

**Children's Play in Center Time:
Coming to New Understandings of
Life, Learning, and Teaching in the Classroom**

By

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A Thesis

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Kimberley F. Crass

A Thesis/Practicum submitted to the Faculty of Graduate Studies of The University
of Manitoba in partial fulfillment of the requirements of the degree
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ABSTRACT

This thesis is an exploration of the life and learning involved in children's play during a classroom activity time entitled Center Time. It is also an examination of my own personal and professional growth as a teacher through the course of life's experiences and classroom surprises, the struggles of dealing with the political tensions surrounding the profession of teaching and the reflective nature of teacher research practice in the classroom.

Using the methodology of Teacher Action Research, I closely observe and listen to children as they play, take notes, tape-record dialogues, engage in conversations and play experiences, and examine the written and pictorial journal entries of children over the course of several months. In the process of collecting this data, I continually reflect on the children's words, actions and understandings of play through personal written reflections, some social networking enterprises and through the theoretical base of knowledge and research of others.

It is through my writing, reading and verbalizing of my learning about children's play, together with my "reading with" the research literature that I have come to understand the value play has in establishing a social community for learning and thinking. The process of play creates an environment for higher-level thinking possibilities and problem solving through the use of language and experience within a social framework. If this social community is one which values the knowledge and worth of each of it's

members and celebrates the reflective thinking potential of the human spirit, then the ability for individuals to extend their understanding of the world we live in with confidence and power, exists. The play of young children exudes with a palpable sense of life and learning. My ability to find a connection as a “player” in the classroom has enabled me to teach well, with greater understanding and to live well with greater fulfillment.

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I am also grateful to my thesis committee of Dr. Hal Grunau, Dr. Judith Newman, Dr. Wayne Serebrin, and the late Katie Dawson, who helped me realize that the process of writing was more than an act of recording my findings. It was a way of understanding my thinking and empowering my professional voice.

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To the children and parents whose voices and stories fill the pages of this thesis, thank you for providing me with many insights into teaching and learning. The life that still exists in the memories of a great Grade 1 year will last a lifetime.

Lastly, to my parents Marion and Emil Crass, you were my first and most enthusiastic of supporters in my educational successes and life's little accomplishments. It is to my mother and the memory of my father, that I dedicate this thesis. (P.S. Yes Dad, I really have finished my thesis.)

INTRODUCTION:

The Internal and External Tensions as a Teacher

It was the second last day of school. The children in my Grade 1 class nestled down in their usual spots in the meeting area ready to begin again for another day. I greeted them and completed the attendance and then it was their turn to act. They moved through the child-orchestrated routines of calendar with ease. I watched them and wondered where our time this year had gone. They had grown so much. They had learned so much and I had learned so much from them. The children finished the calendar time by singing "Oh Canada".

This was the way we began every day. It was now time for Centers. Today's Center Time, however, was going to be different and I was a little apprehensive about the undertaking. I wanted the children to journey back over the year and reflect on what they had learned during centers. The idea of thinking about and reflecting on what they had been learning is a familiar and comfortable experience for these children. Regular conversations about what we are learning occur on a daily basis before, during and after center time. Therefore it is not the children having the words that cause me concern but the sheer enormity of the task. How do you recapture a year's experience in one or two articulated ideas?

I think hard about how to begin. I have learned over my last fourteen years of teaching that the most powerful feelings of emancipation for the children come from other children's words not mine. When children stand up

before their classmates and talk with them about what they know and what is important in their lives, their words somehow reach the ears, heads and hearts of the students in a way I cannot. Their words bring understanding and relate to other children's thinking in ways that are relevant and meaningful. At times I am in awe of these "great teachers" and feel quite inadequate in my role in the classroom. At other times I am drawn in by the magic and rethink ways in which I can better connect with the children's worlds. As long as I am open to new insights and experiences my learning will never cease.

Connect . . . connect. How do we connect to such an abstract reflection? Was there something that happened in Center Time this year that made us all different? I think about the power of words and then it comes to me. I walk over to Colin's portfolio and turn to his writing section. I pull out a book he had chosen as one of his best pieces of writing this year. I read it over to myself. I think it will work. I ask Colin if I could share this book with the class. He says "sure" and I begin.

"Boys and girls, today in Center Time we will be writing in our Center journals for the very last time this year. We usually write about what you were doing in centers and what you were learning. Today's write, however, is going to be something a little different. I want you to think about what Center Time has meant for you this year. What were some of the most important things you learned this year? What do you see in your head when you think about Center Time? I want you to listen to a story that Colin has written because it may help you understand what I am asking you to do. I begin reading.

THE BIG STUFF

I have a pool and more.

I have a dog and more.

I have toys and way more.

I have my teacher and she helps me learn.

I have lots of stuff and more.

I have friends and more.

I have my bathroom and more.

I have my family.

I finish reading and look at the children. They are quiet. Their eyes are fixed on me. I feel a connection. Children's words are so powerful for an audience of children. Eventually a few hands start popping up but I wave them down. I want them to write first about what they are thinking before we start to share. I want to capture in print what every child is thinking about Center Time before we talk about our thinking. I continue: "I like Colin's story because he does a wonderful job of describing the things that are important in his life. Now I want you to think about the "Big Stuff" in Center Time. What were some of the most important things you learned? Think about them and write and draw about them. What is the Big Stuff in Center time that has made a difference for you this year?"

They were off. I watched them with admiration knowing that Center Time this year has been a powerful experience in my own development as a teacher in terms of what I know about children, what things I do not know, and what things I still need to learn more about. I have learned a lot about what

teaching really means for me. But there's more than that. Center Time has caused me to ask the big question, "What is the Big Stuff in teaching?" In other words, "What is teaching for me?" With this thought in mind, I choose a path of introspection that has brought me to this point in time.

The Beginning Years: Starting to Question

I always knew going into University what I wanted to do with my life: I wanted to be a teacher. There was no doubt in my mind. I loved the idea that every day would be different, and that every child would bring new challenges. I despised the idea of entering a profession that was so predictable that you would know what you would be doing the next day year after year. This was too routine for me. I needed a profession that would allow for change, challenge and the unexpectedness of whatever tomorrow would bring. So . . . I worked hard, studied hard and graduated from a four-year education program in 1982.

Upon graduation I accepted my first job in a Grade 1 and 2 classroom and began using the summer to get myself and my classroom ready for the year ahead. In the midst of all the hustle and bustle, I remember being caught off guard one day by the simplest of questions . . . "So, what do you do for a living?" I had never thought about the question much before. I had always responded, "Oh, I'm in school" or "I am in Education." But this time the question was different. I faltered with my words. "I'm . . . a . . . teacher," I finally said. Thoughts raced through my mind. "So soon? Already?" Being a

student unconsciously meant that I was on a 'learning journey' or in the process of 'becoming'. Calling myself a teacher made me feel I was at the end of a journey—that I was no longer in the process. How could I say I had already arrived at the destination? Had I? I felt limited by this definition. There was too great a sense of finality. Did what I know now allow me to plan and be ready for these daily challenges ahead? Was I supposed to know it all in advance? I struggled with this conflict momentarily. Eventually, I put it on the "back burner" in my mind, while I dealt with the overwhelming challenge of surviving life as a first year teacher.

I suppose those first years of teaching were truly years of surviving and making sense of what teaching was all about. I never really thought about the "Big Stuff" in teaching, rather, I concerned myself more with having enough "stuff" for teaching—ideas, materials and lessons. Energy was put into what I thought was helping kids read, write and do math. I was fully aware of classroom management and what it meant to be covering the curriculum. Those were the priorities of our school. Being young and not very influential I did what was asked of me to do. Some things I liked. Some things I didn't. Therefore my classroom looked like a mish-mash of many different techniques and ideas as I tried to make sense of what teaching was all about. There were workbooks and readers, language experience charts, children's books to read, "hands on" materials to play and work with and lots of sheets for kids to complete. There was a writing center in the room, a math area, and a games center, but kids generally did not go to these centers unless they had finished

their work first. I wasn't exactly sure how to use these centers at that time. I just knew they needed to be a part of children's lives, although, I wasn't exactly sure why. Therefore, they remained as part of the background of the classroom.

The days were packed full of activities for the children to do, but I was the one who decided the activities based on the then "expected practices" of the school I worked in. As time went by, I became less concerned with all the materials I had collected for daily classroom use, (I certainly had enough), and more curious about a bigger question: Was this all that teaching was about—having materials, being prepared? Thoughts of a few years ago re-surfaced in my head. Is this what is meant to be a teacher? Had I become what I had dreaded the most? Had I become the teacher who knew what tomorrow would bring, the teacher who knew what story we would be reading and what page in the workbook we would complete, the teacher who knew what was best for her students today and what would be best for the students of years to come even when I had not yet seen their faces. Was there more to teaching than this? I felt lost in a cloud of confusion of what being a teacher was all about. School had become lifeless and I was bored. I could only imagine how my students must also have been feeling.

At this very same time I was becoming more conscious of my school environment and how it affected my teaching. I became more and more frustrated with the conservative views of my school and the pressure to use the same textbooks and workbooks that had been used for years. I struggled

with how to gain more freedom and more knowledge in order to teach better. I searched for ways to make teaching and learning come alive for me. I knew I could not find these answers within my school so I extended my sights to the larger education community. I discovered that an International Conference on "Whole Language" was being held in Winnipeg in February of 1986. From the literature that I had read on whole language, I understood it to be a "theory in practice." Bess Altwerger, Carole Edelsky, and Barbara Flores (1991) describe it in this way:

Whole language weaves together a theoretical view of language, language learning, and learning into a particular stance on education. Other innovations in education have taken similar stances. For example, along with prior progressive approaches to education, whole language prefers learner-focused curricula and holds to a conception of the 'whole child,' of the active learner, of the classroom as a community, and of teachers who learn and learners who teach. (7)

Kenneth Goodman (1986) adds to this definition of whole language by examining the ways in which culture and social experiences help shape curriculum in a democratic community of learners. (Dewey, 1966)

This was exactly what I needed. The idea of attending such a conference excited me. I asked my principal if it might be possible to attend this conference for two days. I'll never forget his response. "What will the parents think if you take that much time away from the classroom?" "I don't know. I hope they don't think I'm a terrible person," I thought to myself. "I'm just trying to make sense of it all. Maybe I'll just ask for one day!" Once again I felt restricted by my situation and confused by how I could turn this situation around.

By some miracle I was granted a day to attend the inservice which turned out to be a breath of fresh air. I remember sitting in an energized room of hundreds of people thinking about writing and talking about writing. When had I ever done that before? In the past three and a half years of teaching, I had never once talked with the colleagues in my school about the stories children write. Researchers like Kenneth and Yetta Goodman spoke of the importance of children reading and writing real texts and how the process of writing helps you become a better "kidwatcher". Teachers like Mary Ellen Giacobbe showed us how to look at children's writing from more than a spelling perspective. She placed many samples of children's stories on the overhead and encouraged us to read, listen, think and talk to the person we were sitting beside about how children are trying to purposely communicate and make meaning on the printed page.

It felt wonderful to think about how I could be released from the boredom of workbook pages. But it also was so refreshing to know that there was so much potential for allowing life to flourish in the classroom in ways that I had not even tried. I could feel myself breathing again. I decided to make a start with writing in changing what we did in the classroom.

I returned to the classroom and began looking at writing time from a whole new perspective. (It is amazing that when you make a small move and can see how things work from another perspective, everything you used to take for granted begins to shift.) I began small but it was the initial shift I

needed. I established a writing workshop time in our classroom. Lucy McCormick Calkins (1986) speaks of writing workshop in this way:

In the writing workshop, moments of personal connection are the matrix out of which everything else develops. Children write about what is alive and vital and real for them—and their writing becomes the curriculum. Their teachers listen extend, and guide; we also laugh, cry, and marvel. The workshop has none of the emotional flatness that characterizes most of the school day. The content of the writing workshop is the content of real life, for the workshop begins with what each student thinks, feels, and experiences, and with the human urge to articulate and understand experience. The structure of the workshop is kept simple so that teachers and children are free from choreography and able to respond to the human surprises (and) to the small discoveries of everyday life. (8)

I cycled in writing workshop once or twice a week only working with a handful of kids at a time. The rest of the children worked in their workbooks. I remember looking so forward to those days where I could sit around the writing table and talk with the kids about life stories they wanted to put down in print. There was something powerful here, something alive. Something, that when I look back on those early days of teaching, I remember with fondness. Their words and stories made classroom life more intensely alive as we explored our historical landscapes through pictures, words, and imagination. The smiles and excitement of the children who knew it was their turn to write that day will always be with me. On those days, where writing worked its wonders, I felt intensely present to life within the classroom. This is where I wanted to be. But it was only one or two days a cycle with a few kids at a time. I wondered how I could make this happen on a grander scale. Why had it taken four years to make even this small shift? My vision of teaching now

began to include children and the stories of their lives. How could workbooks, curriculums and lifeless readers have risen to the surface and blocked out what really mattered to life within the classroom? I knew I had to continue to change. I shudder to think what might have happened to me if I hadn't. It was time to go in search of the "bigger stuff" in teaching.

The Middle Years: Beginning to Understand

I took the next step by handing in my resignation. As scary as it seemed, it needed to be done if I was to grow as a teacher and to be free from restrictions that limited my perceptions about the nature of teaching. Two weeks later, I was offered a job I couldn't refuse—a Grade Three position in a Whole Language School. This was a place where teachers talked about kids, where teachers talked about what they were learning and where regular book studies were conducted to tie in current educational research and knowledge with classroom practice. I viewed this as an opportunity of a lifetime and gladly accepted the position.

Over the next two years I began to understand more about teaching and learning. In regular book studies the teachers at our school would meet together to discuss educational research such as that of Lev Vygotsky (1978). His book, Mind in Society, expanded my vision on the notions of language and experience. Vygotsky concludes that:

The most significant moment in the course of intellectual development, which gives birth to the purely human forms of practical and abstract intelligence, occurs when speech and practical activity, two previously completely independent lines of development, converge. (24) . . .

Children solve practical tasks with the help of their speech, as well as their eyes and their hands. (26)

We also looked at the social nature of learning which took into account Vygotsky's "Zone of Proximal Development":

It is the distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers. (86)—that is, what a child can do with assistance today she will be able to do by herself tomorrow. (87)

As I worked through many book talks and thought about the implications for the children in my classroom, I began to carve out a vision for myself of teaching. This time I did not see myself as a teacher who planned *for* her kids, but rather I was a teacher who planned *with* her kids depending on their needs, interests and abilities. I saw a teacher being someone who knows that children are always trying to construct meaning. Therefore, the activities that children are exposed to are ones that are meaningful, relevant and useful to the children's lives. I saw a teacher being someone who cares about kids and who takes the time to know them as people, thinkers and community members. A teacher was someone who puts kids first; not workbooks and pre-made worksheets. A teacher was someone who allowed the children's lives to weave into the very fabric of classroom life. I tried to become that teacher with this vision in mind. With each small step I took, I began to feel more in tune with my spirit and the kind of teacher I wanted to

be. "Life" was resurfacing in the classroom. I thought I had found the "Big Stuff" in teaching.

After taking a leave of absence for two years for traveling and studying purposes, I returned to teaching in 1989 and I accepted a job at a new school in a highly academic part of the city. There is no doubt that when I look back on all my years of teaching, that these first few years at my new school were the most rewarding and fulfilling years of professional learning I had up to this point in time. Confident in my teaching ability and excited to be working with children again, I began using all the knowledge I had accumulated in my past teaching experiences and allowed life to unfold within the classroom walls.

I began the year with a number of activities, which helped us get to know one another and allowed us an opportunity to share our lives. I remember thinking about what Shelley Harwayne, principal of the Manhattan New School, said as she spoke to a group of teachers at a conference in Winnipeg in the early 1990's:

If the social/affective atmosphere is not in place at the beginning of the year and the kids don't care about one another, then you're missing the base of your program that will support you all year long.

I tried to build that learning community. The children brought in pictures of their families and other things that were meaningful to their lives. They listened intently to the stories of classmates that were similar to theirs, as well as those which were different. The stories that were different made everyone a unique and special individual in our classroom. I brought my ninety-seven-year-old grandmother, my dad, my cat, and my earring collection to the

classroom for “show and tell.” As I told stories about my life the children began to see me as a person; not just as a teacher.

It did not take long before a sense of closeness and caring developed within our entire group. I will never forget my reaction when I received a get-well package of flowers, cards, and magazines at my home after I had been absent from school for a little more than a week. The parent who delivered them also carried a message from the children: “The flowers are to make you feel better, the cards are to make you feel better, and the magazines are for you to read so that you do not get bored.” Together we created an unspoken bond built on caring, respect, and the need for one another through the conversations and sharing of our lives.

As we ventured forth into the year ahead, we worked as a collaborative team developing many curricular units of study. The children came to curriculum planning sessions with ideas, choices and voices. Together we built a framework for the things we would like to learn and how we might accomplish this learning. Each child’s dedication and involvement for learning empowered and energized us all.

It was a time the children, the parents and I have never forgotten. Now it seldom takes long to rekindle these memories when I run into my former students or parents who fondly reminisce about those days. I also hear comments from their present teachers who say, “Those children still keep talking about their year with you.” And I suppose the comments that really hit home are the ones made by parents:

I loved the way you taught reading and writing and let the kids think about what stories they had to tell and let them choose what books they wanted to read. (Marilou Sampson, Conversation: 6/15/94)

I liked the way you let the kids think for themselves not just be told what to think like in that community study they did. The kids decided what they wanted to ask and how they were going to gather information. They eventually went out to collect that information from the community. Already I can see a difference between my ten-year-old daughter and my twenty-year-old daughter because of the two types of schooling they went through. My ten-year-old has no difficulty planning out how she is going to do something or standing in front of a class and talking about what she knows. Grade Two gave her the confidence to do that. (Pauline Thiebault, Written note: 6/20/94)

Those comments really solidify and justify that year of teaching for me.

Certainly this was the ultimate in teaching. I had come so far since those early traditional years of teaching and I had learned so much. I loved teaching and I loved the teacher I had become. How could it get any better? Or, how could it possibly get worse?

There is an old saying that goes something like this: Never ask a question, if you're not prepared to receive the answer. It is advice that I have given friends on a few occasions and now it was advice that I needed to give myself. How could it possibly get worse??? Well it could. It most definitely could.

The Challenging Years: Raising More Questions

In my first few years of teaching, I was shaped and molded as a teacher by my classroom experiences, my educational experiences and by the school and community in which I worked. In particular, the school situation was one

that placed value in traditional educational ideas that limited and restricted my professional voice on matters of what was valuable for young learners to be learning. The tension of conforming and not being allowed to grow as a professional were feelings I needed to address. I chose to move to a new location that had allowed me to better understand who I was as a professional and learner. Now in my present situation, I was again experiencing tensions, but I could not simply move to a new school. This time the tension I felt did not come from the educational community in which I worked, but rather from the public community at large.

There are certain people in my school community who do not support my vision of education. Their voices have become public, and in some cases are tied to an opposite political agenda. The fuel for their fire comes from a surge of mistrust and concern from media and business regarding the current state of public education. Complaints about whole language teaching, the lack of standards, child-centered education, declining skill levels, watered down curricula, and other educational issues are news. At first I try to turn a deaf ear to these voices, but this did not solve the problem. The more I listen, the more I realize these complaints are in direct conflict with my beliefs about how children learn and with my classroom practices. How can that be? I truly thought that what I valued in education was the best for children. Was I missing something?

The minute I started questioning myself about what was important about how children learn and what was important in sustaining life in the

classroom, I began to change again. As a teacher I had always reflected upon my student's learning and the teaching practices I employed. This time was different, however. I became defensive and less receptive to my colleague's advice. In some cases my colleagues would agree with the concerns I heard around me. This would further complicate matters by fueling my fears and feelings of guilt that I was doing something wrong. I became singularly concerned with "covering the curriculum." Previously I had used the curriculum as a guide. I would pick topics as areas of study to be negotiated with the children. The children would also choose topics they wanted to study either individually or as a class; these topics might or might not have been part of the official curriculum guide but we were always able to make meaningful connections to them in developing our units of study. I considered the *process* of learning to be more valuable than the end *product* of what was learned. The children chose the topic, pursued their own questions, constructed knowledge, and asked new questions along the way. I regarded this newly constructed knowledge as being as important as the knowledge suggested by the curriculum guide itself. The children had been actively involved in creating meaningful experiences, which made the classroom feel alive.

But the voices became louder and more powerful. Our Minister of Education and select parent groups vocally supported the view that basic skills need to be taught in the core subject areas. They believed that the acquisition of decontextualized skills was important to help children move

smoothly from one grade level to the next. While on one hand I could see that acquiring a common base of knowledge was important, on the other I could also see the value of knowledge which children had constructed. I wondered if one form of knowledge should be valued over another?

To further complicate my uncertainty, I listened to a presentation given by Andrew Nikiforuk (author and Freelance Journalist) in the spring of 1995 in Winnipeg. He claimed that our current educational system had produced "curriculum disabled kids." He argued that over the last thirty years there had been a disappearance of content within our schools because "teachers had been told how to teach rather than what to teach." He believed teachers had come to believe that "the process of learning how to learn something was more important than learning something." He further challenged the validity of this viewpoint by stating that "knowing how to retrieve something, does not mean that children will know what to retrieve."

As I listened to Nikiforuk talk I couldn't help but think, doesn't the same work in reverse? Just because children know some basic facts, doesn't mean that they will know how to apply them or use them in different ways. I was confused and frustrated. I felt immobilized in so many ways. Here was an influential person with a very powerful voice discrediting everything that I believed in and understood about children and learning. I had finally reached a point in my teaching career where I thought I understood so much and had discovered the 'Big Stuff' in teaching. Could I be wrong? Once again I felt immersed in a publicly skewed view of education that I did not believe in. This

time, however, the feeling of tension was bigger than my school community. I could feel it everywhere. It was everywhere. Teachers, in general, were wondering where the future lay. I was wondering if I ever could feel secure about teaching again? Was this what I wanted to do with the rest of my life?

Over the next few years, I struggled to stay alive as a teacher. I tried little “quick fixes” to make my classroom seem more child initiated: This included efforts such as Student Led Conferences and Portfolio’s to bring life and children’s voices to the classroom. But all of these changes were “add on” not substantive changes. There was still wonderful writing happening that transformed us all but in many ways time devoted to this was also short lived in the classroom. I felt as if I were cutting short the children’s in depth writing projects because in the back of my mind were provincial documents and public voices that continually reminded me about meeting curricular outcomes and assessing grade level performances. Without realizing it, I too, started controlling the children’s voices and limiting their power within the classroom because outside voices were doing the same to me. I started telling the children what they would learn and how they would learn it because I was being told what to teach and how to teach. The pressures of conforming caused me to start changing my classroom practices in ways that were in direct conflict with what I not only knew was true pedagogically, but what I believed was right in my heart.

At this time I was also in the process of completing my course work for my Masters degree. I had begun to think about my thesis—What would the

focus of this thesis be? I was feeling very down about the current state of education in the province and found it very difficult to get excited about engaging in a teacher research project. I had no particular interest in mind and did not have an overwhelming sense of curiosity about a question or subject that would interest me.

Out of a desperate attempt to get started, I obtained a one-week educational leave from my school division and decided to take the time to visit classrooms of teachers I admired. During all my years of teaching, I rarely had the opportunity to visit colleague's classrooms. I stepped into classrooms I had only heard teachers talk about. One of these classrooms forced me to face the tensions I had been feeling inside.

I don't know what I expected to see when I walked through the primary classroom door, but it certainly wasn't this—LIFE! It had been so long since I had been present to an overwhelming sense of life within the classroom that I forgot what it looked like, what it felt like and what it sounded like. Suddenly it was swirling around with such a passion for acknowledgement that it actually took me a few minutes to take off my coat, catch my breath, and engage with the rhythm of the moment.

Children were living and breathing in every corner of the classroom. They were building with blocks, playing with dominoes, doing counting games, making tiny books for a miniature library, reading books about how to construct a table and chair, building cardboard chairs and tables, drawing pictures of cars and gas stations from a book, designing homes and

businesses out of big crate boxes that were part of a community study, and on and on.

I could not believe my eyes. Was it possible that I was experiencing what seemed to be happening? Children's self-directed and self-initiated play was surviving and thriving in this classroom during a time of restriction, accountability, control and product. It was being allowed to develop and grow in a time called Center Time or Choice time.

Center Time not only happened during my visit, it was a scheduled daily event each and every morning. I was puzzled and baffled. How could this be? Center Time in my classroom was virtually non-existent. It was an unplanned, free time at the end of the day. Until this point in time, I certainly did not feel that I gave it much value as a part of my Grade 1 classroom. But what was so important about Center Time here, that it deserved the prized "first activity in the morning" time slot every day of the week. More importantly, how had it come to exist and flourish in this time of curricular restraint and political reform? Had this time empowered and emancipated the children and the teacher in this classroom? Why was this classroom embracing life and our classroom had put life on hold?

I left my colleague's classroom that day knowing one thing to be true. If I was to save my spirit as a teacher, I needed to rediscover life in the classroom. What better way to do this than by examining the role of Center Time within my early years room. What better way to support this need than by directing the focus of my thesis in this direction as well.

I was more scared and uncertain about this new journey than I had been about any of the other challenges in my teaching career. However unpredictable the fate of this journey may be, the time had come to take life off of “hold” in the classroom and to re-examine what teaching in this way meant for me.

Teacher Action Research

My thesis is teacher action research in progress. I am using this methodology to address my personal question, “What is the ‘Big Stuff’ in Teaching?” and in so doing, I unpack the layers of experiences, understandings and perception of teaching and learning that I hold.

As I look back on my teaching career, I think that I have been a teacher researcher for most of it. I have always looked at the act of teaching as an act of learning and have continually questioned the “ways we do things” in the classroom as I have searched for the best learning experiences and environment for our children. It is through this process that my own personal and professional growth has been affected as well.

I choose to do research in my own classroom because it directly addresses the needs of my students and the questions of teaching that are at the heart of the community of learners in our classroom. In this particular teacher research piece, my need to restore life in the classroom comes through examining children’s play in Center Time in a time when a more “traditional” view of teaching as transmission and learning as an end product

or outcome is being encouraged. It is in the research role of observing children in play, recording their conversations, genuine questions, personal anecdotes, and stories as they play that I am able to rediscover *life* in the classroom once more.

It was through much observation and continual reflection on the children's words, ideas, and questions that my understandings of learning and teaching, from the children's point of view, are reinforced and remembered and in some cases changed. As Jeanne Henry (1999) writes in Living the Questions:

Teacher research is as informed by what we hope to be doing tomorrow as it is by what we are doing today. How we teach has to be analyzed against what we could be doing better as well as what we have done worse, and in this way, teacher research represents an ethnography of change . . . Teacher research cannot evade the possibility that bringing matters to consciousness may very well cause them to change. (201)

My views of teaching and learning unfold as I try to analyze and understand what children are telling me and showing me. Judith Wells Lindfors (1999) describes teacher research as an act of inquiry in "understanding our world". (2) In this act, I find that I reach out to others for their understandings of the world as much as I reach within myself.

Throughout the course of this teacher research piece, I have challenged the children in my class to explain their thinking to me "just one more time" as I try to make sense of their demonstrations and conversations. Conversations with and feedback from other educators has offered me different perspectives in unraveling the data and making meaning. For the

first time in my life, I have initiated conversations with the scientific “experts” and have been receptive to their thoughts and ideas as yet another voice in my community thought collective.

As I reach out to understand, I also reach within. In doing so Judith Wells Lindfors (1999) describes this personal inquiry act in the following way:

I seek to go beyond; I seek to connect with another. My self is there, in the act. It is an act that arises in my noticing, wondering, perplexing, seeking, going beyond. (2)

As my research informs my practice, I live my questions of this teacher research piece with greater understanding and in so doing “go beyond” what I already know; laying the foundation for further questions and further teacher research.

CHAPTER TWO:

“Is It Play Time Yet? Don’t You Mean Center Time?”

I began the 1995-1996 school year with a clear mission in mind. I needed to do what ever I could to rediscover life in the classroom. I needed to search for the “Big Stuff” I felt was missing for me in teaching and I would do so in Center Time.

As I reflected on Center Time over the past twelve years of my teaching career, I realized that a gap existed between how I used Center Time in my room and what I had observed in my colleague’s classroom just a few months earlier.

From what I could remember, Center Time within that room was a celebrated time in the morning that children had come to expect and enjoy. It was a time of the day when children were actively involved with materials of their choice from blocks to games to books to constructing buildings for a classroom city. I had watched children entertain their own questions and pursue their own learning interests. I remember sitting by a little boy who was quite determined to build a chair and table for his crate house. He tried to figure out a way to construct a table with the materials that were available that morning but he was not satisfied with his attempts. Searching for a better way, he stood up and located a “How To” book on building from a wide collection of reading materials on similar topics. He spent the rest of his Center Time reading, observing others, constructing various items and eventually building a table that he considered acceptable. This classroom had

been designed to invite children to set problems for themselves in a supportive risk-taking environment, to think through how they might solve these problems; to generate new solutions or new problems; and, to reinvest their time in the act of formulating other problems to solve. (Weininger, 1994)

This was Center Time as I had experienced in this inspiring classroom. In many ways, I felt very comfortable with what the children were doing because I held the same philosophy of learning when it came to Language Arts. I believe that it is through the process of constructing knowledge from children's personal questions and interests, that they invent the world and become formidable players within it. (Weininger, 1997, Piaget, 1973) What I did not feel comfortable with, however, was that this happened through play and that a big chunk of school time was given up to play each and every morning.

Center Time in my classroom over the last twelve years was always assigned a "backseat" status. Literally, Center Time had not been much more than a well-deserved break at the end of a hectic day for both the children and myself. As I read an article by Sandra Stone (1995), I realized that I was not alone with my uncertainties in justifying and valuing play. She states:

What we find across our nation are educators who have or are unwittingly sacrificing play in their endeavors to reach prescribed academic goals. Even teachers who know the importance of play to a child's development find themselves on the defensive when questioned about play in their classrooms. We have become too embarrassed to give playtime a place because of 'more important' curricular priorities. Hence, play is reduced to recess time, hidden in the curriculum, or tagged as a miscellaneous 'free time.'" (45-46)

Center Time was a time when I could deal with my own agenda and the children had an opportunity to deal with theirs'. My agenda may simply have consisted of a time to work with an individual student, time to organize an activity, time to correct a few papers, time to respond to a child's work or even a moment or two to take a deep breath and watch the children in action. The children were usually active, engaged and involved in a variety of activities but on a much simpler scale than what I had witnessed in my colleague's classroom. I had only established a Writing Center, a Reading Center and a game area in my room. I chose these centers based on the ease with which they could be connected to provincial curriculum outcomes rather than on children's need to play. This made them easier to justify since I knew very little about play to begin with. The children went their way and I went mine and I saw no need for the two worlds to mesh. After all, the children were learning and embracing life, right . . ? I honestly did not know! But I had a very strong feeling that they were learning and embracing life in my colleague's classroom and I knew that only after one visit.

However uncertain I was of the outcome, it was time to entertain change and take the first step. I knew that taking the first step would be hard. I just didn't realize that it would be this difficult right from the start. I began the new school year by taking a huge leap of faith. I decided to move Center Time from a "filler activity" at the end of the day to an opening morning activity. I also decided to provide children with a thirty-five minute to a seventy-five minute slot for Center Time depending on whether we had a

sharing time after our play or not. CAYC (the Canadian Association for Young Children) believes that children need time to play:

Research has shown that extended blocks of time are needed for children to immerse themselves in play. (Tegano and Burdette, 1991, in CAYC Position Statement)

Sandra Stone (1995) also endorses the perspective that play needs time to evolve:

Children cannot be herded from one center to another at the ringing of a bell every 15 minutes. Children should have at least 30 minutes or more for play to evolve. However we choose to provide play in our classrooms, whether it is integrated into the curriculum through centers or is given a block of time, we want to make sure the time is efficient for quality play to take place." (53)

I felt this was a necessary step in establishing Center Time as a fixed and meaningful part of the day. What meaning was to emerge, I was unsure of, but I needed to give Center Time a valued place and time if I was serious about it's potential to make a difference. In making this decision, I placed myself in a position of uncertainty and anxiety almost immediately. I knew very little about play yet I had given it a prime time opening slot, even prior to Language Arts, which had *a/ways* occupied this space. I chose to do my Writing and Reading Workshops later in the morning and to have Center Time first. Was I crazy?

I anxiously began reading as much literature as I could on children's play to try and appease my anxieties. Some of this reading resonated with me. I memorized common statements like 'play is important in the development of young children' and 'the physical, social, emotional and

intellectual development of a child are all enhanced through play.’ (Vygotsky 1976, S. Stone 1995) Janet Moyles (1989) describes this development of the ‘whole child’ by exploring the teacher’s role through play:

The role of the teacher is to ensure that, in the school context, learning is on-going and developmental in itself and encompasses factors in addition to the purely intellectual. The emotional, social, physical, aesthetic and moral combine with the intellectual to incorporate a total construct of ‘learning’. Each is interdependent and interrelated to produce a rational, divergent thinking person who has powers of problem solving and questioning in an infinite variety of situations and performances. (31-32)

“Okay,” I thought to myself. “This sounds just wonderful! But how would I do this and what would it look like in the classroom during Center Time?”

Since I taught Grade One, I kept looking for examples of Center Time with six-year-olds but most of the literature I could find dealt with younger children’s play. Once again, this made me uncomfortable. I was trying to assure myself that it was okay for Grade Ones to be playing, but those authoritative assurances were hard to come by. I was hoping to find a chapter entitled, “All About Center Time in the Primary Grades”, but it seemed not to exist. Instead I kept reading about the importance of play and young children. The difficulty was that my children were not three-and four-year-olds. They were Grade One children who had many curricular expectations to meet; none of which included play. I was attempting to use play in the classroom but hide its existence under the title of Center Time. Even throughout the year, the mere mention of the word “play” would seem to echo in whatever room I was

standing in, causing me to take a defensive stance. I remember a conversation with one parent at the beginning of the year. She said that her daughter had wanted to bring her cash register to school. We had just built a huge McDonald's restaurant out of a refrigerator box in the classroom and the children wanted to have a cash register available when they were ordering food. "Is Ellen supposed to bring her toy register to school for play time?" the Mom asked. I could feel myself cringe. The two words "Toy" and "Play" jumped out at me. Immediate questions of doubt swirled in my head. Did this Mom want to know if this piece of equipment was needed for *play* or did she simply want to know if Ellen was to bring it in to school for whatever purpose we had in mind? Trying to cover both possible answers, I responded by saying, "The kids have been asked to see if they can find a *real* register first. If it is impossible to find one then we'll either make one or improvise on a toy one and use it for *money* activities during *Center Time*." I left the conversation shaking my head. I knew this Mom well enough to know that she really only wanted to know if our class needed a register but insecurities about play caused me to justify what was going on: I responded to her with the words "real" and "Center Time" instead of "toy" and "play". I also ended the conversation with a statement of accountability: "We will be using the cash register for money activities." I wasn't even sure yet if the kids were going to use it in this way or find another use for it, but I felt I needed to justify its presence in the classroom from an academic point of view. Honestly, the word "play" scared me to death. The words "Center Time" somehow lessened

the fear and carried with them, in my mind at least, certain overtones of something more academic for Grade One other than just play.

I began organizing the environment for Center Time in a different way than I had dared to deal with it in the past. I tried to relive the visual memories of my colleague's classroom and expand my limited vision of Center Time. I made provisions for activities that utilized both large motor and small motor movement as well as activities that enabled children to work quietly and independently or collaboratively in large groups. (The Early Years, A Source Book K-2, 1991, Manitoba Dept. of Education and Training) I set up a painting area, a construction area, a clay or plasticine center and a center for drawing. I included a small group area for writing and illustrating and a large selection of books from which the children could choose reading materials that challenged their abilities and aroused their interests. I made sure basic science equipment was intermingled with a wide arrangement of math materials. I intended to develop a dramatic play area around various themes that we encountered throughout the year. I placed an assortment of games, puzzles and small plastic animals and people on the shelves of the meeting area. I completed the centers with a big wooden block area and a water table that easily occupied the large open space in and around the meeting area, respectively.

Even though I had set up the Early Years environment in a picturesque kind of way, I still didn't fully grasp why all these materials were valuable. As I read Harriet Cuffaro's book, Experimenting With the World, (1995) I realized

that I was still on the surface of so many of my understandings of play. I felt as if she were talking about me when she writes:

Although considerable variation exists in the appearance of early childhood programs, there are certain materials that have become staples. It is here that a further qualitative distinction must be made. Why a material is chosen and the kinds of learning opportunities it is seen as offering are basic considerations. For example, manipulatives and paints are standard equipment in most programs for young children. If a teacher chooses these materials based primarily on thinking such as 'because they are part of the early childhood curriculum' or simply 'because children enjoy the activity,' then thinking remains on the surface, on acceptance of conventions that remain unexamined . . . Choosing materials requires more than familiarity, more than liking, more than unexamined acceptance of the ubiquitous presence of a material in every classroom we have known. (33-34)

As I read more, I started to think about the materials I had chosen to represent Center Time with a bit more understanding but not yet a complete ease in articulating these understandings to others. I connected with the ideas that the materials children use should be familiar and be part of their everyday life experiences so that they can build on their prior knowledge in using these materials, while experimenting with problems and ideas that challenge their "predispositions and attitudes" and which lead them in search of unique problem solving responses. (Cuffaro 1995, Dewey 1966) I could see the known materials of sand, water, paper, games, and puzzles finding a place within the classroom from that perspective. I could also see that it was important to have a variety of objects that meet the "transforming actions of the child allow(ing) the child to perceive the impact of his or her action." (Cuffaro, 35) In this way wooden blocks, plastic blocks or cardboard blocks, for example, would all have different "impacts on actions" for children as they

explored the nature of their environment with these different kinds of materials. As well, the materials for Center Time needed to be ones that enabled the individual to “think with” others and for class members to socially “associate with” one another. The materials in Center Time needed to have the potential for extending ones thinking beyond the parameters of the classroom.

I also thought about the aspect of “space” in the classroom from a perspective other than just the physical presence of materials within the room. It was important for me to organize the room so that children had many places to think, create and be themselves as they played. In her book Radical Presence, Mary Rose O’Reilley (1998) refers to the words of Parker Palmer when talking about space: “To teach is to create a space” rather than filling a space with “the number of minutes between the beginning and end of class, filling the student’s notebook, filling the student’s head.” (1) Teachers can “create a space” for children by listening and being present to who they are as people and what they feel and think, and in doing so empower the children to understand and “nourish (their) inner life.” (3) Ruth Hubbard (1998) refers to this space as a place to “honor” children’s thinking. It is a place where children can have moments of “uninterrupted thought” where they can “reach into their minds” and become “immersed in their interests and obsessions.”

In order to create this kind of “space” in the classroom, I decided to make sure that Center Time began the day, everyday, so that children knew they could count on the first part of the morning as being their own—to plan

for, to think about or to get lost in. Giving the children ownership of this part of the day meant that they could make their own choices, follow their own interests and passions and play at their own pace. (Hubbard, 1998) I wanted to “create a space” for the children “to fill” even though I couldn’t help but wonder if the children had the potential “to fill it” through play.

Harriet Cuffaro (1995), a Deweyan scholar, reminds me that classroom environments “consist of people and things as well as space itself.” (32) Being aware of the “sense of community” that I want to help nurture in the room I made sure that children had places to play where they could enjoy the company of themselves as well as places that “promote and encourage the communication necessary to create community.” (33)

“Okay,” I thought, “This is it. I have set up the Center Time environment for life to emerge.” The only thing missing was the children.

They arrived at the meeting area that first week of school, eager to begin. Delight sparkled in their eyes as they examined every corner of the classroom with wonder. I could tell they liked what they saw. Their engagement was immediate. They departed from the meeting area with a burst of energy. Not a single hesitation or lack of enthusiasm existed in any of them. They were here to make full use of the Center Time activities I had made available. The room felt warm and I cozied up to a big window full of sunshine and watched as the children began to play.

The room was full of movement and activity. There was a group of girls reading books together in a corner of the room and another girl reading on her

own at her desk. A number of children filled the meeting area with games, blocks, animals and math materials. A few children were in the Writing Center working on dictionaries while still a larger group chose to work together with the plasticine. Everyone was busy. Everyone was engaged.

Those first days of Center Time felt wonderful. For a few prolonged moments, my anxieties about this new undertaking seemed to fade and I was swept up in the excitement of it all. But I knew this was just the beginning and new activities generally excite everyone in the beginning. We still had a whole school year to go. I still had to explain what I was doing and what the children were doing to parents.

Now that the children were engaged, I needed to define a role for myself during Center Time. After disassociating myself from Center Time for most of my teaching career, I was uncertain as to what role I was to take. I spoke to a teacher who used play quite extensively in her kindergarten classroom and asked her how she used her time while the children were playing. She said that she worked with individual students in various assessment activities. She didn't "know what they were really doing at centers unless there was a noise or a ruckus going on." I could see how having a few moments of time to work with individual students was valuable, but shouldn't we know what children are doing as they play? Wouldn't that help us understand the importance of play? Sandra Stone (1995) recommends that we need to "honor children's play" in the classroom by involving ourselves in the play as an "observer, supporter or participant." (51)

Not knowing exactly where to begin, I decided to do what felt most comfortable for me as an Early Years Teacher. I would play the “observer” role and begin taking anecdotal notes.

I was unsure of what to write at first. My notes on September 6 indicated that I focused primarily on what kids were doing and who they were playing with.

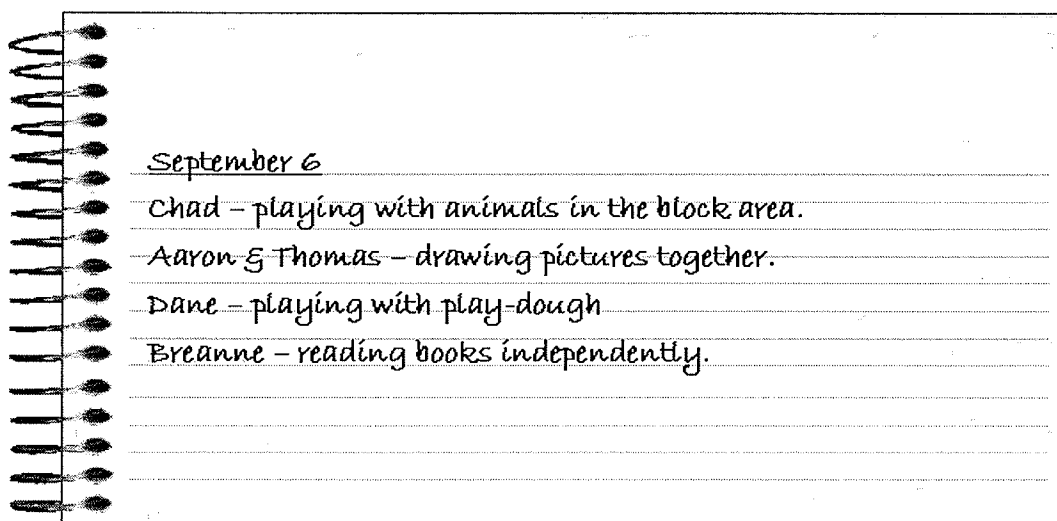


Figure 1. Anecdotal notes

The rest of the comments in my journal that week were similar in focus. What else was I supposed to be writing? I was not seeing anything more or understanding anything greater than what the children were doing on the surface of their play. This wasn't making sense to me. By the second week in school, I began to feel that I should be getting beneath the surface. I just didn't know how. Should I observe in a different way? Should I eavesdrop on group conversations or should I engage in conversations with the children? I

thought about the words of Kamii and DeVrie's (1977) as they describe a role of a teacher:

The function of the teacher is to provide materials, suggest activities and assess what is going on inside the child's head from moment to moment." (in Moyles, 1989, 169)

I decided to try and do that by talking with a group of children about their play.

The following day I scanned the room and located a group of girls eagerly looking at and talking about animal books. "I can do this," I thought to myself. "After all I do know a lot about books." I knelt down beside the girls and felt an immediate shutting down of their playful conversation. "Hi! I hope you don't mind if I sit down and listen to what you're saying about the animal books." "Sure, go ahead," they said. But the moment I sat down, I felt awkward about being there. Their natural play and talk had entirely stopped. They glanced uncomfortably in my direction. They waited for me to speak about the books they carefully held in their hands as if I was the authority and the knowledgeable spokeswoman among them. All I wanted to do was be one of the group members but instead I was an outsider. I couldn't understand why this was so difficult. In Language Arts, I had always been involved with reading and writing conferences with children. Why was this time different? Why was it so awkward for me? I do not remember much of the conversation that transpired because I kept thinking to myself that I was still visibly seen as the teacher trying to participate in the children's world of play. I was desperately trying to find a way to fit in but it was not working. How else was I

able to understand children's play and the life that existed within this world if I could not find a place to be part of their experience?

Frustrated, I went back over some of my anecdotal notes. As I began to compare the notes over the last few weeks, questions started to arise. Billy has been drawing pictures the entire week. Shouldn't he be doing something other than drawing every morning? Is drawing a useful activity in the first place? Another revelation showed that a number of children kept gravitating to the block area and building houses for their animals. Maybe, I thought, I should encourage them to write about what they were doing and we could put their stories in a book. Then we could share these stories with classmates during Center Time, which might, in turn, encourage other children to try and write . . . "Stop!" I had to stop! I could not believe what I was hearing myself say. Did everything that was considered valuable in school need to be showcased through reading or writing? Are reading and writing the only activities that I value? Why did I think this way?

I could feel my insecurities and prejudices rising to the surface. I had always considered myself a well-rounded teacher of young children but after hearing myself think, I was extremely disappointed. Is play, the way the children live it, a waste of time? Is reading a book more important than drawing a picture? Is writing about your block play more challenging a skill than building with blocks? Under the surface, I was sad to say, I must have believed they were. Consciously or unconsciously, I was always trying to force play in the direction of reading or writing.

Not to be unfairly self-critical, however, I think I did this because it was easier for me to follow the lead of children in Language Arts. I knew a great deal about Language Arts since I had both the academic background and the practical experience. I had also worked through many questions I had pertaining to how children evolve as readers and writers, which enabled me to easily see how reading and writing could be developed in children's work on a daily basis. My preoccupation came from a genuine interest and love of helping children understand the world through literacy. At the same time I also need to acknowledge that the society in which we live also values literacy activities in school over play. It was the ever-present concerns about "curriculum" and issues of accountability, standards and product that were echoed in my mind. The more I listened to the expression of these concerns, the more I questioned my own beliefs. Could the criticisms voiced by others have some merit? Were these voices saying that certain "academic" subjects should take precedence over other curriculum areas, such as the arts? Was it, therefore, wrong for me to question the amount of time Billy had spent drawing? The external voices demanded a focus on product. Where was the product in play if I could not preserve it by writing a story about it? And these individual voices were slowly becoming a "back-to-basics" chorus: Forget the "child-centered" curriculum!

So, here I was having turned my classroom into an even more child-centered setting? As Weininger (1995) suggests,

We are all pinned down in the age of financial cutbacks and claw backs, and we have to be very specific about what the *child is learning*

and in what ways. We have to be able to detail some of the ways in which play acts to help the process of learning. (10)

Since I did not know how play shapes learning, I tried to use Language Arts activities to define and demonstrate that learning. I did not even think about how language could play a role in helping the children understand what they are doing as they play. I only wanted to use language as a way to report on the play rather than understand it. The issues of accountability interfered with my learning.

My principal verbalized many of the same concerns I had. However supportive she was of me as a teacher, I could always hear a question in her voice when I talked with her about Center Time. "Are the children learning things that are new? Are they being challenged enough? Are they covering enough of the curriculum? If they are spending one-quarter of their day in play, when are they doing Math, Science, Reading and Writing? The government has mandated a certain amount of time each cycle to be spent in those specific areas. There is barely enough time to fit everything in now. How does Center Time take away from this core time?" The tension I was feeling affected the way I thought and acted. Of all the times in my teaching career to look at the world of play, why would I do it now when I was already questioning everything I was doing as a teacher?

My unsettled feelings about play reached a pinnacle in September with Meet the Teacher night. If I was so unsure of play's value, how would I possibly convince parents of its worth? For some reason, I could not find a way to connect play with learning?

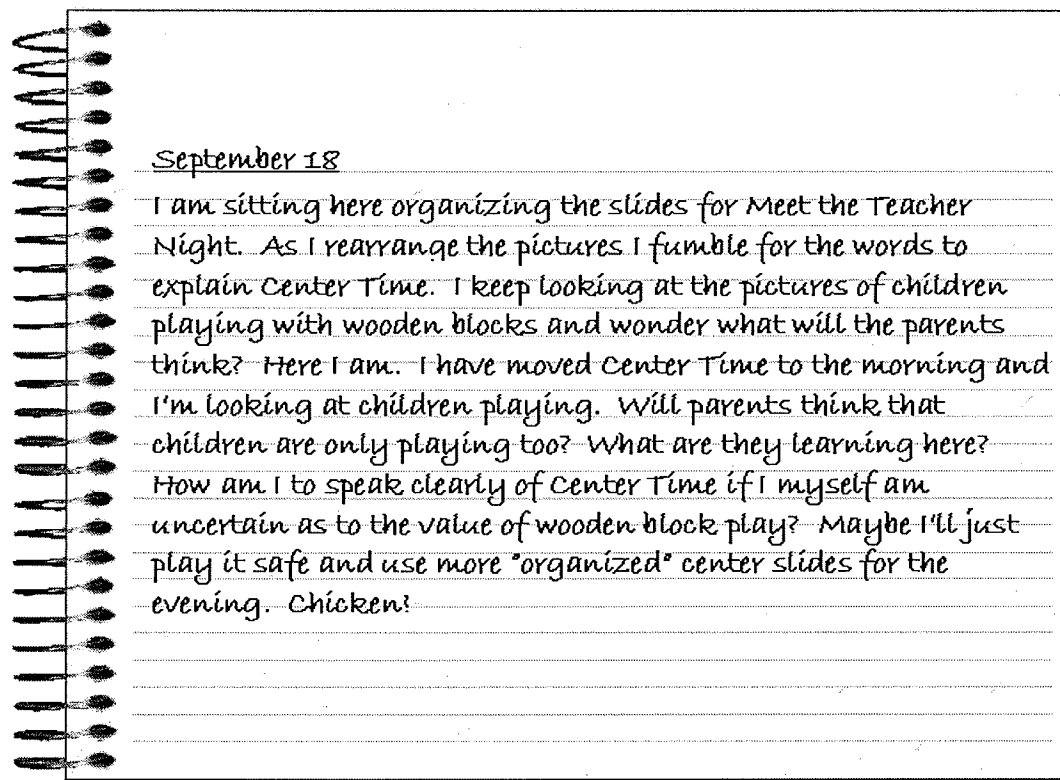


Figure 2. Personal journal entry

I definitely was scared. I did end up using very "neat and orderly" slides for the parent presentation and spoke mainly about the reading, writing and mathematical choices that children make during this time of day. I wasn't ready to be questioned or criticized for my decision to make Center Time one of the main focal points of the day. I didn't have the energy, time or knowledge to justify its place in Grade One. I just knew in my heart that it needed to be given a chance to renew the life and learning I had seen in my colleague's classroom. That was all I knew at the moment.

Somehow, I made it through Meet The Teacher night breathing a sigh of relief. No questions were asked about Center Time. No concerns were

raised. I felt like I had bought some time to learn more about this thing called play.

I took some time the following morning after Meet The Teacher night to examine the slides once more. This time, however, I shared them with a familiar audience—the children. They walked into the classroom and settled down at the meeting area. We turned the lights off and I began clicking through the slides. The children laughed with energy, smiled with pleasure and talked and talked and talked about what the slides meant to them. This caught me by surprise. Who would have known that these still life images of Center Time held such life and energy for the children? I had spent hours thinking of just the right words to use for the parent presentation. The children could have spoken for hours. What was so wonderful about children's play that it brought such immediate lively responses? What was the "Big Stuff" here that the children knew instinctively but I still seemed to be missing?

No sooner had we finished the last slide, than an eager voice from the crowd shouted out, "Hey! Is it play time yet?" "Don't you mean Center Time?" I responded. "Yeah. Is it Center Time yet?" "Sure. Go ahead." I shook my head and thought to myself, "Would I ever stop being so defensive about the word *PLAY*?" As I unloaded the slides from the slide projector a few kids came to tell me a little bit more about their particular slides. I sat on the edge of a desk and listened to their stories. For once I wasn't searching for a way to make use of my time and validate my teacher role. I have always had this strong need to not only be accountable for my student's time but to be

accountable for the usefulness of my time as well. As a teacher, I have this underlying voice that is always telling me that I need to be “teaching.”

Unfortunately, I have become so programmed to teach that I rarely make time for listening as an opportunity to learn. I enjoyed taking the time to listen. It felt good to be included and needed.

I took a look around me as the busy little bodies of Center Time were energetically involved in their play. I breathed a deep sigh. Once again I wondered, “What was it about play that brought the children to life?” If I was going to learn more about play then I needed to get much more deeply involved. This meant that I had to move from the observational sidelines to the front line. This meant that I needed to get closer to the action. This meant that I might even have to . . . PLAY. If I were to choose an area of play that I knew very little about then it would have to be the Block Center. Even though I dreaded the thought of playing with the blocks, I knew experiencing children’s play was key to my understanding it. This is the place that I would call home for the next few weeks. This is where my journey into the “Big Stuff” of play would begin.

CHAPTER THREE:

Building the “Big Stuff”

Making the commitment to join in the play at the Block Center was easier said than done. As a matter of fact, it wasn't easy at all. The children knew exactly what to do. I, on the other hand, fumbled my way through weeks and months of watching, sitting, wondering, writing and not playing until the block play changed and so did my need and my willingness to play.

The block play was a daily occurrence during Center Time each and every morning in our classroom. Children could choose from a wide selection of hard wood blocks of various sizes and shapes situated in a convenient storage shelf at the front of our room. From here they would carry the specific blocks they needed to a large carpeted meeting area that was only a few feet away. It was here that children would get lost in their play as they spread out their thinking and their imaginative creations on the carpet space in front of them.

My movement to the block area came with some reluctance. Thinking about the act of playing during a busy school day did not make me feel very comfortable. With all the work involved in teaching, how could I take time out for a little free play? At first I was not really interested in playing. Having moved closer to the block play action than ever before, I gave myself permission to take some time to closely sit and observe the children in action before I graduated into playing myself.

I sat at the edge of the meeting area where the carpet meets the hardwood floor. I remember feeling the ridge of the carpet divider underneath me as I settled into my self-defined space for a short period of time every morning—careful not to lean too far forward so as to interfere with the play and restricting myself from leaning too far back so that it was easy to exit from the play in front of me. No matter where I sat for block play, I unconsciously situated myself on this “boundary line” waiting for something to happen.

Carrying my journal with me, I would spend most of my time watching the children and writing about what they were building. During those first few months, the children’s structures were relatively similar to each other. Teaming in pairs or small groups of three to four students, children would construct various shaped flat enclosures that spread throughout the meeting area. The toy animals, housed in a shelf adjacent to the meeting area, were generally used in this play. The following is an entry from a Center Time journal that typifies the block play at that time. (Center Time journals were individual books that children used to record their thoughts about what transpired during Center Time that day. Children could write in them whenever they desired. As a class, we wrote in them about once a week reflecting on our individual play that day.)

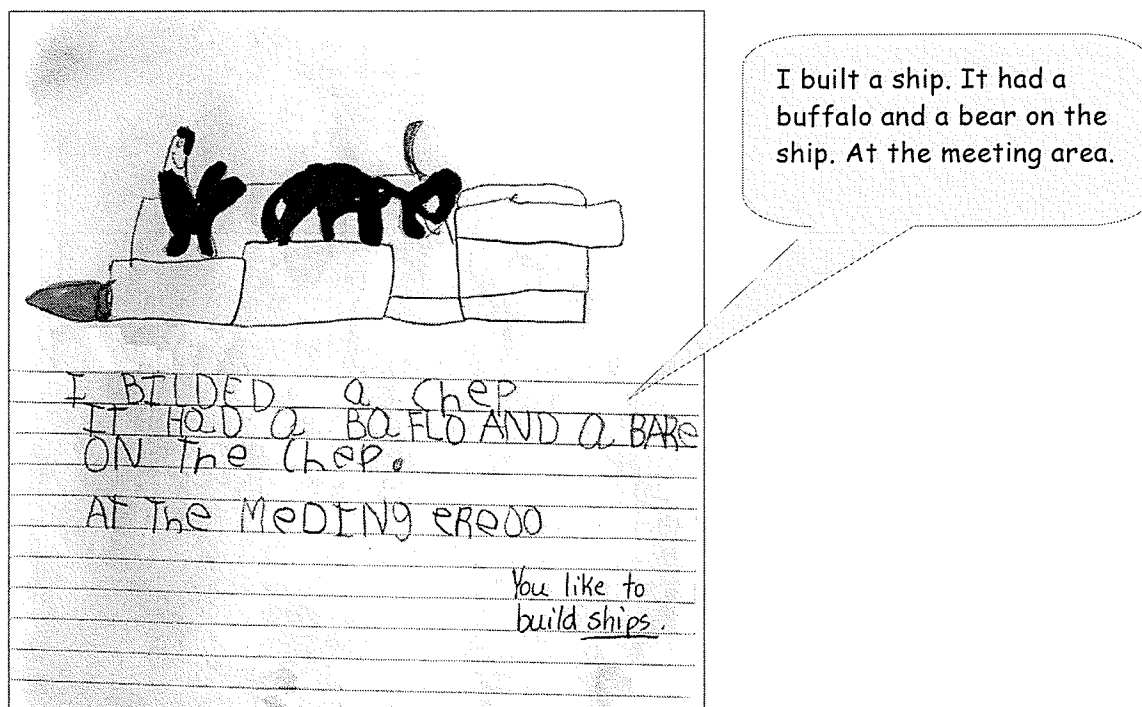


Figure 3. Randy's ship

As time went on, their structures gradually became bigger and taller and more detailed. Shells, buttons, pattern blocks or other forms of useful junk materials would be added to their structures. The degree of extra detailing usually depended on whether the boys were playing or the girls were playing. The girls attached extra details to make things look nice. The boys used the extras for traps, cannons, bombs or "magical crystals" with special powers. The boys limited the number of functional pieces on their structures while the girls lavishly draped their blocks with many detailed objects.

As time went on, the structures became more complex in their intent. Children that were playing in close proximity to one another would join their structures together. Structures that may have initially had a simple purpose

would suddenly become multi-faceted. Below is an example of another ship structure a few months later:

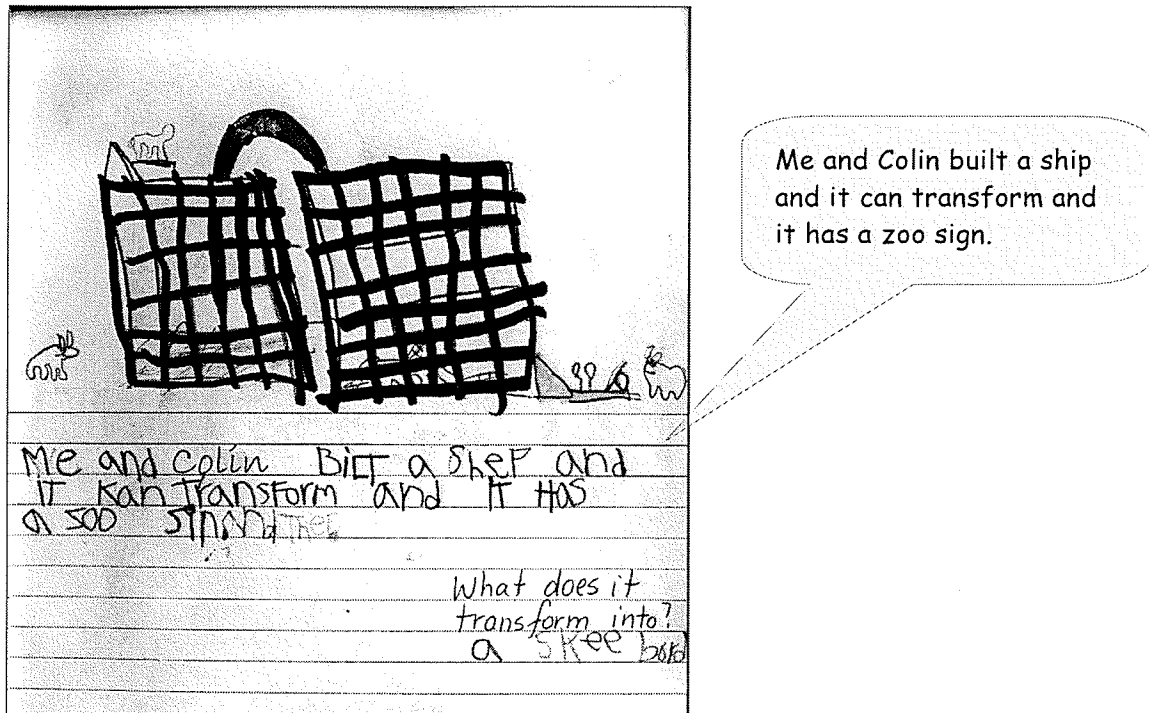


Figure 4. Randy's ship with extra details

As I sat watching and recording the children's play, the opportunity to engage in conversations with the children increased. My simple presence on a daily basis at the edge of the block play encouraged children to see me as an interested observer who was always there in comparison to an outside teacher who only touched base occasionally. Even though I didn't participate in the play directly, my mere presence seemed to make a difference in how the children verbally included me. What a different feeling from how I had felt at the beginning of the year, when I had entered into conversations with children in such an artificial way.

Opening this communication channel gave me an unexpected opportunity to learn more about the personal lives and feelings of these little people who were in my daily company. Adam, for example, was a quiet and bright little boy in our Grade One classroom. I watched him on a daily basis building ships at the block area. We started talking one day about how he was finding school and in particular Center Time. He thought for a while and then without a hesitation or a breath in his voice replied, "I like school but I don't enjoy Center Time very much!"

I was caught off guard by his admission and immediately questioned him about what he was thinking. "Tell me more about Center Time?" I asked. Adam thought and responded by saying, "Well . . . I don't like playing with the blocks very much."

This time I was really perplexed. "But Adam," I continued, "Isn't this where you spend all of your time during Center Time?" Adam agreed but did not elaborate on why this was so. We continued to talk about things he liked to do at school and we made a plan that when Center Time came again, he would make an attempt to go to the writing or the listening center (these were his choices).

The following day at Center Time, Adam caught me by surprise once more. When I asked him where he was going to work this morning he quickly and eagerly responded, "the blocks center." He was off to choose his blocks before I even had a chance to speak again. Why would Adam continue to go back to the block center after he adamantly stated yesterday that he did not

like playing in the blocks? Did he not remember our conversation and our plan for Center Time—he would try out the writing center or the listening center?

As soon as I talked to the rest of the children about their choices for the morning, I immediately went over to the block area and sat close to where Adam was working. I leaned forward from the edge of the carpet and asked him to come and talk to me for just a minute. He crawled beside me with a block still in one hand. Curious to know about his choice of Centers this morning, I asked him why he had decided to work at the block center again. I expected a typical answer such as “Oh, I forgot” or “I’m okay here now Ms. Crass. I really do like the blocks.” But that is not what he told me. What Adam did not elaborate on yesterday, he quite openly talked about today: “Well, Ms. Crass, that’s where all my friends are playing.”

As Adam crawled back through the maze of block structures erected at the meeting area, I thought long and hard about his words and his message to me as a teacher. The issues surrounding friendship are as important to these young children as my need is to fill the classroom with meaningful reading and writing experiences. Their work is their play and embedded in that play is an opportunity to be a friend, to make a friend or to discover the friend inside oneself. Adam, reminded me, that in school we need to deal with the human issues of who we are as individuals, and how we fit into the social structures of our classroom, our school and society. Sandra Stone (1995) speaks of the opportunity for social development within play’s natural learning environment:

Play contributes to children's social competence by giving them the opportunity to be social. It also provides children with an arena in which to practice social conventions, with the freedom to accept or reject those conventions. Play is the perfect opportunity for children to develop friendships and to see that someone else values them. (49)

Vivian Paley (1981) also reminds me that, "the question of identity is every child's most serious preoccupation." (31). This is a vital part of the classroom environment and it is my job to be aware of it and support its existence and development. Adam used the blocks as a tool for building social acceptance and security within his peer group not for building towers and ships. He very carefully pointed out that 'developing friendships' was going to be his form of work during Center Time, whether he liked the block area or not.

Another day, as I was sitting around the block play, I comfortably found myself in a conversation with a little girl named Bonnie. She was sitting next to Mike at the "Make a Shape Center." This was an extra center that I had organized in the room to support our study of geometry. The center was intended for children to construct two-dimensional and three-dimensional shapes with marshmallows and toothpicks. Bonnie was one of the strongest independently minded girls that I have ever taught and she loved to invent her own ways of doing things. As I spoke with Bonnie, I quickly realized that her motivation in coming to this center was not to make different "shapes" but to make different "things", thus taking us on a different path of understanding than I had expected:

Bonnie: We're trying to make different things other than shapes. I made a haunted house. It's an octagonal prism.

Teacher: A what? [completely caught off guard] How do you know that?

Bonnie: It has eight sides. [She counts them for me.]

Teacher: But you called it a prism?

Bonnie: Yeah. I got the idea from a rectangular prism. [pause] You can make shapes but they can be different things than shapes.

Teacher: You mean you can use the shapes to make different things.

Bonnie: This center is making me learn a lot. [little pause. She starts to focus on the toothpicks.] I'm learning how to break toothpicks.

Teacher: [I giggle] How?

Bonnie: I'm breaking them in half.

Teacher: What do you call this one? [I hold up a little piece of a toothpick. It is approximately one-third the size of a toothpick.]

Bonnie: Cracked!

Teacher: [I giggle again] If this is one-half [holding up one-half of a toothpick] then what is this [holding up one-third of a toothpick]?

Bonnie: Unhalf

Teacher: Unhalf?

Bonnie: Not half. I want to change it to "not half" so it's more mathematical.

Teacher: Oh, more mathematical, like in our sorting activities—half and not half, big and not big?

Bonnie: Yeah!

I am starting to notice that children play out their understandings of what they are learning or beginning to wonder about during Center Time. I wonder if the organized class activities of writing, reading or mathematics help give children a basis in understanding, but the extensions in learning come, in part, from their own inquisitive nature, and play just happens to be the medium for them to think things through? The concept of an “octagonal prism” was something that I had to inquire about. Is there such a shape? Bonnie definitely raised my level of thinking skills from the basics of what we had explored during Math time. Octagonal prisms were something that we had never talked about in class. We had spoken about various kinds of shapes and the concept of a prism, but we had never put the two together in the words “octagonal prism.” Bonnie’s ability to access what she knew about shape, dimension and the combination of the two and transfer it into another learning situation was quite incredible. Eleanor Duckworth (1985) speaks of how important it is for children to be able to know how to use their knowledge to access other knowledge:

In Piaget’s terms, you must reach out to the world with all your intellectual tools and grasp it, assimilate it, yourself. All kinds of things are hidden from us—even though they surround us—unless we know *how* to reach out for them. (7)

Center Time provides Bonnie with a place and time to reach out and understand more about the concepts she’s grappling with, the questions she has, and the discoveries she has yet to make.

But I couldn't help but think, what would have happened if I had chosen to introduce this center (or this opportunity for further learning) during "Math" time? By giving Bonnie more time to play with her immerging concepts during math, would I not have seen the same results? Sylvia Chard (1995) raises many questions about learning in play and learning in work in her letter to the editor in the journal, "Canadian Children":

I think it is not so much a question of whether children are playing or working but rather whether they are learning. (7)

This insight led me to think that I may have to re-examine the notions of learning during my "Math" time in the future.

Bonnie's ability to use language in expressing her thinking intrigued me as well. It was in our exploration of sorting and classifying activities in Math that as a class we became familiar with the mathematical language for sorting—what something "is" and what it "is not." In the last half of the conversation with Bonnie she invents her own language for what one-third of the toothpick "is not." She states that it is "unhalf." She is happy with this definition until she remembers who she is speaking with (her teacher) and the fact that she wants to make her message "more mathematical." She then changes her wording to "not half" which is the language of the culture of learners in our classroom. Bonnie's modification of her language during our conversation reminded me just how powerful words are in connecting us to one another:

Language is the means by which we affect each other and ourselves in contemporaneous dialogues—within self and with others. Language is the 'how' of our connectedness, the way in which we come to possess things in common. Communication requires partners who each will modify and regulate their activities in order to secure understanding. (Cuffaro, 1995, 25)

The fact that Bonnie recognized her own interpretation needed to be adjusted made me think about Vygotsky's Zone of Proximal Development (1978). Laura Berk (1994) writes about the significance of the "experts" or "mature members of society" (80) in the learning relationships with the child as well:

Expert advice gives children the framework they need to use private speech effectively. When an adult assists a child with a challenging task, he or she can offer spoken directions or strategies to help that child succeed. The child can then incorporate the language from these conversations into private speech. Later, the child can use this language to guide his or her own efforts. (82)

Just as I had worked with the entire class on the "mathematical language" of sorting, Bonnie now uses this language (and other variations) quite effectively in guiding her own efforts. (Berk, 1994) She also recognizes that an appropriate use of language makes her meaning understood in the mathematical culture of the classroom.

In spite of all that I had learned so far, I couldn't help but think to myself, that there still had to be more involved in the play. The children built their block structures with such intensity and life that I felt I must be missing something. I knew in my heart that if I could just force myself to play, I might discover something new and exciting about block construction that I had never

before realized. But I couldn't do it. Building a ship with animals on board was just something I wasn't interested or excited about doing. The children loved this play but I did not feel connected to it. I lingered longer along the carpet divider, unable to push beyond that imaginary boundary line until one day when the play changed.

I was summoned to the meeting area one day by my student teacher who noticed something different happening in the blocks. It had taken a while for me that morning to make my way to the Block Center. The kids at the plasticine center had needed some extra support organizing our classroom guinea pig as a model for their sculpturing sessions so I was not able to begin the day with the block center. In the meantime, the block play had proceeded forward without my observing presence.

As first glance the meeting area looked busier than usual. Children were always playing with the blocks but with the introduction of a geometry unit in Math last week, the number of children utilizing the blocks had increased. By re-introducing the blocks to the children, from a geometry perspective, even children who rarely went to the block center seemed to be captured by the spirit of exploration as they played with these "old" three-dimensional blocks with "new" eyes. I found a place beside my student teacher who just happened to be standing in my safe observational zone at the edge of the meeting area. He pointed to two boys crawling rather quickly back and forth beside their structure. "Look at that structure," he said. "I think it's a ramp!"

My eyes widened as I leaned forward to look more closely. For the first time, I observed something I had never seen before—a ramp. Randy and Myles who were regular players in the blocks were the boys involved. They had built a ramp: but it was quite an unusual design for a ramp. It was a long ramp with two levels. The first level was a flat horizontal plane situated a few inches from the ground. The second level was another horizontal plane with sides on it but it was situated directly on the ground.

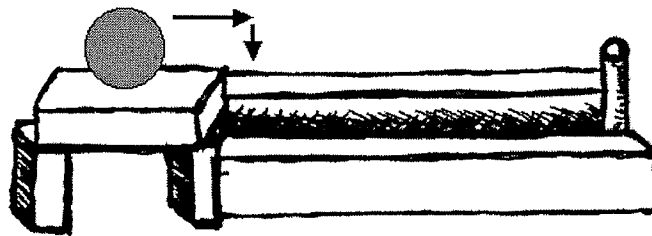


Figure 5. Ramp structure—1st variation

The boys would take turns rolling a wooden block along this two level ramp hoping it would eventually hit a target block at the end of the ramp. As I watched more closely I couldn't help but notice that the sphere rarely completed the mission of making its way to the end of the ramp and knocking down the block. As a matter of fact, it barely managed to reach the end of the ramp at all. The boys would roll the sphere along the first level until it reached the end of the plane. It would then drop to the second level with barely enough momentum to roll any further.

Curious to investigate how I would alter the ramp to allow the sphere to hit its target, I inched a little closer. The more attempts the boys made at rolling the sphere along their ramp the more I was drawn into the action. I was very interested in learning more. I wanted to help. I wanted to get into the play.

Without a moment's hesitation, I stepped onto the meeting area and into the land of play. For just a split second, I felt a little awkward and little tall, but as I refocused on what I wanted to know, my uncertainty went away. With interest and curiosity about how the ramp worked, I crouched down as low as I could and began to inquire about the block play.

Teacher: How could you make the ball or sphere, as I call it, go faster?

Myles: You could do this. [He pushed the sphere harder with his hand. It did increase the speed slightly.]

Teacher: What else could you do?

Randy: You could make it higher.

Teacher: Could you tell me more about that?

Myles: You need this piece. [He held up a block.]

Teacher: The triangular prism.

Randy: We need to make it taller. [Myles places the triangular prism under the end of the first horizontal plane. It raises it up slightly to make an incline. The boys test out the idea.]

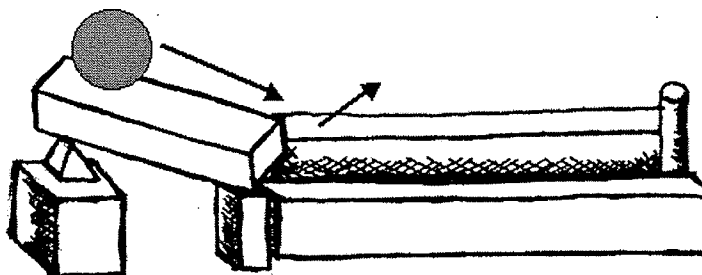


Figure 6. Ramp structure—2nd variation

Teacher: Does it work?

Randy: No! [The sphere comes down the first part of the ramp but hits the walls of the second part of the ramp.]

Myles: Let's make it really high so it goes really fast.

Randy: But how will it drop on the ramp?

Myles: If you make the sides bigger it will go right through.

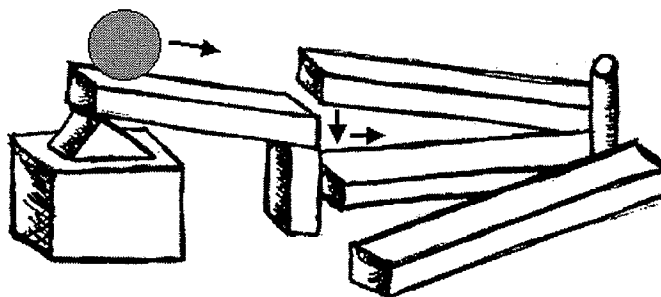


Figure 7. Ramp structure—3rd variation

Randy: See it drops right down. It doesn't roll. You need to make it more curvy.

Teacher: So what do you need to do?

- Myles:** We need to push it out more so it will land softly and roll down and won't break the walls.
- Randy:** And hit the ground.
- Myles:** It goes faster when it is higher up because it goes slanted. It is longer to go down.
- Randy:** If it is slanted there's more time to roll down.
- Teacher:** Could you explain that to me?
- Randy:** I slid down a slide and it was slow. It was only this big. [He held out his arms to show the slide was about the same size as him.] Then I went on a big slide. It was taller up and longer than me. So I went faster. It was also slipperier and higher so that makes you go faster too.
- Myles:** So the bigger it gets the faster it goes.
- Randy:** It needs a slanted piece and a curvy piece.

Before I knew it, the bell had rung and it was time to clean up for recess. Where had the time gone? I could have continued this conversation and played with different possibilities for ramp variations for hours. I found Myles's and Randy's rationales for how things worked and methods of problem solving incredibly innovative and enlightening and I knew they were genuinely excited about my involvement in their play. I could just feel it. I was as interested in knowing how to make the ramp work better as they were. This was a wonderful place to be. It felt so comfortable that I knew I would be back tomorrow to play.

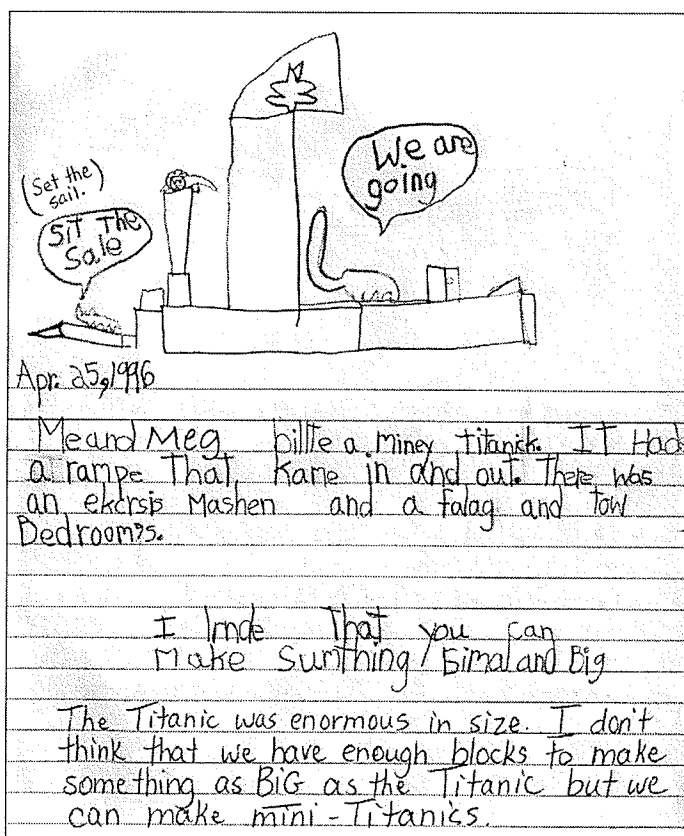
As I reflect now on my debut into the world of block play, I am surprised by how easy it was to play once I found something that connected to me. As I waited for months on the edge of the meeting area, I could not play because

my desire and interest were not present. I could have forced myself to play but that would have been artificial and unnatural. Children did not come to the block area to play because they were forced to build structures. They came because they had a desire to do so and I desperately wanted to understand that desire. After all, it was in the desire to play that the children burst with life.

The moment Randy and Myles explored their first ramp, I knew I had a place to play. My connection to their play was very personal. The idea of a sphere rolling down a long ramp to a final target reminded me of curling—a game I played quite frequently and passionately. Our conversation about how hard to roll the sphere, the speed of the sphere, the movement of the sphere, and the angles and curves involved in hitting the target felt very comfortable and natural. I felt at home in this conversation, the problem solving, and the construction. My desire to be a part of this play was real and with that desire came a zest and a willingness to learn as much as I could about the children's block play.

As the days proceeded forward, my interest in the ramp construction became even stronger. The children had noticed that I was no longer sitting outside of the play. I'm unsure whether a greater impact was felt from my physical presence in the meeting area or from my excitement and my desire to play and talk to the ramp builders, but all of a sudden many children were now engaged in building ramps of all shapes and sizes.

Some children made ramps that naturally emerged from their ship building experiences. Some children constructed an evacuation ramp built from a maze of blocks that would either manually drop down or lift up, to accommodate any unforeseen emergencies. The ramp in this example adds another dimension to the diversity of this ship, thus enhancing the dramatic play in a new direction.

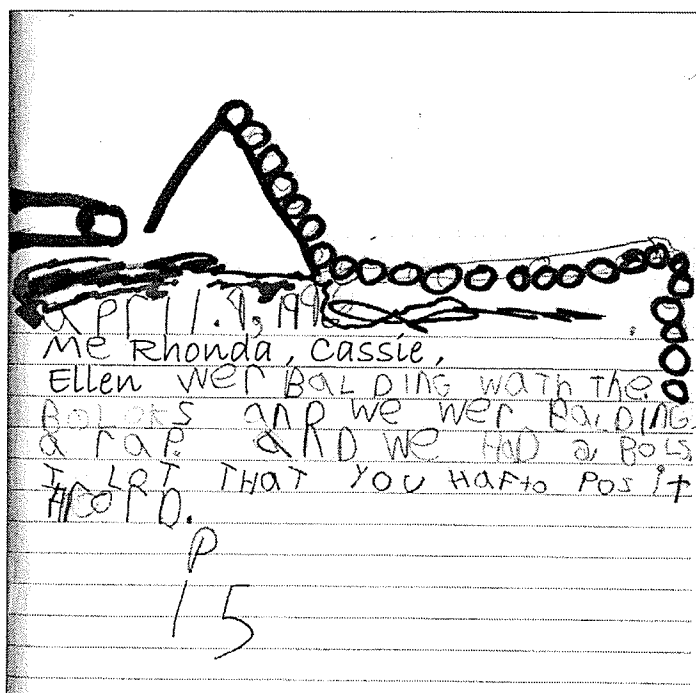


Me and Meg built a mini Titanic. It has a ramp that came in and out. There was an exercise machine and a flag and two bedrooms.

I learned that you can make something small and big.

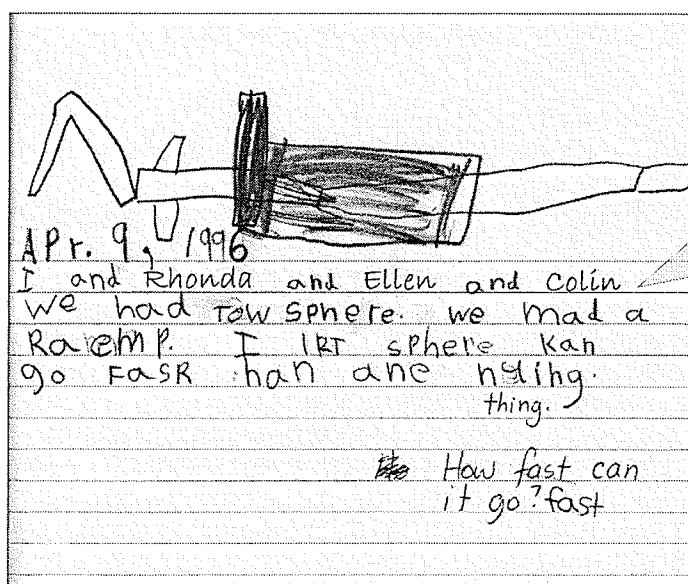
Figure 8. Randy's ship with a ramp

Other children carefully examined and explored the movement, action and reaction of the sphere on the ramp. Their inquiries were focused on investigating scientific and mathematical principles through play.



Me, Rhonda, Cassie, Ellen
 were building with the
 blocks and we were
 building a ramp and we
 had two balls. I learned
 that you have to push it
 hard.

Figure 9. Colin's exploration of force



I and Rhonda and Ellen
 and Colin, we had two
 spheres. We made a
 ramp. I learned sphere
 can go faster than any
 thing.

Figure 10. Cassie's exploration of speed

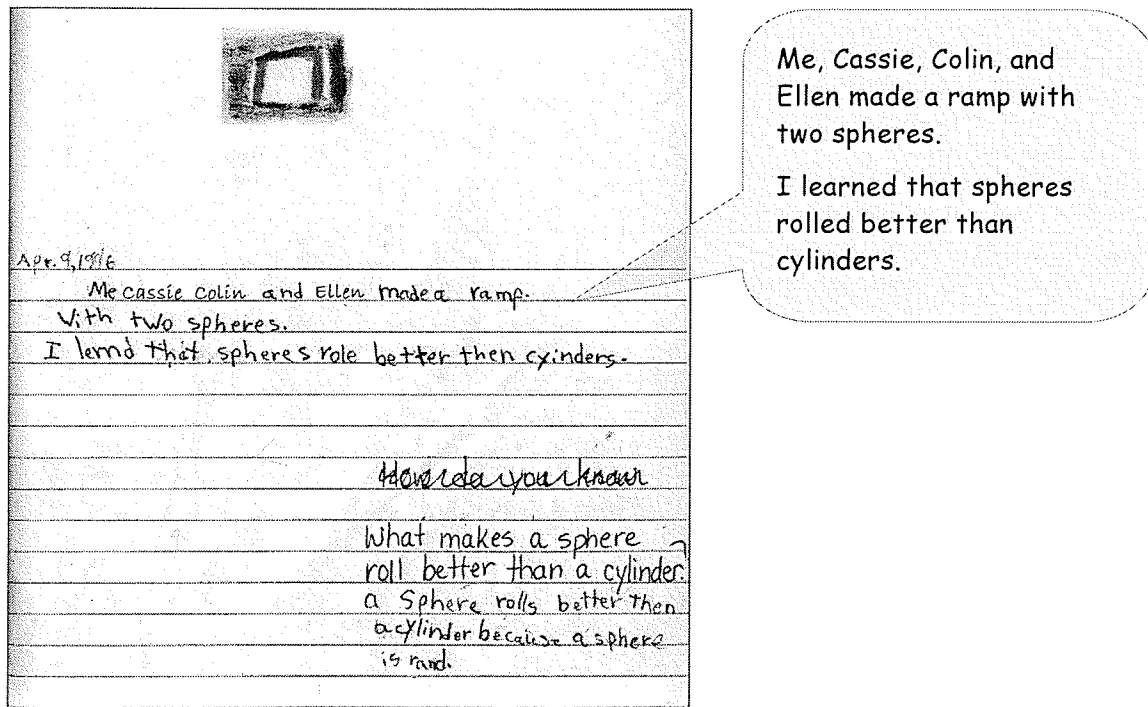


Figure 11. Rhonda's exploration of geometric shapes

Similar to my first experience with Randy and Myles in the block play, I felt a definite comfort level and interest in what the children were thinking about and in turn recording in their Center Journals. I found their insights rich with meaning and understanding. I had no idea that the children were thinking about so many aspects of physical science and mathematics while they played. I had always assumed they were just playing.

Colin, Rhonda and Cassie's journal entries were also informative from another point of view. All three children worked together in constructing their ramp, yet each journal entry highlighted different perspectives of the same play experience. Colin focused on the amount of force needed to exert on the ball or sphere in order for it to move down the ramp. Cassie focused on a

different scientific concept. Her thoughts revolved around the aspect of the speed at which the sphere travels. She was definitely surprised that the sphere could travel as fast as it could during her ramp play. Rhonda, on the other hand, looked at the shape of two geometric solids that she experimented with during the ramp play—the cylinder and the sphere. After many attempts at using both objects on the ramp, she learned that spheres roll better than cylinders. As I questioned her further in her journal about this observation, she expanded on her findings by referring to the importance of its shape—“a sphere is round.”

Once again I was caught off guard with the variety of concepts the children were thinking about: three different observations, three different perspectives, all of them evolving from the same experience. Children seemed to be experimenting with many different concepts as they worked with the blocks. If Colin, Cassie and Rhonda were able to reflect with such unique and individual perspectives while simultaneously playing together with the ramp, what other emerging concepts were children grappling with as they worked on their own or with their friends that I was not aware of?

Anxious to know more about what the children were thinking and what knowledge they were constructing, I continued to wiggle my way into the block area to talk and play with the children. As I did so, I made a conscious effort to think about the ways in which I engaged in conversations and the kinds of questions I was asking. It was very important for me to demonstrate for the children that they needed to verbalize their thinking of what they were learning

and how they came to form their thoughts and ideas. I believed this was crucial in helping children become independent thinkers who were responsible for their own learning. The way we talk with children to understand their meanings, directly affects their understandings in the process. Our questions offer possibilities for children to reflect on and to reorganize their ideas in more adequate ways that aid in the construction of their knowledge (Duckworth, 1979, Piaget, 1973, Gaffin and Tuff, 1985.) "Simply questioning—What did you mean? How did you do that? Why did you say that? How does that fit with what she just said? Could you explain your thinking a bit more? Could you give an example? How did you figure that out?" (Duckworth, 1985, p. 97)—opens new opportunities for learning. Hence, I engaged in conversations with children focusing on their learning, and in so doing, I unconsciously affected my own learning.

After watching the ramp play change yet again, I realized and verbalized my own questions about what I saw happening as the sphere moved. The ramps had evolved from a two-plane construction to a single level incline directly on the carpet. The purpose of the ramp was no longer focused on hitting a target block, located at the end of the ramp, but rather on helping the sphere manipulate itself around a curve. As the ramps became more complex, the problems became more complicated. After weeks of watching and playing with the ramp builders as they explored the exciting features of curves in ramps, I was left wondering how curves really worked. The children had experimented with a number of variations of angles in curves

using rectangular prism blocks, but it wasn't until they tried the curved block that they saw the speed of the sphere increase. The children believed that the addition of the curved block enabled the sphere to move faster on the ramp than it had on the long straight ramps they had constructed earlier. Randy draws and writes about this in his journal.

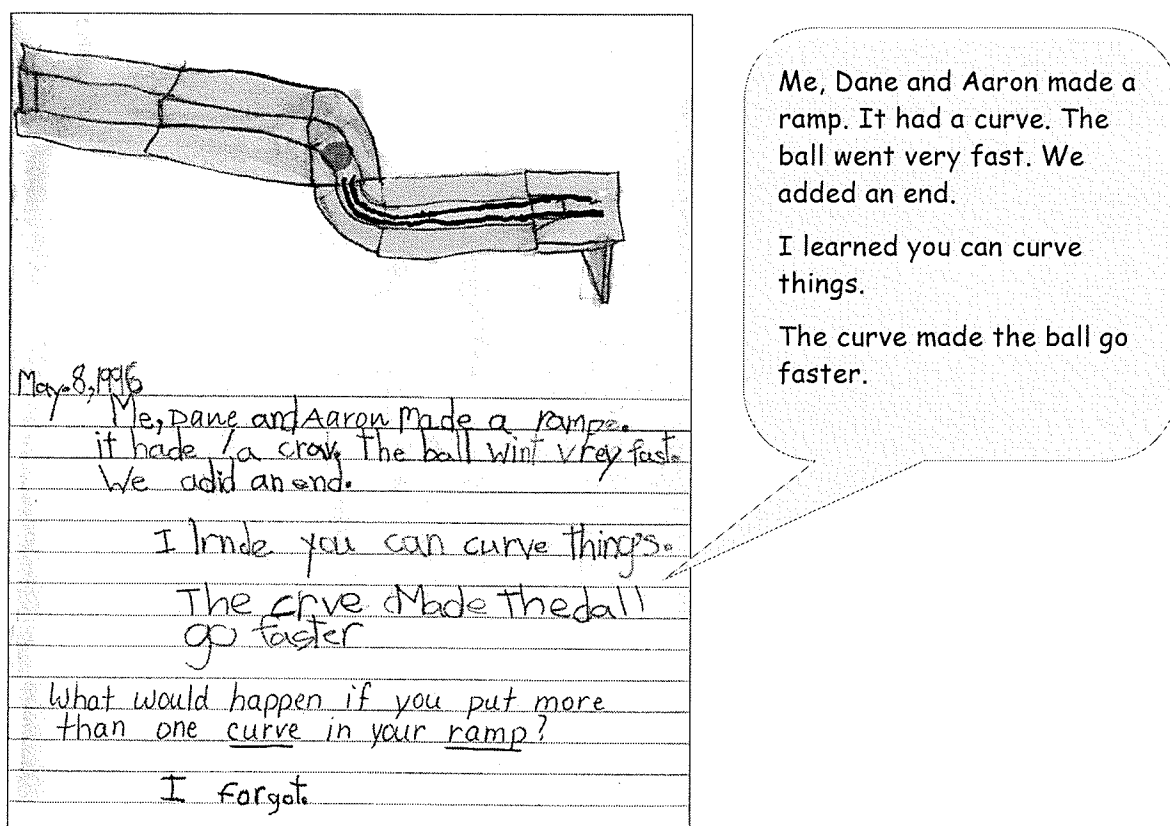


Figure 12. Randy's exploration of curves and speed

Questioning how the curve made the ball go faster, I verbalized my thoughts to the ramp players, "I wonder how the curve helps the ball move faster down the ramp?" The children believed that "it pushes it along" giving it

an extra burst of speed in comparison to the straight ramp. The longer I observed the sphere's speed, the more it appeared to me to be true.

Extremely curious to know exactly what was happening, I came home from school that day and engaged in a very strange conversation with my scientifically inclined husband. Knowing that I showed very little interest in matters that dealt with "wondering why" things were happening, he looked at me rather oddly, as he explained his understandings. It seems that the change in speed the children observed as we compared the sphere's movement on the curved ramp to that of the straight ramp was merely a perception. The sphere on the curved ramp only appears to be moving faster because we are able to witness bigger changes in its movement with the curve than in a straight line. Since we can see more movement, it appears as if the sphere is traveling faster even though in reality it slows down. The change that does occur is that of velocity which is the change in speed in a particular direction.

I reflected on the amount of knowledge I had accumulated from this one social learning experience. If it were not for my play, my questions of confusion and reflection, and my interest in knowing more, I would never have entertained talking to anyone about this subject area. But now that I have, I am starting to realize the impact conversations have in informing our working knowledge and forming our emerging concepts. The contribution of knowledge from a member of a more sophisticated science thought collective also played a valuable role in influencing my thinking about curves. With

these thoughts in mind, I decided to change the focus of our Sharing Time after Center Time. Sharing Time until now had been a time for children to gather at the meeting area and talk about what they had been involved with during Center Time. I had organized this talk time so that children had the opportunity to talk about something they knew a lot about—their play. Now I wanted to challenge their thinking even further to include a celebration of the ideas they were thinking about, the problems they were encountering in their play and the ways they were solving these problems. In this way, the children would have a place to talk about their learning and hopefully they would be more aware of how they were learning and the rest of the class would have an opportunity to converse with their peers about their learning too.

I soon found out that the children were very comfortable talking about what they were doing during Center Time, but they had a difficult time verbalizing what they were learning. It shouldn't have surprised me but it did. This was an entirely different conversation. It entailed observation and reflection, which were not always first and foremost on the children's minds as they actively engaged in play. The children needed to be aware of how they were thinking. Therefore, I set out to question more deeply how children had formed their knowledge and to listen more intently to the problems children were struggling with as they played so that I could initially remind the children to talk about these particular aspects of learning during Sharing Time. Once again I wanted children to realize that these conversations were important in the learning process.

I watched one day as a group of girls who rarely went to the block area managed to find themselves in the midst of all the hustle and bustle of block play. I sat next to them as they worked and complimented them on the fact that it was nice to see them in the block area once again. They said that they never went to the block area when they were in nursery but came to it a little more often in Grade One. Today they were there because they wanted to build a ramp.

My eyes closely observed them as they went about building their ramp. They used a small flat block supported by a triangular prism block to make an incline. The final part of the ramp consisted of a "make shift" curve that was constructed out of short rectangular prism blocks. It was built at a right angle.

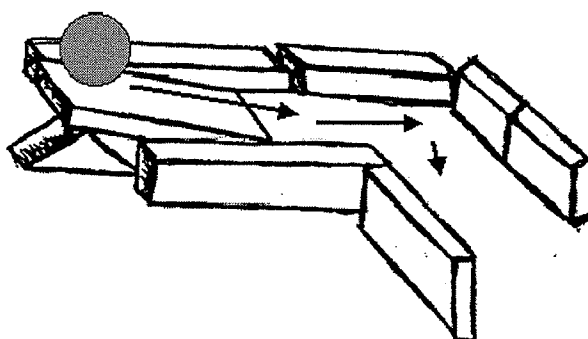


Figure 13. Ramp with a right angle corner

The girls took turns rolling the sphere, which happened to be a tennis ball this time, down the ramp into the right angle corner. Unfortunately it was unable to maneuver through the right angle. The tennis ball would roll down the ramp, hit the right angle corner, roll a bit more and then stop. The girls tried

repeatedly to make the ball curve through the ramp but to no avail. Seeing this as a wonderful problem solving opportunity for more children to think about, I asked the girls if they would like to share the difficulty they were having with the ramp during Sharing Time. They said, "Sure!"

When it came time to talk about their morning at Center Time, the girls were very honest about their endeavors—"We built a ramp but it (didn't) work." With the ramp situated at the meeting area for everyone to see, the girls demonstrated the problem they were encountering. Once they were finished talking, I encouraged the rest of the class to think about the problem with the ramp and to offer any advice or suggestions in solving the problem. It didn't take long for the children to talk.

Chad: It needs a curved block for the corner. [He proceeds to change the flat right angle blocks for a curved block.]

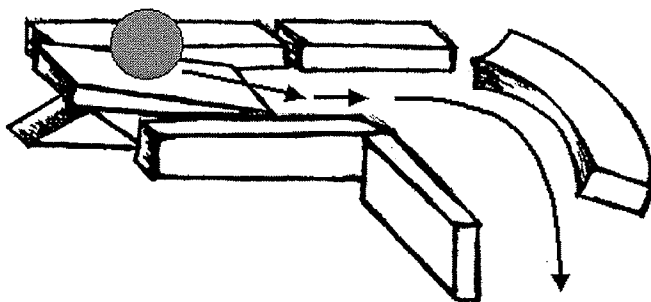


Figure 14. Ramp with a curved corner

Colin: Maybe the tennis ball is soft. Try a golf ball or a small hard ball.

Dane: A rubber one.

- Chad:** It would bounce back off the wood.
- Myles:** Move the block to curve it more. [He increases the curve in the corner and lets the tennis ball roll down the ramp.]
- Randy:** You need more power. [He increases the incline. It falls. He puts it back up and shows the girls how to support the incline by putting heavy blocks at the back of the wall.]

As I listened to this thought collective of young thinkers and problem solvers, I marveled at the many strategies they employed to try and solve the ramp problem. Even though I selected only a small piece of the conversation from the group discussion, I couldn't help but notice the level of sophisticated problem solving techniques and ideas, which came from our most experienced ramp builders. Their suggestions were scientific and based on the experiences of many months of trial and error efforts and approaches. Their knowledge came from their own questions that they had asked themselves many months back as they diligently played in the blocks. Now with similar questions posed, they readily used their collective knowledge and past experiences to offer insights for these beginning ramp builders. They carefully assessed the various aspects of the ramp and in some cases anticipated the outcomes before they were even explored. These experienced builders confidently exchanged ideas and offered different viewpoints to consider. Their suggestions were confident and to the point, yet extremely helpful and supportive to the girls. After spending many months watching the ramps evolve, it was very easy to see how the builders' thinking unfolded.

The social aspect of learning had grown from a few children building a ramp together to my inclusion in the experience to finally the entire class

being exposed to conversations of problem solving and higher-level ramp construction concepts through Sharing Time. Not only was I pleased to see that the group of girls who originally raised the question about their ramp had been offered a lot to think about, but everyone in the class had the opportunity to be part of this learning experience as well. I had often thought about the few children in the class who never went to the blocks area to play. How could they be privy to the wonderful ideas and questions the block players were wondering about if they never visited this part of the room? The ramp players and I were having great conversations that confronted our assumptions and pushed us down new paths of inquiry. But what about those few non-members who really didn't want to be playing in the blocks? I knew I couldn't force them to play just as I couldn't force myself to play until my willingness and desire to play was present. Until now I had been unable to find a way to expose them to this knowledge naturally and unobtrusively. By developing our Sharing Time to include demonstrations and conversations about what children were learning and how they were thinking through their problems at the blocks, I could include these few individuals in aspects of block play that they might never otherwise consider.

Encouraged by the amount of thinking and learning that happened through dialogue and reflection, I decided to expand the social circle of building expertise to include parents. Once again, problems and questions that arose from the children's play pushed us in a direction where more help was needed and another avenue of learning lay open to us.

I sat and watched a group of children explore the ways in which they could build the tallest tower possible. The experience of the builders varied. Everyone had their own ideas of what could work and why.

Madeline: It's best to put the longest blocks at this part [low to the base] because if they go on top it will put more weight on the tower so it will tip. Me and Alba tried yesterday with the long blocks up there and they fell down."

Myles: I think if we add more down here [around the base] it would make it sturdier.

Madeline: If this block is here [holding a cylinder higher up in the air], it would push those blocks down [the extra support blocks around the base] if it fell.

Myles: If we put more blocks around here [around the base] it won't let the [other] blocks fall down.

Both Madeline and Myles offered varying perspectives that could be true in various scenarios. Madeline experimented with strategically placing long cylinder blocks on the top part of a tower. She discovered that they fell down because of their weight. Myles felt certain that by adding more blocks to the base of the tower the cylinder blocks would be better supported. I did not join in the conversation because I was a little uncertain about design technology and what would be the most effective method of constructing this tower. The only question I managed to raise was "I wonder how people are able to build tall thin skyscrapers like the one you're trying to build?" As I verbalized the question, I immediately realized that we had someone within our midst who could help us think about building concepts from a deeper base

of knowledge. A few days later I invited a special guest to join us at Center Time.

"I have asked Randy's dad to come in to talk with us today because he knows a lot about building. I am not an expert builder. We can't all be experts at everything so when I need to know more about building, I talk to someone who has expertise in that area. Now, when I sat in the block area a couple days ago, I was listening to all the building conversations around me. I started watching the tower people—Madeline, Katrianne, Myles, Alba and a few others and their big questions seemed to be, 'How is it possible to make a tower as tall as can be?' I couldn't help them out too much because I did not know a lot about building towers so I started thinking . . . who does? That's when I remembered Randy's Dad who came in earlier this year to help us build our Library, Toys R US and McDonald's center. So here he is today to help us think more about building."

Randy's dad began by talking about the 2-3 different kinds of systems for building, the oldest system being the stacking system. He proceeded to take some small rectangular prism blocks and demonstrated how one block was first laid down and then another one was placed on top. He continued to stack them until the children noticed how unstable the tower was becoming the higher up the blocks were stacked.



Figure 15. Design technology—the stacking system

He then talked about a second kind of building system, which he called the post and beam system. He took four cylinder blocks and balanced a large flat rectangular prism block on top of them. The cylinders were at the four corners.

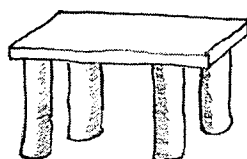


Figure 16. Design technology—the post and beam system

The children realized immediately that this type of system was stronger and better balanced. A few children then showed Randy's dad what they had tried to do. The structural base of their tower was made with two cylinders and one flat rectangular prism block. The children commented on the fact that it was wobbly. "You didn't have enough posts," Randy's dad replied. "You need to make a system that is strong on the bottom to hold up the top."

He then showed the children how to repeat the post and beam method at different levels.

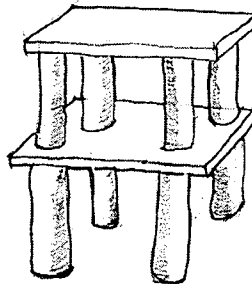


Figure 17. Design technology—The post and beam system at two levels

The children were noticeably amazed and excited with the structure's stability. "The more foundation you have, the stronger your building," Randy's dad continued. "If you wanted, you could use a stacking system and build wider on the bottom. (He proceeded to show them.) You need lots of surface area. The wider your surface, the taller your building can be."

The amount of meaningful knowledge that Randy's dad made available to all of us, was incredible. He answered our questions, collaborated on the ideas we were working with, demonstrated how to think about building taller towers with the real materials we were using and valued the problems we were confronting in our beginning attempts to make real and purposeful structures. What was even more incredible was that after he finished talking to the children, he stayed to play for Center Time. He sat with the tower builders and asked them thinking questions like, "Why are you using the smaller blocks up there?" and "How do you think you'll get it that high?" He

then found a place among the ramp builders who were building yet another ramp. He showed them how to use the triangular prism block to create a wider angle and a gentler slope for the sphere to travel down. The children immediately saw how this affected the movement of the sphere, a concept they had been working on for weeks. His engagement with the children showed his own personal understandings about what he knew to be real and meaningful learning opportunities for young children. When I spoke with him afterwards he reinforced those beliefs by admitting that he did not have the “opportunity” to do this when he was in school.

Opportunity. A word I never would have used to describe Center Time until I had come to understand the opportunities for learning that were available through play in the same way Randy’s dad did so naturally.

As old sayings go, “Opportunity only knocks once.” If I did not take the opportunity to jump into the play at the moment it opened up for me, I could still be sitting on that dividing boundary line, alien to the learning, the life and the power that comes with being a “player” in the classroom. By stepping forth to play, I could finally understand what brought the children to life.

- It was the ability to connect with a friend or two regardless of the play situation. Friendship was the agenda. The play was secondary.
- It was the opportunity to go in search of your own questions. It is through these questions that you define yourself and come to a greater understanding of who you are and what you believe.

- It was knowing that as an individual we possess a great amount of knowledge and understanding about how the world works, but as a collaborative group of social learners we know so much more and can do so much more. As Madeline so confidently writes, “It is easier to figure out questions with my friends.” Little Julia shyly adds, “I used to build tiny structures and now with teamwork I can build big structure.”
- It was the ability to value our learning and to realize that we are learning all the time. Being present to and aware of what we are learning and how that is happening enables us to take giant steps as independent thinkers and problem solvers. Myles understands this and writes, “In all of my centers I learned that the specialist thing in Centers was learning. That’s what I will never forget.” And I will never forget everything that I learned in Center Time—all because I seized the opportunity to play.

CHAPTER FOUR:

To Know or Not to Know? That is My Question.

I still remember the moment in time that changed my view of science forever. It wasn't a grand event or a brilliant revelation. It didn't exude applause or cause media attention. It was simply an everyday ordinary occurrence that found in me a place and a time to evolve.

Our Center Time that morning began as some days do—just not going the way I had planned. The “Mom Volunteer” I had asked to help work with a group of children on a science experiment, did not show up. I was left to fill this position even though I had other intentions for the morning.

The experiment I had organized dealt with observing the space that air occupies inside a balloon. The children and I came together around a small round table that had the necessary tools at our disposal—balloons, a tub of water, clear plastic glasses and paper towels. I began handing out the balloons to the children and no sooner had I done this than balloons started flying around the table. I could feel my patience slipping. I just wanted to get this experiment done. “ ‘Hold onto your balloon as you let the air go,’ means exactly that—Hold onto your balloon!” I knew I was getting more irritated but I continued with my agenda. I then gave the children a plastic glass and showed them how to stuff it with a paper towel. I was just about ready to ask them to make a prediction about what would happen to the paper towel if we placed the glass upside down in the tub of water when a loud cry from the other side of the table altered my course of direction as nothing had before.

"Hey! Look at what's happening to my cup," yelled Randy. I don't know why I allowed this distraction to catch my interest but I am glad it did. It has made all the difference in the world in my understanding of science teaching with young children.

The table, which was already a little wet from the flying balloon act, set the stage for the drama. Randy had placed his glass in the wet puddle of water on the table as he attempted to scrunch up the paper towel for the experiment. As he did, the cup suddenly began to make erratic movements on the table all by itself. As if drawn in by a magical force, the children and I leaned as close as we could to the moving cup and began to think aloud:

- Aaron:** It's like Magnet Power but it's not magnets. [Magnet Power was an experiment that we did that looked at the ability of magnets to move objects on the surface of a piece of cardboard while positioned underneath the cardboard].
- Teacher:** It reminds me of Lee's experiment when he put the plastic box on a wet plastic stick. He tried to pull it apart but it was difficult. The water wouldn't let it go.
- Aaron:** It's like a force field.
- Ellen:** The water is strong. The water is moving and it pushes the cup, like in Ms. Crass' experiment. [A couple of days ago, I had demonstrated an experiment on surface tension that showed the ability of water to stick together as it extended itself beyond the rim of a glass].
- Randy:** [Turns the cup upside down and tries it again]. I know why it works the other way. It traps the air and the air pushes it.
- Thomas:** It could be little plastic things with holes. It traps the air and moves it around, just like in Jumanji.

- Kids:** Yeah. Like when those pieces move on the board.
[Randy now piles two more cups inside the original cup and examines how they move as a singular unit on the wet surface].
- Myles:** The more cups there are the more weight it has and the faster it will go. The water makes it slip. There's heaviness. It traps the air.
- Katrianne:** When you have all the cups, it traps more air. The more air you trap, it moves faster.
- Meg:** The air is pushing it.
- Randy:** When you put the cup this way [right side up] it loses air. When you put the cup this way [upside down] it traps the air.
- Colin:** The air pushes the water and the water pushes the cup.

(I will refer to the particulars of this conversation at different times throughout the chapter).

The wonder of this moment has stayed with me forever. For the first time in my life I wasn't just "doing science"; I was "living" it. I remember the sounds of science—children's questions, inferences, observations, theories and giggles. All else around me was background sounds. I remember the faces of the children looking in awe, wondering with curiosity, intense with thought. I remember our actions—standing up, sitting down, lying our heads on the table, pulling friends near to each other so that they could see the magic from another perspective. I saw in this moment, not a reflection of science, but a truth and acknowledgement of my existence and the children's existence in the real world of science--all of this from a glass moving on a wet table during Center Time. I realize that this existence was at a level of

captivation and total engagement with what was transpiring but it was an existence nonetheless.



A family member who is a nuclear physicist has spoken to me about the “aha’s” of daily life that are physics based. As I question him about his love of science and what was the driving force that caused him to pursue physics so passionately, he speaks of them:

“Haven’t you ever wondered, Kim, when you are driving the car and you take a sharp turn, the lunch bag that you have in the back seat moves from one side of the seat to the other?”

“No, not really,” I respond.

“Well then, did you ever notice that when planes fly overhead, they are much louder in the winter than they are in the summer?”

“Can’t say I have,” I utter slowly trying to envision the scenes and listen to the sounds. I just haven’t noticed.

I have never known of the excitement of ideas related to the physical world until the moment the glass moved. Now, as I watch my two-year-old daughter flop to her tummy on the sidewalk in a matter of seconds and yell in absolute amazement, “What’s that? What’s that?” as she eyes her first ant crawling over the pavement, I wonder why has this curiosity about the world around me taken so long to develop? The innate ability to be curious about the world we live in is with us from birth. Somehow, I lost a sense of what it

was all about, until now, when Center Time allowed me the opportunity to reacquaint myself with the inner wonderings and playful curiosity of children.



This awakening completely caught me off guard. The children and I were already about half way through a thematic unit of study on “What it meant to be a Scientist?” We did all the usual things for organizing this study—bring in a real (female) scientist, have the children demonstrate experiments for one another, keep a scientific journal, read science books--but for the first time I used the avenue of Center Time to help explore and extend our thinking even further. Feeling more comfortable with the roles of friendship, community building and extending one’s thinking that Center Time has established in our classroom, I decided to see what value play would have in deepening our scientific understandings. Little did I know I was in for a big surprise.

As a class we turned our McDonald’s center into a scientific laboratory complete with tools, solutions and “lab coats.” I placed a variety of different scientific materials on the shelves including such things as batteries, magnifying glasses and magnets and I reopened the water table with a new assortment of objects for pushing, pulling and pouring water. I also set up a few “experiments” that the children had the option of participating in. (These “experiments” were intended to focus on the properties of solids, liquids and gases and came directly out of a “Hands on Science” book. The children had

to be involved with at least one experiment but they could sign up for all of them if they so desired.)

It was because of one of these experiments—"The Air Inside a Balloon Experiment"—that I began a different journey than the one I imagined. We chose not to continue with this planned experiment. Instead we followed "The Moving Glass" experience that was quite unexpected and quite unknown. Why is it that this particular experience stimulated a sense of inquiry in all of us? Why is it that for the first time in my twelve years of teaching science, I allowed the value of a simple unpredicted event to dominate over the predetermined science lesson? What was holding me back? Why had I always held the reins so tightly?

Determined to understand and discover more about the physical phenomena, I chose to use the days ahead to pay attention to those unplanned ordinary curiosities that arise from the children's play in Center Time. I wanted to take the time to see what the children were noticing and to listen more intently to what they were wondering about as they made use of the scientific equipment we had organized in the classroom. Therefore, I set forth to "live" science more deeply rather than just to "do" science.

In claiming a place for myself in this inquiry, I had to remember that learning begins with the wondering not with the "experiment". This did not mean, however, that children were no longer involved with science experiments during Center Time. Rather, it meant that my engagement during an experiment or experience followed the child's curiosity into a world of

questions, generalizations, and explanations that were child constructed. As I began to listen with new eyes and ears, I gained new perspectives into the ways in which children talk their way into understandings of the natural world.

I soon saw that children come to understand the natural world through their concrete experiences. They rarely reason in the abstract as adult scientists do (Osborne and Freyberg, 1985). Children use their life experiences to back their claims of truth and statements of scientific wisdom. Repeatedly, children explain their generalizations and scientific hypothesis based on the familiar world in which they live.

In the Moving Glass experience, the entire first half of the conversation was built on our familiar classroom experiences. The children and I relied on the prior experiences from Center Time to help think through possible understandings and construct connections. Every comment was spontaneous, supportive and individual. Aaron was involved in the Magnet Power experiment and drew comparisons in the movement of objects from this experience. He later explained how it felt "like a force field." "I have these little spacemen at home and they have magnets in their feet and if you hold them on their hips, it feels like something is in the middle and they force apart but if you hold them on their backs they force together." Anyone who has played with magnets knows exactly what he is trying to say. In many cases children's explanations are so strongly tactile that one can't help oneself from feeling exactly what they are trying to explain. Children's experiences and

language are constantly in the process of defining themselves as children find a way to make sense of the world in which they live.

Young Thomas also describes his scientific understandings based soundly on his experiences. His brilliant comparison of the movement of the glass to the movement of the plastic play pieces on the Jumanji game board is imaginative and exact. The children involved in this experience could immediately see the connection if they were exposed to the movie or book. It was an experiential way to connect the familiar world to an unfamiliar.

I was amazed at how children were similar to adult scientists in the way their thinking was based on theoretical understandings. Children will not disregard their particular viewpoint unless they somehow become greatly dissatisfied with its usefulness, coherence and intelligence (Osborne and Freyberg, 1985). The movement from a child's understanding of the world to a more scientific approach is a gradual change. In many cases, the acceptance and understanding of a new concept takes more than one effort, one experiment or one scientific experience as seen below: Madeline is playing at the water table with a variety of objects that push and pull water. As I sit beside her, she begins to talk with me about the eyedroppers she has placed in a clear plastic graduated cylinder in the water table.

Teacher: Hi! What are you up to?

Madeline: I found out that this [eyedropper] floats.

Teacher: Is there a way that you can sink it?

Madeline: No. There's too much water in it. But if you attach two together, the more weight they have they will go down together.

Teacher: Why don't you try that?
[Madeline ties up 2 eyedroppers with string and drops them into a cylinder container filled with water. It still floats so she tries to stuff the excess string down under the water too.]

Madeline: It still floats? [She seems surprised]. If 2 are tied up and it doesn't go down to the bottom then I'll put 3 in.
[She ties up 3 eyedroppers and drops them in the water. It sinks a bit but floats to the surface again.]

Madeline: It still floats so I'll put 4 in.
[Tries again without success.]

Teacher: Why doesn't the extra weight make it sink?

Madeline: Cause these [holding up the eyedroppers] are light things. They aren't heavy.

Teacher: What is something that could sink?
[Madeline puts a plastic yellow lid from a mustard squeeze jar in the water.]

Madeline: It floats. [She is disappointed].

Teacher: Can you find something else from the room? [Madeline goes to get a long piece of Lego. She places it in the water.]

Madeline: The Lego sinks.

I entered into this conversation with Madeline by following her lead into the floating and sinking dilemma. Wondering myself what would happen, I posed the question, "Is there a way to make the eyedropper sink?" By listening closely to Madeline, I was able to see that Madeline was a willing risk-taker and a determined experimenter. Madeline's viewpoint that objects float or sink according to their weight was so strong that she was determined

to make the eyedropper sink if it took her all day. She even tried to push the excess string down into the water thinking that this would coax the eyedroppers down. She was still surprised when they didn't sink. As obvious as it was to me that the eyedroppers would not sink on their own, Madeline held fast to her stance that the more eyedroppers she tied together, the more weight they would collectively carry thus causing them to sink. This one experience alone was not changing that perspective. It was solely putting it into question.

With this information in hand, what do I do? How can I help Madeline face the discrepancy between what she thought would happen and what actually transpired? How can I help Madeline reflect on her prior knowledge, which could affect her new understandings? Seeing how strongly she believes that what she thinks is true, I can understand how this will not be an easy task.

If I had more time, I would search through the science books for activities and experiments that would help draw Madeline's understandings about floatation into question and cause her to re-examine what she knows to be true (Elementary Science, April 1997, Volume 6. No.2, p.2). Through more hands on experiences that deal directly with the understandings and the misunderstandings that she clings to, I wish to help make visible the thinking that has brought her to this point of view. By working through enough problems and constructing new ideas she may be able to critically confront her current belief system. As valuable as an activity this is, I am in the position of

needing some immediate help. Therefore I rely on past experiences to help carry me through. I call upon the wisdom of the children in my class and "expert" friends, parents, and other contacts.

As shown in the block play, experiential learning is directly affected by the conversations and the social context in which children work. Therefore, I utilized Sharing Time directly after Center Time to open the doors for further communication, thinking, and further debate.

The children in my classroom value what others have to say. There is a powerful respect among the children for what each of them knows. The children feel very comfortable expressing their viewpoints: proven or unproven. The ability to raise a question without being judged or to offer an opinion openly and freely enables us as a class to tap into the collective wisdom of a greater body of collective knowledge. This larger community immediately shared alternative perspectives for not only Madeline to consider, but for everyone else who was listening and watching, including me.

Teacher: Madeline has been working at the water table and she would like to talk with you about what has happened there.

Madeline: I'm trying to make these [holding up the eyedroppers] sink. But they won't sink. I have tied them together and they still float. Look.
[Madeline puts the group of four eyedroppers into the water. They sink slightly then rise to the surface.]

John: I know why they float. Because they have air in them and sometimes the air keeps the water from going inside. So it floats.

Chad: Things that are hollow float. They have room to let the air in. Lego has no holes and no air, so it sinks.

- Colin:** Why don't we ask Bill Ni the Science Guy?
[Children laugh]
- Allyson:** You know how it sinks and comes back up? Well half of it is glass and half of its rubber. It sinks cause of the glass and floats because of the rubber.
- Randy:** Rubber floats and glass sinks.
- Allyson:** Maybe if you take off the rubber part it will sink. [Madeline proceeds to do so. The glass tubes sink to the bottom and the rubber tops float at the surface of the water in the cylinder.]

I marvel at the wisdom and thinking of my students. Their supportive words and gentleness of voices nurture this risk-taking. I thank the children for their caring ways and knowledgeable insights. The ways in which we talk to one another and respect each other's opinions enables dialogue and learning to happen.

The experience of many months of talking together and thinking together has affected the way we work as a community of learners within the room. The classroom energy and focus that derives from our social conversations offer possibilities and power to our group as a whole. When the children come together to talk about what *they* are learning and what problems *they* are encountering there is an energy that emerges from our group that pulls all of us together. Harriet Cuffaro (1995) talks about this sense of community and how she understands its development from a Deweyan perspective:

For a spirit of unity to exist within an ensemble we must add the factor of time—time to define purpose, to share activity, to experiment and to risk, to learn from success and failure, to open up each other's

possibilities. The unity created by an ensemble grows out of its history. The cohesion of the whole does not result from a magnetic core that attracts and adds to create itself but from the potential force of individual parts coming together to create their own magnetism from which a whole is then realized. (28)

This “spirit of unity” was definitely visible amongst the children. I was present to its power during block play and I could see the energy and commitment from the children during these science discussions once again.

I am in definite awe of the number of concepts these children have acquired and constructed through their life experiences. John and Chad know that air makes things more buoyant. Allyson and Randy focus on the types of materials that define the properties of objects and Madeline relies on her emerging knowledge that some heavy things sink and some light things float. It was because of our Sharing Time after Center Time that children had the opportunity to talk about what they knew and what they had learned. I never would have known that the children knew so much about floating and sinking concepts if I had not provided a time for them to talk.

In the midst of all the talking and all the learning, however, I still am one of the few class members that has not voiced an opinion or a theory. Part of my silence is due to the fact that I want to hear what my students have to say before I make a comment. Another side of the silence defines an uncertainty in my voice about what it is I am supposed to say. As pleased as I am with the ways I am trying to listen more closely to the children’s understandings and to accept the surprises we uncover in the physical/natural world, I know that I also have my hands firmly gripping science resource books. Knowing

what a science experiment was about gave me the information and the support to venture forth, but now I have so many concepts to think of at once that I am overwhelmed with the range of ideas confronting me. The more children explore and learn about a particular phenomenon the more there will be to learn. How does this affect me as a teacher? I am not a science expert! What activities could I provide for my students that would help them extend and re-examine their thinking? What knowledge could I personally offer them that would be of immediate value in supporting their efforts? Through the curiosity of a child, I have found a way into this world of science but at the same time I am confronted with the fear that kept me out of this world for so long—the feeling that I had to know everything. Alas...To know or not to know? That is my dilemma as a teacher.

I dared not enter or dream of existing in the world of science because I did not know enough science myself. It was a very uncomfortable and confusing place to be. I always viewed this sacred land as a place occupied by knowledgeable experts. My knowledge was dictated by what the science book and the curriculum had to say. It was here I felt safe knowing that a scientific concept or the words of an expert were the turn of a page away. Knowing what to say and how to respond scientifically to children was safer than not knowing what to say or to do next. Since I didn't have a knowledgeable base of understanding about why things happen I tended to avoid them and excuse my ignorance by mumbling, "I'm just not a science kind of gal". In doing so, I trusted only the books in front of me and

discouraged the children's authentic thinking and questioning. But why had I let that expert knowledge of what we were expected to learn from a particular experiment affect my engagement with the kids and why had I denied myself the opportunity to wonder with them? How did that knowledge trap me on the printed page? How did that knowledge make me lifeless in the classroom?

I re-examined an "experiment" that I had explored with a group of children at the beginning of our science unit before "The Moving Glass" experience. I replayed a taped conversation that took place during the experiment called "Ooblik". (Ooblik is a substance made from mixing cornstarch and water. It displays the properties of both a solid and a liquid. Each child was equipped with a tinfoil plate and a glob of Ooblik.) This time I was shocked not by what I saw but by what I heard myself say over and over again as I followed a tunnel-visioned point of view. The transcript of the conversation appears below. The children are playing with individual plates of Ooblik as they speak.

Julia: It's sucking your finger up.

Children: Yeah! Yeah it is.

Thomas: It feels like paste.

Children: Yeah it sucks it.

Teacher: So is it a liquid or a solid?

Children: Solid.

Teacher: So that means if I hit it, it won't splash up?

Children: Hit it!

Teacher: [I don't hit it but the children do].

Katrianne: It's pulling your finger.

Julia: Yeah. It's pulling your fingers.

Heather: It sucks your fingers in.

Katrianne: It's like a Sea Monster.

Julia: It's like a Sea Monster pulling my finger in.

Teacher: [Trying to push ahead with my agenda of trying to demonstrate the difference between a solid and a liquid]. Okay. I am going to take some of this [forming a solid ball of Ooblik in my hand] and put it in Heather's hand [passing the ball of Ooblik to Heather].

Julia: [Not noticing what I have just done] Ms. Crass, we notice something.

Thomas: Yeah, when you rub your fingers together it feels numb.

Heather: It feels soft.

Katrianne: Yeah and you don't feel anything.

Heather: It's like glue.

Katrianne: We're going to be stuck together.
[The children laugh].

Teacher: So it is a liquid. Or is it a solid?

Children: Solid.

It is obvious that I was most certainly trapped by the need to complete a science lesson on solids and liquids. I have never before analyzed what I sound like as a science teacher but it is completely different in contrast to what I sound like as an inquirer. In the conversation about the glass moving I entered into the experience with wondering eyes and words of engagement searching for connections and supporting the thinking voices around me. In the Ooblik experiment I only chose to engage in the conversation with my

agenda in mind and that agenda was formed from a “hands-on” science experiment book that supposedly represented greater scientific knowledge than we had. In following an outside agenda so rigidly and safely, I reduced my intellectual involvement and hence my purpose and action to mere mechanical levels (Osborne and Freyberg, 1985). I missed the life within the lesson and the wondering within the words. I didn’t notice that the Ooblik felt like paste. I didn’t imagine what it would be like to be pulled in by a Sea Monster. I didn’t feel the numbness of my fingers. I didn’t laugh. I only cared if the Ooblik was a solid or a liquid. Where is the life in that if we don’t take the time to play and wonder first?

I began this research study with the need to rediscover life in the classroom by exploring children’s play. The fear of not knowing what lay ahead for me as a teacher held me to programmed curriculums and the outside ‘expert’ agenda and advice. It did not cause me to learn and it certainly restricted life from flourishing within the room. That same fear has prevented me from existing in the world of science for much longer—nearly all my life. It is very obvious to me how fear does not allow me to be present in the world in which we live. It does not allow me to grow or to help define a personal vision for myself of who I am, what I think and what I believe. Fear only allowed me “to know” what it wanted. It is in the “not knowing” that I find what I need and much more.

Through the presence of children’s play, I have found a way to exist in the physical/natural world and to experience first hand the surprises of

curiosity and child-like wonder. It is in play that discovery naturally happens. Inquiries are sparked by play. To deny the play denies the wondering. To deny the wondering, denies the learning.

As I reflect now on the glass moving experience, the scientific life that exists within those few minutes of time is far greater and deeper than the conversation in "Ooblik" or any other "experiment" that I ever remember doing with children. Through play, I somehow managed to relax, to forgive myself for "not knowing" everything and to genuinely be interested in what was happening.

"Until I had my own questions to ask, my own set of events to watch and my own ways of combining all of these with teaching, I did not learn very much at all"—you always need to be in charge of the wondering (Paley, 1981, pg. 16).

And now as I step forth into a new place as a teacher, I can begin to welcome the sounds of inquiry bubbling inside of me. I am more willing to accept the children's ideas and to see the value in them as I begin to find value in what I have to say. As I look at the theories that the children willingly profess—the water pushes the cup, the more air you have the faster the cup moves, the air pushes the cup, it connects to surface tension—they no longer scare me with possibilities but rather support us in a community quest to learn more. My investment in wanting to know what they mean, is different than having to know this information for somebody else's purposes other than my own. I am at a point in my teaching career where I am willing to move ahead into the bigger world of learning about the physical /natural world and of supporting my

students in doing the same. "Children cannot simply 'know' that something is so; they must demonstrate it. The education of children in science must also provide for this kind of experience, not simply to confirm the 'right' answer, but to investigate the nature of things and arrive at explanations that are satisfying to children and that make sense to them" (National Science Resource Center, 1988). Knowledge is an active personal repertoire of thoughts, actions, possibilities, questions and attitudes not just a memorized statement of someone else's knowing (Duckworth, 1985). The ability of children to reach forth, think through and verbalize their own explorations and experimentations to explain their thinking, are the lifelines of science learning.

It is due to the 'not knowing' that I found a place for myself as inquirer in the physical/natural world. If 'not knowing' is the driving force behind scientific inquiry, then do we not need to emphasize and celebrate that side of science in the same way we do the 'knowing' of it? If we want children to have any kind of continued interest in the greater world of science throughout their years, then do we not need to nurture these wondering beginnings with celebration, interest, meaning and life? Would this not help children continue to be present, to notice and to be curious about the everyday moments that encompass our lives without feeling alienated from their knowledge or uninterested in their appearances? Then maybe, children will be alive to the sounds of planes flying overhead and notice that lunch bags do move when you turn a corner as you are driving in a car and

hopefully they will not have to wait many, many years for a glass to move before they believe they can live in the world of science.

CONCLUSIONS:

“More” Than the “Big Stuff”

My personal exploration of classroom life and learning through Center Time came as a result of the tensions I was feeling within the profession. I now realize that as long as I teach, I will always be plagued with questions, confronted with controversy and burdened by bureaucratic policies that try to control the learning of my students and the power of my professional voice. I have been in this profession long enough to know that teaching is hard work, and more often than not, it takes a lot of effort to do it well.

It is easy to be lured into a popular way of thinking about teaching that is authority driven and “socially sanctioned” because it saves you the effort of reexamining and reinterpreting the meaning of your own learning and the construction of your own knowledge. (Mayher, 1990) But are we here to do that as professionals in the teaching world or as human beings in life—just stay on the surface? Take the easy road? Be told how and what to teach? Walk through life without really living it and being present to its power?

I have read in Rachel Naomi Remen’s book (1996), that each challenge we undertake and each difficulty we face helps move us forward by defining our true self—who we are, what we stand for and how we demonstrate that—and our departure from this life may be our final and most integrating of all our life’s experiences. While, I’m not sure if at the end of my teaching career I will have the greatest of understandings revealed, I do know that after everything I have chanced to engage in or have forced myself to deal with, I am a better

teacher for not having just stayed on the surface or watched from the sidelines.

I felt very much alone in my travels through my thesis. In a way it shouldn't surprise me. At a time when most other teachers were dealing with the tensions surrounding standardized testing, grade level performances, mandated curricular outcomes, I wanted to talk more about *play*. It was almost as if we were living and teaching in two different worlds. It was only through the writing of this thesis that I realized just how important a role community support and conversations play in affirming one's knowledge, strengthening one's understandings, and giving power to one's voice. I now appreciate that I really did miss out on something very empowering by not having a collaborative group of teachers to think with and talk with. This was so evident in my own work with children and my conversations with "expert" friends, parents and other contacts. I only now realize how much greater my understandings could have been and how much more powerful my voice could have been if I had been a part of a collaborative thought collective where a "spirit of unity" was created, empowering us all.

Since my initial attempts at writing this thesis five years ago, a lot of things have changed. A new government has formed that appears to listen to the voices of teachers with seemingly more understanding. It has kept its promise of re-thinking and in one case eliminating standards testing at certain grade levels. The political tensions of teaching have somewhat eased for me; select parent groups and certain individuals who vocally advocated for a more

traditional and controlled approach to education are no longer as vocal. I seem to be more relaxed about teaching again, and more concerned about the day-to-day surprises of classroom life.

Since that time I have also moved schools, built relationships with a few "like-minded" thinkers at my new school and formed a job-share partnership with an old friend and colleague whose strength in understanding children's thinking and learning and whose ability to articulately communicate that knowledge to parents, administrators and teachers and others has rekindled my teaching spirit and given me more power to talk to others about what I know. I no longer feel alone with my questions and quests to know more. I have become part of a community of learners that has a passion for teaching and an openness for embracing questions that cause me to think more, understand more and learn more.

From a writing perspective, the elements of time and the circumstances of life have affected my writing and penetrated deeply into its format and focus, as I never imagined they could. Through the birth of two children, the death of a beloved father, and the spiritual reading that I have done, I have connected living well with teaching well. I have found a pathway through the writing of my thesis that did not exist five year ago. Suddenly my focus was not only on preserving teaching in the classroom, it was also about preserving life. In the midst of this life was children's thinking and learning through play.

Five years ago I had a great deal of difficulty picking up a book on play and reading it with much desire. Even though I had chosen to look at play as

the topic of my thesis, my interest in reading about it and my willingness to even want to play was minimal. It has only come through the act of playing, being curious about the world we live in, and through some basic understandings about what children are doing as they play, that my desire to read books on play has increased. As I look at these books with new eyes, they suddenly make sense from an organizational and content point of view. It was as if I had to understand more about the practical and real world of play before the theoretical readings of others could resonate with me and become more meaningful. It has been all of these things combined—learning more about play, becoming a real “player” in the classroom, my life’s experiences, changes over time, and the reading and writing of late—that helped me to understand with greater depth the “Big Stuff” in teaching that has come through my exploration of Center Time.

Vivian Paley (1981), who has spent years working with and studying young children as players in the classroom, describes the child’s world of play in her book *The Boy Who Would be Helicopter*. She states,

We are taught to say that play is the work of children. But watching and listening to them, I saw that play was nothing less than truth and life. (17).

The ability to engage in the act of playing was such a formidable task for me. I did not understand its value. I did not have a personal need to play and I certainly did not want to play. Despite my evasive efforts to avoid engaging in play, I knew that there was something extremely special in the art of playing that made the children and the classroom come to life. It was only

when I had made the effort to watch, wait, write, think, talk and wonder for many days and months, that I was ready. I had found a connection and that connection gave me the power to play.

By becoming a real player in Center Time, I finally understood Paley's words. It was the "truth and life" I found in play that was able to save my spirit as a teacher and bring life back into the classroom.

As I began this research study, I thought of play as a 'separate entity'—something that sat outside of the curriculum we had created within the classroom. It wasn't until I picked up my very first block and questioned its significance in ramp construction, that I saw play as an underlying basis for building curriculum and constructing knowledge. As Kenneth Goodman (1991) explains, "real curriculum is what happens to each learner." (K. Goodman, A Declaration of Professional Conscience for Teachers.) This was an extremely important revelation for me as a teacher because it eased my anxieties about how I could talk to parents about the value of play within the classroom and its connections to the curriculum of each child as well as the provincial curriculum as a whole. I watched as children pondered over peer relationships, struggled with how to speak about what they were learning, constructed knowledge about buoyancy, balance, floatation, speed, velocity, force, angles and inclines, just to name a few ideas. In current times and within the community in which I teach, I needed to be able to acknowledge how the children's ability to create meaningful knowledge for themselves and to share their thinking with others, connected to the areas of Math, Science,

Language Arts and Social Studies. I needed to do this in order to justify Center Time as a valuable component of our learning environment.

Because play is a process rather than a subject, it is really within subjects that one should look at play as a means of teaching and learning rather than as a separate entity . . . Play must pervade how teachers present potential learning activities, not sit as an uncomfortable and somewhat suspect activity in itself. (Moyles, 1985, 86)

I also realized just how important it was for children to have a place and a time to explore these emerging concepts at a concrete and experiential level and for me to have a place and a time to listen to them explain their thinking. How else do we capitalize on children's personal investigative inquiries and the questions that give rise to higher levels of cognition and greater understandings if we don't let their play develop? Whether we choose to expose children to concepts from our explorations in the Math or Science areas or whether we use the emerging concepts they are thinking about in play, we need to allow children the opportunity to further their understandings by playing with these concepts in order to find a connection for themselves. By finding a connection, children feel invested in the thinking, the wondering, the experimenting, and the questioning of play. (Duckworth, 1979.) Play contains the questions that lead children to higher-level thinking and thought construction. (Paley, 1981.) Once we understand their questions we can help them move to greater understandings. (Paley, 1981.)

As a scientific inquirer, I was definitely awakened to the wonders of science through play. After many years of purposely distancing myself from

the scientific community, I found a way to connect the curiosity of my own questions to my growing sense of myself as a real scientific inquirer. By opening myself up to the many fascinating wonders of the scientific world, by establishing a sense of self worth in my efforts, and by giving myself permission to question and hypothesize even if I didn't know all the answers, I found a way to be included in this science world. This awakening led me, as a teacher, to question the traditional hierarchical relationship between expert and novice.

My presence as a beginning scientist placed me on the same level of curious inquisitiveness as that of my students. I marveled at the ingenious ways they thought their way into scientific concepts and understandings. And, for the first time in my life, I felt alive to the "what if" questions they were asking. On the other hand, I both questioned the place of and was in awe of the more experienced scientific expert who without a blink of an eye could explain or give an insight into a question that would have taken me forever to answer or even understand. Such experience was invaluable, but could such an expert be as appreciative of the intensity of wonder and newness of these ideas in the same way that I could? Could an expert celebrate and nurture these beginning scientific steps, so critical to further engagement with the scientific community?

I have come to understand that there is value in both wide-eyed wondering and expert knowledge.

I had placed the scientific expert in a separate world of knowledge and wisdom from the world in which I lived. It wasn't until I felt comfortable with my own beginning scientific steps, that I had the confidence and desire to learn how experts would play a valuable role in our scientific community. It was only then that I began to initiate conversations about my own scientific wonderings with members of this elite group (something I had never dared to before). Now, they were "needed" members of our classroom community, together with the children and myself.

We all had roles to play in establishing a constructive, thought collective in our room. It was important that individuals not feel overwhelmed and that conversations not be shut down. Every individual within our room, including myself, possessed knowledge and experiences that were vital to our collective knowledge. As we shared that knowledge together, our understandings grew and as we needed further insights and explanations, we expanded our thought collective to include the experts. On an equal playing field, we worked side by side, in the spirit of inquiry and in the desire to know more.

The establishment of a respectful community for learning was a vital component of our classroom as well. I believe that one of the greatest possessions that a child has is the ability to inquire and the right to wonder. One of the greatest gifts you can give a child is to invite them to participate in the creation of an environment which nurtures inquiry and curiosity and which celebrates risk-taking in a safe, caring and supportive way. In order to learn and grow, one must feel that one's words and ideas are given validation and

respect and that it is okay to make mistakes and “not know” everything. As a community of learners, we supported the voices of our classmates through our words and actions.

The evidence of social learning, as a valuable part of knowledge construction, was central to all aspects of children’s play. Quite simply, if you shared with a friend what you saw, heard or knew, you helped your friend to see, hear or know more too. It was in the collaborative interaction of children with their physical and social worlds that their thinking was clarified, challenged and charged with new insights, perceptions and possibilities. (Jones and Reynolds, 1992) Language is the link between experience and learning. Language defines how we think and it enables us to have a glimpse of someone else’s thinking as well. Higher levels of intellectual development are reached by using language in a collaborative way to discuss and solve problems with others. (Vygotsky, 1978) The children in the classroom were constantly using language and experience as ways of defining and redefining their understandings of the world.

The roles that language, experience and community played in the cognitive growth and development of every member of our class, was in evidence over and over again. These relationships are best understood in the words of two children who describe how learning happens when you are playing in the blocks. Colin writes:

I learned that if all of us work together, it works better because some people go to the blocks and some people don’t.

Chad further clarifies this idea:

Some people don't go there and some people do. And some people have a little more experience. They will help the kids who don't have as much experience. The people that don't go there sometimes need some help.

Whether this help comes from experience, dialogue or a supportive learning community, the children knew what was the "Big Stuff" involved in learning through play.

Vivian Paley (1981) also speaks strongly to the notion that

The classroom that does not create its own legends has not traveled beneath the surface to where the living takes place. (5)

I strongly believe that the children themselves best voice the legends we created through Center Time. Here are their words about the "Big Stuff" in Center Time as I speak to them, a few years after our year together:

I remember . . . Big circle talks, the importance of teamwork and that it is much more fun if you have more than one set of hands, learning how to discuss and solve problems that came while (you) were building with blocks, learning how to explain what (you) were doing and why, sharing time, building places, towers and ramps and playing with (your) friends.

Four years have passed since we explored and shared our thinking together through Center Time and still the children remembered the "Big Stuff."

The words of Colin's poem wander through my mind once more.

THE BIG STUFF

I have a pool and more.

I have a dog and more.

I have toys and way more.

I have my teacher and she helps me learn.

I have lots of stuff and more.

I have my bathroom and more.

I have my family.

Colin has defined the "Big Stuff" in life for him in the same way as I have come to understand the "Big Stuff" in teaching, but it is in the search for the "more" that breathes life into his poem as it does for me in the classroom. He reminds me that there is, "more, more" and way "more" to life. Indeed there must be "more, more" and way "more" to teaching if one is willing to reach below the surface. It is in the need to be present and alive to the wonders of life and learning in the classroom that I will always strive to be present to the "more" of teaching in every new school year.

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