal comment and speculation in response to the various activities at the exploration stage.

Throughout this stage, we as teachers model personal response for the children. The children see, for example, that each teacher's memoir is unique when both teacher and teacher-librarian share these with the class. If the class is viewing a film, each of the two teachers can write their own responses on the board where all the children have the opportunity to see how varied these may be. The comments might, for example, include personal comments, preferences, connections to other known facts, ideas or experiences, ideas of particular interest, or new questions about the topic. In turn, the children are invited to choose some of their responses to share with the class as a whole. Both children and teachers share together the knowledge they have newly constructed.

Group brainstorming of what the children already know about the broad topic is included at this stage. This is a standard feature of the Focus on Research model. Many forms of this can be used including

written and oral forms, as well as T charts which categorize each idea as it is presented.

The second stage in my model is commitment to a focus or specific topic. My research has shown me that there is a great need to provide both support and guidance at this stage because it is now that the child's attention has been captivated and he or she is committed to learn more. In the optimum situation, both teacher and teacher-librarian are present to offer encouragement and acknowledge feelings. This is important for younger students who may simply need more help in reading, and writing. But there must also be acknowledgment that finding and interpreting information might be difficult without guidance. Children need support at this stage. They will find information that conflicts with what they already know and they may find different interpretations in different sources. My research has shown me that constructing new knowledge, developing our own theories, can be a risky business. We need to be en-couraged.

Modelling for the children ways to organise the information gathering can occur. It would include more focused brainstorming and categorization of information to derive questions to guide the information search. Providing some kind of information gathering device such as those suggested in the Focus on Research model (web, index cards, recording sheet) is useful. As children are given opportunities at this

stage to discuss their progress they see the circular nature of research as they imagine new questions at the same time as they are answering their current ones.

Further support is offered through providing materials for young or inexperienced researchers. Strategies for information processing rather than locational skills can be stressed when young or inexperienced children first take part in research project work. It keeps the emphasis on the meaning getting aspect of the research rather than some of the more mechanical aspects which can be refined later (as are the conventions of print in the writing process). Children, for example can be shown how to read informational texts, learning skills such as scanning and skimming and learning to use tools such as table of contents and indexes, and how to gain information from pictures. Younger children may need to be assisted by scribing and reading to them.

Optimally, a wide variety of materials in many media should be provided as resources. Sometimes I have found this often means supplementing school materials with public library materials as well as material from the children themselves. The materials should be at varying levels of complexity and contain much illustrative information to accommodate both readers and non readers.

Again, commitment will be strong if voice has been given

recognition in the exploration stage. The research work will then go better because the strong relationship built with the topic, the image created, will drive the research. It will act to sustain the student through the often difficult work of gathering, sorting, and reconstructing information at this stage.

The third section of my research model is the embodiment stage with a presentation of the child's unique imaginative interpretation of his or her chosen focus or specific topic. At this stage it is important to have opportunities to express understanding in a way that will honour voice. My own research showed me that narrative forms such as story, dramatization and puppetry seem to work particularly well for young children. Other forms such as creating a diorama or model for example also seem to work well as young children tend to turn these forms into narrative expression as well.

I think back to my research and remember how the children responded to telling each other about their research using their notes. They were not able to tell about their bugs in convincing ways--ways that would invite the other children to question and want to hear more. They seemed bored and it worried me. But now I realize how different rereading and retelling might be. Now I prefer that children first look at their notes to refresh their memories, but then put them away while they tell someone else about their topic. A selection process seems to take

place, and children seem to tell the most interesting, most compelling ideas to others. This is something I would like to explore further.

A sense of appreciation and a richer view will come about as the children see their own and others unique contributions in the sharing process. They will see again that there is not just one view, but many views tied to the imagination of each individual. It is absolutely necessary for this sharing to occur. Not only will children learn from each other about the topic as a whole but they will be growing inside, their sense of self recognised in the community of learners.

I see celebration as an ongoing part of the research process. I found in my own study that the 'review the process' feature of Focus on Research, which is important for children to gain a metacognitive knowledge of the research process, became a kind of group celebration of the learning journey taken. There seem to be many incidental moments of personal celebration for individual children throughout the process and with two teachers in the classroom I think there are more opportunities to notice these and to share them with the children involved.

I expect to learn much more as I work with children and teachers in the research process. I have learned that keeping a personal journal will ensure that my voice will continue to be present in my teaching. I am also learning that as we teachers try to open the spaces for children's

voices by our commitment, support and modelling, we also are opening the spaces for our own voices. It is an exciting prospect.

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APPENDIX 1

SAMPLE LETTER AND CONSENT FORM

March 1992

Dear Parents of Grade 1/2 Students,

This is an invitation for your son /daughter to participate in a university study related to the school library research process. In this study I propose to plan and teach a research project with the classroom teacher. It is anticipated that the students sense of self worth will be enhanced through inquiry which is made purposeful through personal involvement. As well, the study will promote the concept of lifelong learning as children experience a process approach to library research.

The study will take place in April 1992. A description of the results of the study will be presented in general terms in the School newsletter.

In the study, data will be collected through my field notes, through audiotaped conversations with the children as they carry out their research, and through my collecting of copies of the children's work. I may be taking photographs of the children as they go about their research. Anonymity is assured for all students and they may withdraw from this university study at any time.

If you have any questions or concerns about this study, please call me at ___ ____.

Sincerely,

Pamela A. Steeves

VOLUNTARY INFORMED CONSENT FORM

Title of Research : An exploration of voice in the research projects of elementary children.
The conception of voice in this study is the expression of the person in the research.

The Researcher : Pamela A Steeves, B.A. Dip. Ed., Graduate student in the Department of Elementary Education, U. of A.
This is to certify that I give permission for my son/daughter ..... to participate in this university study, the purpose of which is to explore the nature of children's personal involvement in a school library research project.
I consent to have my child's research work reviewed through data collection, including field notes,audio tapes, work samples, and possibly photographs as he/she works through the research process.
I understand that my son/daughter, has the right to withdraw from this university study at any time.

..... Parent or Guardian

APPENDIX 2

POEM "EMERGENCE"

Emergence

A butterfly .....
Orange, yellow, black in pattern
Darting, dancing, in soft hued skies

But it was not always so....
Long dark days - quiet and still
It did not know what lay around it
Was it dead or could it grow?

Waiting, waiting - it sensed its time
The crumpled wings unfolded as it watched
The breaking of the surface, like the coming up for air
It emerges.....

But is it the adult or the child?
I think it is the child.....
Come back to play ... to imagine once again

by Pam Steever

APPENDIX 3

LIST OF DATA SOURCES

Data Base for the Study

Field Notes

Expanded Field Notes

Taped Conversations with Children

Dialogue Journal with Teacher

Personal Journal

Research Notebook Entries (Children's)

Web Notes (Children's)

Diary Entries (Children's)

Artifacts: Photos, Free Story Writing, Plan Outlines, Documents

APPENDIX 4

RESOURCE LIST

RESOURCE LIST

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