

ART AS A REPRESENTATION OF CHILDREN'S LEARNING EXPERIENCES:
A REGGIO EMILIA INSPIRED STUDY

by

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ABSTRACT

The purpose of this study was to explore how children construct their knowledge using art as a learning and knowledge representation tool in the course of carrying out a project. In particular, this study was conducted in a Reggio inspired Canadian child care classroom in order to examine how the fundamental principles of the Reggio Emilia are implemented within a Canadian context. Qualitative case study methodology was employed to investigate children's knowledge-building processes and their knowledge representation. The study focused on the in-depth study of six children's activities during a '*Shades of Pink*' project. For this study, the process of children's knowledge-building was documented. Through documenting this project, *Shades of Pink*, children's own ideas and theories were discovered; children's discussions were traced; and children's multiple forms of representations were presented.

This case study provides insight into the way the children construct knowledge. The project was first initiated because of children's interest in mixing paints. In the collaboration with their teacher, the children developed the project into a meaningful context for learning. The children constructed hypotheses, tested their theories, and exchanged thoughts with their peers and the teacher in order to build knowledge. Through this process, the children constructed at least two different kinds of knowledge (a) social understanding/relationships, and (b) content knowledge. The children's knowledge building processes are evident in the pedagogical documentation that was kept, including children's conversations, teacher's comments, pictures of children's work, and pictures of children working. Pedagogical documentation played an important role in children's learning in terms of (a) promoting parents' involvement in children's learning, (b) enhancing children's learning, (c) helping the teacher plan and evaluate children and (d) making children's learning visible.

TABLE OF CONTENTS

Abstract.....	ii
Table of Contents.....	iii
List of Figures.....	viii
Acknowledgements.....	xii
CHAPTER 1: Introduction.....	1
1.1. Purpose of the Study.....	1
1.2. Statement of the Problem.....	2
1.3. Research Question	3
1.4. Assumptions.....	4
1.4.1. The Image of the Child.....	4
1.4.2. The Teachers as partners.....	5
1.4.3. The emergent curriculum.....	6
1.4.4. Negotiated Learning.....	6
1.4.5. Projects.....	8
1.4.6. Atelierista and Atelier.....	11
1.5. Organization of the Study.....	13
CHAPTER 2: Literature Review.....	14
Introduction.....	14
2.1. The Image of the Child.....	15
2.1.1. The Child as Knowledge, Identity and Culture Reproducer.....	15
2.1.2. The Child as an Innocent, in the Golden Age of Life.....	16
2.1.3. The Young Child as Nature... or as the Scientific Child of Biological Stages...16	
2.1.4. The Child as a Co-constructor of Knowledge, Identity and Culture.....	17
2.2. The child-teacher relationship.....	19
2.3. The Relationships between children.....	20

2.3.1. Learning Groups.....	21
2.4. Art in Reggio Emilia.....	23
2.4.1. Learning through One Hundred Languages.....	24
2.4.2. Art Media to Deepen Children’s learning.....	25
2.5. The Development of Symbolic Thought and Representational Abilities.....	28
2.5.1. Planning and Reflection in High/Scope.....	30
2.5.2. Play Planning in Tools of the Mind.....	31
2.5.3. Representation in project work at Reggio Emilia.....	32
2.6. Pedagogy of listening.....	33
2.7. Pedagogical documentation.....	36
2.8. Project rather than Curriculum.....	46
2.9. Summary.....	47
CHAPTER 3: Methodology.....	50
Introduction.....	50
3.1. Research Design.....	51
3.2. Procedure.....	53
3.3. Context.....	53
3.4. Research Participants.....	54
3.5. The Role of the Researcher.....	54
3.6. Data Collection.....	55
3.6.1. Field notes.....	55
3.6.2. Observations.....	55
3.6.3. Documentation.....	56
3.7. Unfolding of the Project.....	57
3.8. Data Analysis.....	59
3.9. Trustworthiness.....	61
3.10. Ethics.....	61
3.10.1. Providing Exact Information about the Research.....	61

3.10.2. Maintaining Confidentiality.....	62
3.10.3. Providing Freedom from Harm.....	62
3.11. Summary.....	62
CHAPTER 4: Result.....	64
Introduction.....	64
The Unfolding of the Project, Shades of Pink.....	65
4.1. The initiating Context.....	65
4.2. The Beginning.....	65
4.3. The Need for Stimulation.....	66
4.3.1. Exploring Red.....	66
4.3.2. Looking for Red.....	68
4.3.3. Painting the Red.....	68
4.4. Episode 1. Shades of Pink... ..	69
4.4.1. Cycle One: The Field Experience... ..	69
4.4.2. Cycle Two: Creating Shades of Pink... ..	70
4.4.3. Cycle Three: Impatiens... ..	72
4.4.4. Cycle Four: Experimenting Together.	76
4.4.5. Cycle Five: Exploring the Sun and the Wind Theory.	77
4.4.6. Cycle Six: Wondering and Making Meaning Together.....	80
4.5. Episode 2. Discovering Artists through Shades-Hand to Hand... ..	82
4.5.1. Cycle one: Visits to the Library.....	82
4.5.2. Cycle Two: Attempting to Copy Favorite Drawings of Artists... ..	82
4.5.3. Cycle Three: Using Monet to Understand the Effect of Light.....	83
4.5.4. Cycle Four: Talking about their favorite paintings.....	86
4.5.5. Cycle Five: Conflict of thoughts on Monet’s Painting.....	87
4.5.6. Cycle Six: Testing their hypothesis.....	88
4.5.7. Cycle Seven: Monet Collaborative Drawing.....	90
4.5.8. Cycle Eight: Revisiting the Documentation.....	93

4.6. Episode 3. Arts and Artist.....	94
4.6.1. Cycle One: Visit to the Vancouver Art Gallery.....	94
4.6.2. Cycle Two: Going Back to Monet.....	97
4.6.3. Cycle Three: Visit to the Art Studio.....	98
4.7. Episode 4. Exploring Poppies.....	99
4.7.1. Cycle One: Examining Poppies.....	99
4.7.2. Cycle Two: Drawing and Painting Poppies.....	100
4.7.3. Cycle Three: Visit from an Artist.....	104
4.7.4. Cycle Four: The Second Drawing Representation of Monet Painting.....	106
4.7.5. Cycle Five: Collaborative Painting of Monet’s painting.....	107
4.7.6. Cycle Six: Representing Poppies with Different Art Media.....	110
Commentary.....	112
4.8. Social Understandings/Relationships.....	113
4.8.1. Accepting differences through listening.....	113
4.8.2. Collaborative Learning within the Group.....	114
4.9. Content Knowledge: through the Interactions with Adults and Art materials, and Experimentations.....	117
4.9.1. Meaning Making.....	117
4.9.2. Teacher as a Co-constructor in Children’s Learning.....	118
4.9.3. Learning from Artists.....	120
4.9.4. Promoting Learning through art resources.....	122
4.9.5. Interaction with Paints and Brushes.....	123
4.9.6. Learning from Interactions with Artists.....	124
4.9.7. Inspiration from Art Gallery and Art Studio.....	125
4.9.8. Multiple Ways of Representing Poppies.....	127
4.10. The Role of the Pedagogical Documentation.....	129
4.10.1. Parents’ Involvement in Documentation.....	129
4.10.2. Enhancing Children’s learning though Documentation.....	130
4.10.3. Teacher Planning and Evaluation with Children through Documentation.....	132

4.10.4. Making Children’s Learning Visible.....	133
Concluding Phase.....	134
4.11. Learning in the Learning Group.....	134
4.12. Representing thoughts in diverse ways.....	135
4.13. The Necessity for Documentation.....	135
Recommendations for Future Study.....	137
References.....	139
Appendix A: Copy of the UBC Research Ethics Board’s Certificates of Approval.....	146
Appendix B: Initial Letter to the Contact to the Parents and Guardians	147
Appendix C: Consent Forms.....	148

LIST OF FIGURES

Figure 4.1: The children explore fat lines and thin lines, different sizes of dots and footprints with yellow and black paints, and brushes.....	66
Figure 4.2: The children are exploring various red items by first noticing, then touching them.....	67
Figure 4.3: The children are looking for the color red around the childcare center.....	68
Figure 4.4: The children are creating shades of red.....	69
Figures 4.5: The children are creating pink shades to match the flower.....	71
Figure 4.6: The names of pink shades and color, the children created: lightest migest, pinkish darkest, and pinkish red.....	72
Figure 4.7: The children created various shades of pink to make the right shades for Impatiens.....	73
Figure 4.8: The children are painting flowers using only with pink paints.....	74
Figure 4.9: The children are testing their theories: adding white will make it lighter VS adding red will make it lighter.....	75
Figure 4.10: The children are painting in an observation room to find out how the sun and wind effects shades of color.....	78
Figure 4.11: The children are painting together on a larger piece of paper to test their theories.	79
Figure 4.12: The children are carefully observing drawings of artists from the books and are trying to mimic them.	83
Figure 4.13: The children are listening to Michael's explanation of Monet's paintings.....	84

Figure 4.14: The children are painting their trees and filling them up with white dots.....	85
Figure 4.15: The children are filling up the trees with red dots after finishing the white color...	86
Figure 4.16: The children are discussing the details of the Monet's painting, Poppy field at Argenteuil, and sharing their ideas.....	88
Figure 4.17: The children are testing their hypothesis: the children are able to see my eyes and draw them from a short distance.....	89
Figure 4.18: The children are testing the children's hypothesis: They are trying to find out if they can still see my eyes from a long distance.....	90
Figure 4.19: The children are trying to figure out how they are going to assign each person's role in a collaborative drawing.....	91
Figure 4.20: The children are collaboratively drawing Monet's painting, Poppy field at Argenteuil.....	92
Figure 4.21: The children's final drawing of Poppy field at Argenteuil.....	93
Figure 4.22: The children inspired by Emily Carr's sketches are drawing totem poles.....	95
Figure 4.23: A picture of Vancouver art gallery and Silvia's drawing of art gallery.....	96
Figure 4.24: The children are touring the Vancouver Art Gallery:.....	96
Figure 4.25: During the art gallery visit, a flower painting got Silvia's attention and she is drawing the painting.....	97
Figure 4.26: The children are visiting an art studio on campus: they are observing various art materials and students at work.....	99
Figure 4.27: The children are observing and exploring a silk poppy.....	100
Figure 4.28: The children are observing and drawing poppies with pencils.....	101

Figure 4.29: Silvia is painting a poppy on an easel.....	101
Figure 4.30: The first representations of poppies with a pencil.....	103
Figure 4.31: The second representations of poppies with charcoal.....	103
Figure 4.32: The third representations of poppies with paints.....	104
Figures 4.33: Olin and Silvia are listening to an artist, Stephen. He is explaining how he describes things are far away and close.....	105
Figure 4.34: Olin is drawing a painting of Monet, Poppy field at Argenteuil, in a hallway where the picture of Monet's painting is being displayed.....	106
Figure 4.35: Silvia is adding more poppies to Olin's drawing.....	107
Figure 4.36: Olin and Silvia are painting their drawing with watercolor wash.....	108
Figure 4.37: The children are painting the Monet's painting with watercolor.....	109
Figure 4.38: Children's final collaborative painting of Monet's painting.....	110
Figure 4.39: The children drew poppies with pencils and they redrew them with pen strokes over the pencil lines and then, they painted them.....	111
Figure 4.40: The children drew and colored the poppies with colored pencils.....	111
Figure 4.41: The children drew the shapes of poppies with crayon and painted with watercolor.....	112
Figure 4.41.1: Drawing poppies with pencil before observing a silk poppy.....	128
Figure 4.41.2: Drawing poppies with pencil after observing a silk poppy.....	128
Figure 4.41.3: Drawing poppies with a charcoal.....	128
Figure 4.41.4: Painting a poppy with water color.....	128
Figure 4.42.1: Drawing a poppy with a pencil and painting it with water color.....	129
Figure 4.42.2: Drawing a poppy with a pencil, redrawing with pen strokes on the top of the pencil traces, and painting it with water color.....	129

Figure 4.42.3: Drawing a poppy with crayons and painting it with watercolor.....129

Figure 4.43: Documentation panels in a hallway.....134

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CHAPTER 1

Introduction

The importance of early learning has been increasingly acknowledged in its own right. According to Dahlberg, Moss and Pence (1999), as early childhood gets put on the agenda for both private and public policy issues, more and more voices can be heard discussing early childhood education and care in various settings. However, despite the growing volume and diversity of these voices, most seem to speak the same language of early childhood: promoting healthy development; ensuring readiness to learn and readiness for school; enhancing individual performance; providing developmentally appropriate activities and desirable outcomes; ensuring cost effectiveness; and the concept of standards in programs. Most pervasive of all in early childhood discussion is the language in which quality is understood in terms of academic performance.

However, the Reggio Emilia infant-toddler centers and preschools in Northern Italy inspired by Loris Malaguzzi have suggested a different perspective on young children's learning. They have gained worldwide recognition as one of the best learning institutes for young children due to their fundamental principles and practices (Hincele, 1991). Dahlberg et al.,(1999) state that Reggio educators search for underlying values, acknowledge the probability of multiple perspectives and meanings, honor diversity and uncertainty, and open up possibilities for democratic participation, dialogue and further questions rather than focus on techniques that will further standardization, predictability and control.

1.1. Purpose of the Study

When I reflect on the Canadian context, which is very diverse, multicultural and

multifaceted, I believe that we need to consider multiple perspectives and positions in our early childhood education programs. This does not mean that we should change all that we have; rather we need to look at other possibilities. Dahlberg et al., (1999) made an important point in this regard:

We are not arguing, however, for the replacement of one dominating language with another. That would be to use the 'language of necessity' (Bauman, 1991) which manifests itself when we say that 'that is how things are' or 'this is how things should be' or 'this is what must be done'. The language of necessity also manifests itself by what is not said-when the possibility of alternative positions, understandings and approaches is not acknowledged, and when the choice of a particular position, understanding or approach is not presented and explained as a choice that has been made but rather is assumed and taken for granted as the only one available (p. 2).

From this perspective, the Reggio Emilia approach can be seen as an alternative possibility in the world we live in today, which sheds light on how we might become more aware of children and their learning.

1.2. Statement of the Problem

I was first attracted to the Reggio Emilia approach during my first year in university when my professor introduced the book, *The Hundred Languages of Children*, to the class. What interested me more was the fact that the Reggio Emilia approach employs arts as scaffolding for learning. This resonates with my teaching beliefs that teachers should facilitate children's learning with various approaches. I was specifically interested in children's use of "graphic languages" representing their learning experiences. After graduating from university, I implemented the Reggio Emilia approach in my kindergarten classroom. I was able to observe how much children loved to work on projects, develop their theories, and expand their

knowledge through the processes around projects. Through this experience I ran into some challenges implementing the Reggio Emilia approach in my classroom because there was not much information on how to implement this approach in various cultural environments. Currently, literature has provided educators with the philosophy, main principles, and practices of Reggio Emilia (Edwards, et al. 1998; Gandini, 1998; Hendricks, 1997; Malaguzzi, 1998). Although there are some publications of participants' reflections on visits to Reggio Emilia, as well as some examples based on the Italian context, few articles and books exist about the implementation of the approach in other contexts (Katz, 1996). According to Rinaldi (2005), Reggio doesn't provide a recipe that other people should copy or follow; rather Reggio is a metaphor and symbolic place for a dialogue. Rinaldi emphasizes that the only thing they can share with others is their values and the reasons why and the ways in which they try to challenge themselves. For example, it is a value to choose among many ways to conceptualize knowledge, or to select a particular way to discuss about learning. It is a value because you choose and then you take responsibility

Therefore, research on the implementation of the Reggio Emilia approach in various contexts based on such values will provide practical ideas to early childhood educators who want to apply this approach to their own practices. In my proposed study, I investigated one Reggio inspired Canadian child care center. I examined how children built their knowledge using art as a learning and knowledge representation tool.

1.3. Research Questions

The following questions guided this study:

- (1) How do children construct knowledge in a school that is inspired by the Reggio Emilia approach?
- (2) How do children interact with media (art tools and materials) and how do these interactions affect their learning?
- (3) What kinds of media (e.g., words, drawings, paintings, sculptures, etc.) do children employ to represent their ideas in the project?

1.4. Assumptions

This study is based on the following assumptions based on the fundamental principles of the Reggio Emilia approach. The central tenets of the Reggio Approach that have attracted early childhood educators and myself are: (a) the image of the child (b) teachers as partners (c) the emergent curriculum (d) projects, and (e) atelierista and atelier (Gandini, Hill, Cadwell, & Schwall, 2005, Edwards, Gandini, & Forman, 1998; Hendrick, 1997; Stegelin, 2001).

1.4.1. The Image of the Child. The child is considered beautiful, powerful, competent, creative, curious, and full of potential and ambitious desires (Malaguzzi, 1993; Rinaldi, 1993). In Reggio Emilia, the child's nature, thoughts, and work are taken seriously and with respect; the child is understood as having an innate desire to discover, learn, and make meaning of the world. Loris Malaguzzi (1998) viewed children as natural researchers because of their curiosity, ability to ask questions, willingness to experiment, and desire to take time to discover on their own. Within the Reggio Emilia approach, children are natural researchers as they question what they see, hypothesize solutions, predict outcomes, experiment, and reflect on their discoveries (Staley, 1998). The role of the child as researcher takes place within the context of projects.

While engaging in a project, children have the opportunity to explore, observe, question, discuss, hypothesize, represent, and then proceed to revisit their initial observations and hypotheses in order to further refine and make clear their understandings (Forman, 1996). The Reggio Emilia child is viewed as a social being. Malaguzzi (1998) emphasized children's social construction of knowledge through their relationships within the context of collaboration, dialogue, conflict, negotiation, and cooperation with peers and adults. Children's communication through language is considered critical to conveying meaning to knowledge within the Reggio Emilia approach.

1.4.2. The Teachers as partners. In Reggio Emilia, teachers consider themselves as a partner in the process of children's learning (Gandini, 1997). The role of the teachers as partners and co-learners is presented when children and teachers engage in collaborative learning during a project. Reciprocal interactions between children and the teachers in the course of constructing knowledge are valued and encouraged. "Reggio's overarching educational principle of reciprocity appears again and again as teacher and learner together guide the project" (Rankin, 1992, p. 30). Cooperative learning and the commitment to a cordial and collegial classroom environment are hallmarks of the Reggio Emilia approach (Edwards, 1998; Forman & Fyfe, 1998;; Nimmo, 1998). According to Carolyn Edwards (1993), teachers provoke children through inspired facilitation and stimulation of children's dialogue, co-action, and co-construction of knowledge. Children need helpful adults to assist them as they pose questions, search for answers, and draw conclusions. Therefore, teachers should be physically available and accessible so that children can stimulate thought and discussion, patience and tolerance of struggling ideas and exploration (Edwards, 1998). Through listening to children, following up with the gathering and analysis of data, the teacher is able to find out critical knowledge

regarding the children's development and learning, as well as their interests and curiosities, thus the teacher is enabled to produce strategies that support children's work or can be utilized by them (Malguzzi, 1993).

1.4.3. The emergent curriculum. The Reggio Curriculum is not child centered or teacher directed; it is "child originated" and "teacher framed" (Forman and Fyfe, 1998). A perspective of curriculum as emergent is one of the important characteristics of the Reggio Emilia approach. The process of emergent curriculum planning begins as teachers observe and interact with children. Reggio teachers classify planning as a method of work in which they lay out general educational objectives, but do not specify the goals for each activity in advance (Rinaldi, 1998). Instead, they set up goals and make hypotheses about what direction the activities might take in order to finalize proper planning. These objectives can be flexible and modified to the needs and interests of the children.

The goals of planning without predetermined objectives are to allow the children to make authentic choices and to construct knowledge. Gandini and Golhaber (2001) emphasize that having respect for children does not mean that the teachers should blindly follow all children's ideas, but they should decide which ideas should be pursued and how they as teachers might support children. In fact, projects are initiated not only by children's play, comments, and questions, but also by other sources: teachers' interests and passions; objects, events, and people in the environment; developmental tasks; family and cultural influences; and issues that arise in the course of daily living together (Jones & Nimmo, 1995).

1.4.4. Negotiated Learning. In the emergent curriculum, negotiation is a central way of describing curriculum and projects. This is based on the idea that children co-construct

knowledge within their social group. The Reggio educators stress the importance of debates, negotiations and cooperative problem solving during the projects. According to Katz and Chard (2000), preschoolers are more likely to work on projects in small groups rather than individually or in large groups. Cooperative learning encourages children to actively exchange their ideas rather than just passively absorb knowledge from teachers (Tudge and Caruso, 1998). To facilitate cooperative problem solving, Tudge and Caruso (1998) suggest that the teacher should support children to interact with each other, help children make clear their shared goals, and help children who are less participatory in initiating the project become more involved in the process. Children gradually construct knowledge by taking reflective stances toward each other's constructs, and by honouring the power of each other's initial perspective toward understanding subject matter (Forman & Fyfe, 1998). The negotiated learning can be achieved through engagement with the environment and interaction with peers.

Forman and Fyfe (1998) define negotiated learning as a dynamic system of causes, effects, and counter effects. They identify three components that describe negotiated learning: *design*, *documentation* and *discourse*. "*Design* refers to any activity in which children make records of their plans or intended solution. A drawing can be a design if it is drawn with intent to guide the construction of the items drawn, or to guide a sequence of steps (p.241)." *Design* can be in many media; a clay fountain to guide the structure of one made from pipe and hose, a wire shape to describe the movements of a dance to be learned by others. Because the *design* will be revisited later to lead another activity, "*Discourse*" in this "dynamic system" means a deep desire to study and understand each other, deal constructively with disagreement and try to find foothold in a continuous change of perspectives. *Documentation* refers to any activity that

provides recording of performance with detail, to help others understand the process and the reasons behind it. The purpose of *documentation* is not to display but to give explanation. *Documentation* describes the depth of the children's learning and the educational rationale of activities. *Documentation* is essential to negotiated and emergent learning.

Moreover, Forman and Fyfe (1998) provide a diagram to explain the relation of the three components. These three components, *design*, *documentation*, and *discourse*, form a reciprocal system. *Design* can be used to develop *documentation*. *Documentation* can be used to stimulate *discourse* by providing records for reflective teaching. In addition, these components serve a diversity of constituents: children, teachers, parents and the general public. *Documentation* helps children to deepen and broaden the use of their concepts when they revisit their own ideas. *Documentation* assists teachers in planning follow up activities, it helps parents who want to extend the child's learning into the home, and it serves the general public, who decide on the stage of support for the education program. These three components are illustrated in a diagram which shows that the relations of components are evident in the project in which children are engaged.

1.4.5. Projects. In the Reggio Emilia schools, children learn through projects. Projects facilitate children to construct knowledge cooperatively with their peers and enable them to make their own choices. During the project, children unfold their ideas and feelings, and co-construct their knowledge through the discussion. In this regard, a project shows the most significant aspects of the Reggio Emilia approach in representing the idea of negotiated curriculum. Projects are usually worked on with small groups of two, three, or four children. Working in small groups allows children to exchange their ideas more efficiently. This promotes

greater reciprocity between children (Rankin, 1985). While children are engaged in projects, they ask questions, look for answers, and collaborate with peers. New (1990) pointed out that the project makes the most of opportunities for shared problem solving.

In regard to time, projects may be continued until the children's interests and curiosities are satisfied (Katz and Chard, 2000). Gandini (1993) pointed out that Reggio teachers know the children's personal time clocks because children stay with the same teachers and the same peer group for three years. Katz and Chard (1989) stated the idea of time around the project performance:

The disposition to lose oneself in an activity may be threatened by frequent interruptions. A classroom schedule that segments the day into activities lasting only 15 or 20 minutes may undermine the disposition to become deeply involved in worthwhile effort. The daily program for young children should be flexible rather than fragmented in allocating time to various activities. (pp. 35-36)

Thus, children can develop a deeper understanding of a topic by presenting multiple perspectives of experience over an undecided period of time while they are engaged in the project.

In addition, projects make the learners responsible for their own learning (Fried-Booth, 1986). According to Katz and Chard (2000), the opportunity to make choices is an important feature of project work. The more opportunities children have to make authentic choices, the more the children's interests and commitments to the work are increased. In regard to making genuine choices, projects provide children with the opportunities to make choices at several levels. Some choices can be procedural, some aesthetic, and some intrinsic to the activity, but they all have connotations for learning in cognitive, aesthetic, social, emotional, and moral areas (Katz & Chard, 2000). In other words, this approach is based on an integrated curriculum in

which diverse subjects are intertwined. Through the process, knowledge can be integrated into the everyday life of the children (Hendrick, 1997).

Generally, projects begin with verbal expression of children's experience and then children are encouraged to draw an initial graphic representation of their ideas. Teachers provoke children with open-ended questions to develop children's interest in investigations. During the first discussion, the teacher and children suggest questions that they will explore and answer. As Chard (1992) describes, the processes of children's problem solving, investigating, drawing from observation, constructing models, observing and recording findings, exploring, predicting, and discussing their new understandings are at the heart of these projects.

The topics for the Reggio projects can result from the children's natural encounters with the environment, or from common interests of the children and adults. They can also be based on the teacher's ideas about cognitive or social concepts that children are developmentally and receptively ready for (New, 1990). Once a topic is selected, teachers usually begin by making a web, concept map, based on brainstorming with the children. I believe that this web helps teachers frame a direction in which to carry out the project.

In regard to choosing the topics for projects, Katz and Chard (1998) stated a list of criteria for appropriate topics for projects. These criteria can be considered as an outline for facilitating the development of projects:

1. It is directly observable in the children's own environments.
2. It is related to the children's experiences.
3. First-hand direct investigation is practical and not potentially dangerous.
4. Local resources (field sites and experts) are positive and readily available.
5. It has good potential for representation in a variety of media.
6. Parental participation and contributions are likely, and parents can become involved.
7. It is perceptive to the local culture and culturally appropriate in general.
8. It is potentially interesting to many of the children, or represents an interest that adults

consider worthy of developing in children.

9. It is related to curriculum goals and standards of the school or district.
10. It provides sufficient opportunity to apply basic skills.
11. It is optimally specific-not too narrow and not too broad.

From children's projects, we can clearly see the children's learning process and how they build collective knowledge.

1.4.6. Atelierista and Atelier. One of the distinguishing features of the Reggio Emilia schools is that each school has an "Atelier" or studio, to provide the space and resources necessary for a high-quality art environment. According to Fraser (2000), the role of the Atelier was conceptualized as a retort to the insignificant and subsidiary role assigned to expressive education and it was proposed as a reaction against the prevailing notion of the education of young children as based mainly on words and simple-minded rituals. Malaguzzi (1998) also described the concept of the Atelier; the Atelier is part of a multifaceted design, an additional space for searching, or for digging with one's own hands and one's own mind, and for refining one's own eyes through the performing of the visual arts. It is a place for stimulating one's aesthetic sense, a place for the individual exploration of projects, a place for investigating motivations and theories of children, a place for exploring differences in tools, techniques, and materials with which to work. Moreover, the Atelier should be a place for helping children's logical and creative abilities to develop. Through the aesthetic stimulation from abundant materials and environment of the Atelier, children become familiar with using verbal and nonverbal language in their daily educational experiences.

An Atelier is filled with attractively displayed art materials and equipment which are accessible to children. Children are provided with many different tools for creating their artwork such as high-quality paintbrushes of various widths, lead and colored pencils, felt-tipped pens,

chalk, pastels, charcoal pencils, and tools to model clay (Fraser, 2000). Many different colored paints are mixed in glass jars which are set out on trays or carts besides the easels. Paper, transparent papers to use on the light tables, colored tissue, and cellophane paper are offered. The children also are provided with rare materials such as wire, plaster of Paris, materials from nature, and recycled materials. Clay is provided in great quantity, and children are encouraged to use it in various ways. Loris Malaguzzi (1998) described the Atelier as a

place where children's different languages could be explored by them and studied by us in a favorable and peaceful atmosphere. We and they could experiment with alternative modalities, techniques, instruments, and material; explore themes chosen by children or suggested by us; perhaps work on a large fresco in a group; possibly prepare a poster where one makes a concise statement through words or illustrations...What was important was to help children find their own styles of exchanging with friends both their talents and their discoveries (Malaguzzi in Edwards et al., p. 74).

According to Edwards, Gandini and Forman (1998), the Atelier is a central feature to each school. It functions as a resource room, as the place where expression through media becomes inseparable from the learning process. It could be compared to an art studio, but Reggio educators explain that the purpose of the atelier is much more complex than simply a place for art production. The Atelier has two functions. First, it is a place for children to become masters of all kinds of techniques, such as painting, drawing, and working with clay. Second, it helps the teachers understand the process of how children create autonomous vehicles of expressive freedom, cognitive freedom, symbolic freedom, and paths to communication (Vecci, 1998). With the help of an "Atelierista", a teacher who is trained in the visual arts, children are able to represent their ingenious ideas by the use of expressive languages. Having an Atelierista who works closely with the teachers and the children in every preschool is one of the prominent characteristics of the Reggio Emilia schools. The Atelierista is a trained art educator in charge of

the Atelier; she/he supports the teachers in curriculum development and documentation and promotes children to use symbolic languages and interact with various materials (Edwards, Gandini, & Forman, 1998).

1.5. Organization of the Study

Chapter I is an introduction for this study. It includes the purpose of the study, statement of the problem, research questions and assumptions, the philosophy underlying the Reggio Emilia approach..

Chapter II provides literature review which has strong relationship with this study. It encompasses (a) the image of the child and childhood; (b) the child-teacher relationship; (c) the relation between children (d) art in Reggio Emilia (e) the development of symbolic thought and representational abilities (f) the pedagogy of listening (g) pedagogical documentation, and (h) projects of the Reggio Emilia approach.

Chapter III discusses the methodology used in this study. It contains qualitative methodology, case study, process of this study, data collection procedures, analysis of the data, and trustworthiness.

Chapter IV presents pedagogical documentation of children's knowledge- building processes as the findings of this study, recommendations for further research, and final comments.

CHAPTER 2

Literature Review

Introduction

The Reggio Emilia educators with parents and society have collectively developed an outstanding early childhood system in the city of Reggio Emilia, Italy. Worldwide, early childhood educators and researchers have explored the Reggio Emilia approach for theory and practices. In Reggio Emilia, curriculum is not divided into separate subjects, such as mathematics, science, reading, and so on. Children's knowledge-building is facilitated through the exploration of themes and work on short and long term projects. Particularly, while children are engaged in a project, they represent their own ideas by utilizing different types of media (e.g., words, drawings, paintings, sculptures, etc.) and constructing learning through the interaction with materials (Malguzzi, 1993). In the Reggio schools, arts are not taught as separate subjects or separated from other subjects of instruction. Instead, arts are integrated into the curriculum for learning and problem solving around projects. Children are encouraged to express their perceptions and experiences through their own creations or artifacts. In short, art is considered as a language, another way to express ideas, feelings, and emotions (Seefeldt, 1995, p.39).

This chapter presents literature which is related to children's knowledge-building process, their representation of thoughts and theories, and the image of child and teacher, which all play a fundamental role on children's learning. Thus, this chapter will unfold according to the following order: (a) the image of the child and childhood; (b) the child-teacher relationship; (c)

the relation between children (d) art in Reggio Emilia (e) the development of symbolic thought and representational abilities (f) the pedagogy of listening (g) pedagogical documentation, and (h) projects (Gandini, Hill, Cadwell, & Schwall, 2005, Edwards, Gandini, & Forman, 1998; Hendrick, 1997; Stegelin, 2001).

The rationale of the learning theory of this research is related to the image of the child, whereby the child is rich in potential, strong, powerful, competent and, most of all, connected to adults and other children (Malaguzzi, 1993). To be compared in educational aspects, the perspectives of modernity conditions regarding the image of the child will be also discussed at the beginning of this chapter.

2.1. The Image of the Child

Historical perspectives of the child's learning are deeply interrelated to the image of the child. Dahlberg, Moss and Pence (1999) found ways of understanding who the young child is and might be.

2.1.1. The Child as Knowledge, Identity and Culture Reproducer. The young child is understood as an empty vessel or 'tabula rasa', Locke's child. The main role of childhood is to become ready to learn and ready for school by the age of compulsory schooling. Thus, the young child needs to be full of knowledge, skills and dominant cultural values all of which are previously established, socially approved and ready to administer as a process of reproduction and transmission. Within this perspective, early childhood is the base for successful progress through later life, journey or realization from the imperfection of childhood to the mature human status. Therefore, each stage of childhood is preparation, or readying for the next. To politicians

and business leaders, early childhood is seen as the first stage of producing a stable, well-prepared workforce for the future and as a base for long-term success in a global market. Above all, this view of childhood and the child involves reproduction of the dominant values of today's capitalism, individualism, competitiveness, and flexibility.

2.1.2. *The Child as an Innocent, in the Golden Age of Life.* The image of the child as innocent and primitive is Rousseau's child. He believes that the child has capacity for self-regulation which will seek out Virtue, Truth and Beauty and society corrupts the goodness with which all children are born. This image of the child makes adults shelter children from the corrupt surrounding world which is violent, oppressive, commercialized and exploitative by creating an environment where the young child will be provided with protection, continuity and security. However, this environment prevents children from a world of which they are already a part, which means we not only deceive ourselves but also we do not take children sincerely and respect them.

2.1.3. *The Young Child as Nature... or as the Scientific Child of Biological Stages.* In this dominant construction, the young child is considered as part of nature, an essential being of universal properties and intrinsic capabilities that develops according to a biologically determined innate process. The advocate of this construction says that is what children of that age are, that is what they can do and cannot do if they are normal, Piaget's children. This construction views the child as a natural phenomenon, abstracted and decontextualized, essentialized and normalized, identified through an abstract notion of maturity rather than a social being. This individual child who, regardless of context, pursues a standard sequence of biological stages that constitutes a path to full realization or a ladder-like development to

maturity. It is also a scientific child who develops through biologically determined stages on the path to full human status, the view held by developmental psychology. In this construction, a child is fit into categories, including social development, intellectual development, and motor development. Therefore, processes which are very complex and interrelated in everyday life are isolated from one another instead of all working together in the production of change.

2.1.4. The Child as a Co-constructor of Knowledge, Identity and Culture. In many modern perspectives, a child is an autonomous, stable, centered subject; whose inherent and preordained human nature is revealed through the process of development and maturity; and who can be explained in terms of scientific concepts and classifications. These perspectives produce an incomplete child, weak and passive, incapable and under-developed, dependent and isolated.

However, a new image of the child has emerged, as a result of a number of interrelated developments (Mayall, 1996): social constructionist and postmodernist perspectives within philosophy, sociology and psychology and the problematizing of developmental psychology.

Loris Malaguzzi (1993) defined the image of the child:

Our image of children no longer considers them as isolated and egocentric, does not see them only engaged in action with objects, does not emphasize only the cognitive aspects, does not belittle feelings or what is not logical and does not consider with ambiguity the role of affective domain. Instead our image of the child is rich in potential, strong, powerful, competent, most of all, connected to adults and other children (p.10).

The main features of a new understanding of children constitute a new paradigm of the sociology of childhood (Prout and James, 1990). The features of this new paradigm consist of a recognition that:

- childhood is a social construction, constructed both for and by children, within an actively negotiated set of social relations. While childhood is a biological fact, the way in which it is understood is socially determined;
- childhood, as a social construction, is always contextualized in relation to time, place and culture and varies according to class, gender and other socioeconomic conditions. There is, therefore, neither a natural nor universal childhood, nor indeed a natural or universal child, but many childhoods and children;
- children are social actors, participating in constructing and determining their own lives, but also the lives of those around them and the societies in which they live, and contributing to learning as agents building on experiential knowledge. In short, they have agency;
- children have a voice of their own, and should be listened to as means of taking them seriously, involving them in democratic dialogue and decision-making and understanding childhood;
- children contribute to social resources and production and are not simply a cost and burden;
- relationships between adults and children involve the exercise of power (as well as the expression of love). It is necessary to take account of the way in which adult power is maintained and used, as well as of children's resilience and resistance to that power. (Dahlberg et al., 1999).

This framework considers the child as co-constructor of knowledge, of his or her own identity, and of culture. The educators of Reggio Emilia take the idea of the rich child and believe that all children are intelligent. This is the starting point for their pedagogical practice, where language, in particular, is seen as productive. In their practice, learning is a cooperative and communicative activity, in which children construct knowledge together with adults and other children. Learning is not carried out in isolation. Learning is not the transmission of knowledge leading the child to preordained outcome nor is the child a passive receiver or reproducer who passively waits to receive the knowledge of adults. This rich child actively engages with the world. Malaguzzi (1993) said a child has a hundred languages and is born with a lot of possibilities, expressions and potentialities which stimulate each other. Learning theories that start with active and competent children are not only worth listening to but also demand serious scrutiny.

Rinaldi (2005) also describes her perspective of the image of child as a competent child who is capable of relating and interacting with respect for others. This child is accepting of conflict; capable of constructing himself; and competent to construct theories to interpret reality and make hypotheses to understand reality. Moreover, a child who has his own values and is able to build relationships of solidarity; demands to be respected and valued for his own identity, uniqueness and difference. This theory requires teachers to respect the subjectivity of the learner, a point which is very important not only from a pedagogical point of view but also in terms of values, social policy and culture. Therefore, this theory influences the relationship between the child and teacher.

2.2. The child-teacher relationship

According to Rinaldi (2005), the metaphor that stands for the image of a Reggio school is that of a laboratory, where children's and teachers' research processes are intertwined and continuously evolving. Teaching and learning practices are complementary with Vygotsky, Bruner and the socio-constructionist theorists. This complementary relationship is well described by Malaguzzi: 'never teach a child something that he can learn on his own.'

Based on this perspective, Carlina Rinaldi (2005) explains the role of the teacher and the relationship between the child and teacher in her book, *In Dialogue with Reggio Emilia* (p. 125-126): The role of the teacher in Reggio Emilia is a co-constructor of children's learning, rather than simply a transmitter of knowledge and culture. As a teacher she is aware of vulnerability and accepts doubts, mistakes, surprise and spontaneous creation. When teachers believe that children have their own theories, interpretation, and questions, and are protagonists

in the knowledge-building processes, then listening plays an important role in educational practice. Through listening to a hundred languages, with all senses, teachers are able to open to others and what they have to say. The role of the teacher is to produce a context in which children's curiosity, theories and research are legitimated and listened to, a context in which children feel comfortable and confident, motivated and respected in their cognitive paths and processes. In this sense, communication is a fundamental way of giving form to thought, as well as developing children's learning relationship.

2.3. The Relationships between children

According to Rinaldi (2005), the relationships between children become a context in which the co-construction of theories, interpretations and understandings of reality can take place. Small group work becomes a basis of unity, a space in which thoughts take shape, are expressed and compared with others' different interpretations; new thoughts are produced; meanings are discussed; and 'the hundred languages' can emerge. The relationships between children offer opportunities to lend and borrow ideas for cognitive conflict. In this circumstance, children experience the joy of being given back their own knowledge, enriched and elaborated on by the contribution of others through communication and exchange. In this way, both individual and group thought develop and advance. Argument and conflict play a primary role in this system, bringing out the important parts of individual thought and giving new meaning to the knowledge-building process. This is because knowledge develops much more within a context of diversity rather than in one of homogeneity, and the arguing your own point of view in situations of conflicting understandings is the catalyst for the fundamental process of

metacognition. This provides an opportunity for 're-knowing' your knowledge, which is enriched by the new and different opinions offered by others. The composition of the group, including age and gender (mixed or single sex), the number in the group, its spatial location, the interest in and proximity of the topic, are all elements that structure the exchange process. The following literature is presented to describe characteristics of children's group learning in Reggio Emilia.

2.3.1. Learning Groups. Tuner and Krechevsky (2003) explained how young children work in small groups and how documentation makes children's learning visible in the Reggio Emilia school. This study shows how Giovanni, Giulia, and Leonardo help one another figure out solutions to a drawing problem at the Diana school in Reggio Emilia, Italy (Project Zero & Reggio Children, 2001). After playing the game, ring-around-a-rosy, the teacher asked four and five year old children to predict how they might draw a circle of children playing this game. The children individually drew and then got together in small groups to compare and share their drawings. When Giulia said it was hard, Giovanni made a suggestion for children to all stand like the kids in their drawings. The children realized that they were all facing the wrong way when they lay down in the way that the figures in Leonardo's drawing were lying and then stood up. Giovanni gathered some children to make an actual ring-around-a-rosy circle for Giulia so they could see what it looked like. He said it was like a photo and made an observation:

There are some kids where you only see their backs. I can see Giulia's back, and she's looking at Giorgio's face. I can see Leonardo's side, profile, and he's looking at Matteo's face. (Project Zero & Reggio Children, 2001, p. 197).

Then, the teacher proposed that children draw a second ring-around-a-rosy. In the

second drawings, Giovanni's idea about backs, fronts, and profiles of children looking at one another in a circle informs both Giulia's and Leonardo's work. Giulia, Giovanni, and Leonardo made a more complex understanding by learning from each other than they did working alone. Each child's questions, strategies, and explanations contribute to the group's understanding of how to represent a three-dimensional subject in a two-dimensional medium.

This study shows what happens when a group becomes a learning group and how classroom teachers support the making of such a learning group. And this suggests several characteristics of productive learning groups:

a) *Wondering together.* Giulia, Giovanni, and Leonardo tried to represent ring-around-a-rosy game in drawing. Together, children made an effort to solve the problems that they encountered in their first drawings. When they worked together, children learned not only about the challenges of spatial representation, but also about the process of learning from and with others. Children became curious about how the understandings of others are developed and modified.

b) *Sharing and comparing.* The Reggio educators encourage children to compare their drawings. Giulia, Giovanni, and Leonardo learned from the questions that they asked one another when they shared their drawings and thoughts. Through children's comments, interpretations, and ideas they were led to critical ideas that preceded the group work.

c) *Building collective Knowledge.* The ring-around-a-rosy activity was part of a classroom project in which older children tried to explain how to play a ring-around-a-rosy game to a 3-year-old class. In this circumstance, the older children shared their collective knowledge with younger children. Children working in small groups regularly share what they

are learning with the rest of the class. Reggio teachers stimulate children to work together by asking what children can do to remember what they did so that they can communicate with each other and learn from another perspective. Teachers take into careful consideration the composition of each group, such as age, competencies, gender, time spent together, friendships, interests, the size of the group, and the children's own suggestions for group membership (Project Zero & Reggio Children, 2001).

The learning group is one of the distinctive characteristics of the Reggio Emilia approach. Through pedagogical documentation, we are able to see how effectively children build their knowledge in a group situation. The teacher's documentation enables the children to be aware of their individual and group learning. Documenting children's learning and sharing it with children allows them to see how they can learn from one another. Documentation helps teachers to understand the process of teaching and learning. In this sense, children's learning processes are visualized with the help of art media children choose to represent their ideas. Thus, art plays a significant role in relation to the children's learning in the Reggio Emilia approach.

2.4. Art in Reggio Emilia

In Reggio Emilia, art is more than just a curriculum subject. It is one of the essential tools, one of the "hundred languages," that children use to enhance and represent their learning (Fraser, 2000). Children in the Reggio schools draw to learn as opposed to learn to draw (Edwards, Gandini, & Forman, 1998, pp.1-7). When children in the preschools in Reggio Emilia become aware of something that puzzles them, the teachers encourage them to draw their

thoughts about it. In Reggio Emilia, art has a broader purpose that goes beyond sensory exploration and self-expression; it becomes a means for learning, a means of communicating ideas, and one of the “hundred languages” of children (Fraser, 2000). Children use graphic languages such as drawings, paintings, clay or other media to record and represent their memories, ideas, predictions, hypotheses, observations, feelings, and so forth, in their projects. In Reggio Emilia schools, children are provided with visual and graphic languages to help children explore and express understandings of the world. The visual arts are integrated into the work as additional languages available to young children who are not yet competent in writing and reading (Edwards, Gandidi, Forman, 1993, p.27). In Reggio Emilia, art is inseparable from the rest of the curriculum and in fact is central to the educational process, not only as a form of exploration but also as a form of expression (New, 1990). The variety of young children’s symbolic representation is reinforced at the Reggio preschools by the riches of materials that are offered to them. By the use of various materials, children’s thinking becomes visible and expressive. As Cadwell (1997) explains, children’s intellectual development is promoted through a focus on symbolic representation, including words, movement, drawing, painting, building, sculpture, shadow play, collage, dramatic play, and music.

2.4.1. Learning through One Hundred Languages. The use of diverse media of means for expression is what the Reggio educators have called the hundred languages of children. Children’s symbolic representations through the hundred languages promote their communication, representative skills, and creativity. According to Forman and Fyfe (1998), a language is more than a set of symbols. A language transmits meaning through these symbols. They also emphasize that the symbols convert a medium into a message or a language and it is

the message that motivates children to negotiate shared meaning and to co-construct knowledge. Children's expression through many media is inseparable from the whole cognitive/ symbolic expression in the learning process (Gandini, 1993).

Edwards and Springate (1995) pointed out several characteristics of young children's learning when implementing teaching through their hundred languages. First, young children are developmentally capable of classroom experiences; they practice higher level thinking skills, such as analysis, synthesis and evaluation. Analysis refers to the ability to break down material into pieces to understand the structure, and to see similarities and differences. Synthesis is the ability to put parts together to form a new whole, and evaluation is judgment of material based on definite criteria. A second aspect of learning is that young children make mental images, represent their ideas and communicate with the world, but need increasing competence and integration across various formats of languages. Through communication and negotiation with peers, children move to new levels of knowledge. Third, meaningful activities, in which diverse subject areas are integrated, promote young children's learning. Activities that are meaningful and relevant to children's lives help them find the connections between things they are learning. And fourth, young children benefit cognitively from in-depth, long-term, and open-ended projects.

2.4.2. Art Media to Deepen Children's learning. Children are provided with a wide variety of art media and materials such as clay, collage materials, pastels, paints and charcoals on a daily basis in the Reggio Emilia schools. They are free to choose the materials they would like to use to express themselves. In addition, children are encouraged to use various media to represent their ideas because children learn a great deal when they use several media to express

the same idea (Forman, 1998). Through the experience of using a variety of media, children begin to understand that representation of each medium captures different aspect of their concept because early exposure to art media enables children to create the ingenious art. In the Reggio Emilia approach, children who attend the infant-toddler centers are provided with paint, clay, and other art materials to explore before entering preschools. They learn a great deal about the inherent features of many art materials available for use before they are three years old. This exposure and exploration was termed “learning the vocabulary” of the various representational languages (Gandini, 2005). It is essential for children to acquire knowledge of materials, gain competence with them, and use them in a variety of ways. Therefore, children need to go through the stage of exploring the materials in a sensory manner so that they can learn the skills and techniques for producing more elaborate artworks to represent their ideas and learning. Therefore, a first exploratory encounter with materials is a necessary step in the children’s process of learning. Through such encounters and explorations, children build an awareness of what can happen with materials (Gandini, 2005). They can also often discover or invent different ways of using materials in the process of experimentation and observing through other children (Gandini, 2005). From this context, Giovanni explains that:

It is through interactions between a child and a material that an alphabet can develop. As the children use paper, clay, wire, and so on, different alphabets will develop from different materials. As children use their minds and hands to act on a material using gestures and tools and begin to acquire skills, experiences, strategies, and rules, structures are developed within the child that can be considered a sort of alphabet or grammar (Gandini, 2005, p. 13).

An *alphabet* is best described as the combination of the characteristics of a particular material along with the relationship that comes up in the interaction between the child and the

material. Through the construction of the relationship, materials can be modified and transformed to become expressive languages representing children's thoughts and feelings. Therefore, discovering how a particular material is presented and is transformed helps the children to acquire knowledge about the material itself and this gives them the chance to use different alphabets in the process of representation of their own ideas (Gandini, 2005). Children's relationships with materials give them multiple ways to communicate their thoughts and feelings.

The project called "The Amusement Park for Birds" shows an example of how children construct their knowledge by the use of different media. In this project, children were curious on how a water wheel worked. A group of children at La Villetta school discussed what they knew about water wheels, drew them, and made them in paper, clay, and finally wood and wire. At each passage, their questions about how water wheels work and where they are used deepened and broadened. Forman (1998) described how a child constructs an understanding of a water wheel in five media. This article shows a child's collaborative learning process through interacting with resources. In this article, the author examines a single case of a boy trying to understand a water wheel and shows what it means to "know" the water wheel. Five-year-old Filippo, who attends La Villetta School, tries to understand how the water wheel works. At the same time, he is trying to understand how to represent it. Filippo expressed his ideas in a variety of media (words, drawing with a marker, clay and making models from different materials). Filippo began a story about a fish caught and brought up out of the water by one of the water wheel paddles. The story of the fish caught in the water wheel produced interesting questions: how does the machine work and how can a paddle scoop up a fish? Based on this

question, Fillippo constructed an understanding of a water wheel in the use of five media:

- 1) Narration: Fillippo considered how the paddles lift water and fish.
- 2) Drawing: he considered which side of the wheel would move something up out of the river.
- 3) A paper model: he considered how the central spokes must support the rim so that it will spin.
- 4) A clay model: he considered the need to keep loops straight out so that they can do their work of catching. He added buttresses to ensure that the clay paddles stood up from the horizontal rim resting on the work table and do not fall.
- 5) A wood and foil medium: he considered both actions of catching water and being pushed by water. He also considered the small pan's orientation to the water's flow.

Thus, with the help of art media, children are able to develop symbolic thought and representation abilities, as well as promote their understanding of knowledge. The following presents the significance of the development of symbolic thought and representational capacities.

2.5. The Development of Symbolic Thought and Representational Abilities

According to Copple (2003) educators and developmental psychologists stress that the development of symbolic thought and representational abilities are fundamental capacities which promote the development of self-regulation, problem solving, planning, and higher level thought processes. Therefore, it is valuable to examine how different early childhood programs promote children's development of symbolic thought and representational capacities. From this perspective, Copple (2003) analyzed and compared three different preschool programs, High/Scope, Tools of the Mind, and Reggio Emilia approach in terms of one context from the range of strategies and experiences to compare the distinctive way that these three programs use the theoretical construct of representation development to pedagogical strategies.

Before Copple (2003) analyzed the three approaches, he indicated fundamental capacities that enable children to develop self-regulation, problem solving, planning, and higher

level thought process:

Children's ability to form mental images that enable them to anticipate and remember objects, people, and events that are not there is increased from ages 3 to 6 (Bruner, 1983; Piaget, 1926, 1952; Vygotsky, 1962, 1978). Preschoolers begin to think ahead and predict the consequences of their physical actions. Vygotsky (1962, 1978) stressed the role of language in developing internal control of action and thought. According to Vygotsky, languages are the primary means for developing both understanding and self-regulation. Children repeat instruction and guidance that others have given them and begin to give themselves audible directions. Then this private speech becomes internalized as thought (Vygotsky, 1978). The ability to store and recover mental images allows children to use past experience in various situations. And the capacity of mental representation helps children to make plans before they act (Friedman, Scholnick & Cocking, 1987).

Also, representational capacities can be developed during the preschool years through dramatic or make-believe play. Children learn to use objects and actions in their symbolic function through dramatic play. In addition, dramatic play context is distinctive in its support of self-regulation because children are very much motivated to stick to the roles and rules in the play so that they develop their ability of self-regulation (Vygotsky, 1977). As children's symbolic play is more complicated, they more able to think ahead and plan how the play will go (Gowen, 1995; Nicolich, 1977). Therefore, children who have more opportunities to plan and reflect on their own activities score higher on measures of language, literacy, social skills, and overall development (Epstein, 2003). Moreover, when children try to represent their understanding, this procedure helps them deepen, improve, and expand their understanding

(Bronson, 2000; Copple, Sigel & Saunders, 1984; Forman, 1994; Malaguzzi, 1998).

Copple (2003) compares and analyzes three approaches, High/Scope, Tools of the Mind, and Reggio Emilia, which put value on symbolic capacities in children's learning. Each of these is a theory-based approach that considers representational development as central. Besides, these three approaches make use of a wide range of activities and experience to promote children's development and learning. This study examines each program in terms of one context from among its strategies and experiences, and compares similarities and differences among these approaches.

2.5.1. Planning and Reflection in High/Scope. This curriculum is based on constructivist theories of development and learning, mainly Piagetian (Hohmann & Weikart, 2002). The priority of this curriculum is the cognitive skills of language, experiencing and representing, along with classification, number, and other conceptual areas. The High/ Scope pedagogy is based on the constructivist view that the child is an active learner who learns through the direct interaction with the world and opportunities to reflect on this interaction. The plan-do-review sequence is a hallmark of this curriculum (Hohmann & Weikart, 2002): Children plan what they want to do during day time in a small-group time for 5-10 minutes: the area they want to visit, the materials they would like to use, and the peers they will play with. The children carry out their plan for 45 minutes to an hour. Then, the teacher and children review and recall what they have done and learned in a small group. The following is what teachers do to guide children in the plan-do-review sequence (Epstein, 2003).

1. Make planning and reflection a regular part of the program day.
2. Make sure children can see the area and materials in the room as they are planning.
3. Ask children open-ended questions.
4. Listen attentively to children's plans.

5. Interpret and expand what children do and say.
6. Support, accept, and extend all the ways children express their plans.
7. Encourage children to elaborate on both their plans and their reflection on what they have done.
8. Document children's plan: Documentation, including writing, drawing, and photograph, helps children become more conscious of the process and value of planning.
9. Help children connect their plans and activities with their reflections.
10. Encourage children to carry over their activities to the next day.

Children's mental representations on which they draw and clarify in planning and reviewing their activities are important in the High/Scope curriculum. According to Epstein (2003), a director of High/Scope's early childhood division:

Planning and reflection encourage children to take the initiative in pursuing their interests, encouraging a sense of control over the environment and one's ability to transform it. As children make plans and review their experiences, they enhance their predictive and analytical abilities, harness self-regulatory mechanism, and develop a sense of responsibility for themselves and the choices they make. By encourage these twin processes-expressing intentions and evaluating actions-we can equip young children with the thinking skills they need for later schooling and adult life.

2.5.2. *Play Planning in Tools of the Mind.* This approach stresses children's development of self-regulation and the cognitive and metacognitive foundations of literacy based on Vygotsky theory. Vygotskians consider play as fostering the development of deliberate behaviors-physical and mental voluntary actions because children need to follow the rules of the play and play partner constantly monitor each other to make sure if everyone is following the rules (Bodrove & Leong, 2003). Like High/Scope teachers, teachers in Tools of the Mind regularly involve children in planning for their activities before they begin. Also, Tools of the Mind teachers encourage children to discuss the roles in the play, the play scenario, and how the play will unfold; engage children in thinking back to and reflecting on their play as well as

planning it (Bodrova & Leong, 2003). However, unlike High/Scope teachers, they wait until the following day to bring out children's reconstructions and comments on a play. The teachers found that asking about changes in plans right away after play tended to make children feel reluctant to change their plan. In this context, play contributes to the development of children's language skills, problem solving, self-regulation, and appreciation of other's play efforts. Researchers have concluded that children who actively participate in mature dramatic play during preschool and early elementary years are certainly advanced in intellectual development, score higher on tests of imagination and creativity, and have a better ability to think inventively (Freyberg, 1973; Pepler & Ross, 1981; Smilansky, 1968).

2.5.3. Representation in project work at Reggio Emilia. Even though the Reggio Emilia approach is indebted to Vygotsky's ideas, the Reggio Emilia approach has a different view on obtaining and strengthening children's capacities. Rebecca New (1996) stated that:

For Vygotsky (1978), play was the ultimate setting within which the zone of proximal development might be revealed, a context in which the child is "a head taller than himself." For Reggio Emilians, play is highly valued for its ability to promote development, but no more so than the complex and long-term projects in which children and teachers become engaged (p. 274).

In an interview with Malaguzzi (1998), Gandini wrote that an effective way to start a long-term project is for teachers to initiate a discussion "to gather memories, thoughts, and desires of the children" (p. 91). According to Malaguzzi (1998), the children's predictions and hypotheses are keys in pursuing the project, and preliminary discussion is the "coordinating fulcrum" (p. 91) of the group work. In the course of the project, teachers make observation, tape record children's conversation and take photo presenting children's work in progress. The documentation of children's work enables teachers and children to revisit to their work so that

children are able to remember significant points and reflect on their ideas. Above all, the documentation of children's work expands children's understanding of representational systems such as verbal language and visual representation in various media. In fact, children's use of graphic representation is a significant characteristic of Reggio Emilia. Reggio Emilia educators (Edwards et al., 1998) see graphic representation as a tool of communication that is much simpler and clearer than are words. Therefore, it is a valuable way to help children make clear and broaden their thinking. Malaguzzi (1998) and Forman (1994) also found a great deal of advantage in moving from one symbolic language to another to represent. Malaguzzi (1998) said, "They have to reestablish and clarify the frames of contours of the problem. With each step, the child goes further and higher, as a spaceship with several stages, each pushes the rocket deeper into space" (p. 92).

2.6. Pedagogy of listening

The pedagogy of listening explains how Reggio educators understand listening, sometimes described as listening to thought. Rinaldi (2005) stated that listening to children is difficult, and interpreting what teachers observe in a comprehensive way is more difficult. It requires a great sense of balance as well as openness toward others. Children need to be appreciated and to live within an educational context that encourages exploration, because the school is a place for learning and the creation of knowledge. The schools must be a place where the symbolic and value systems of the culture and the society are experienced, interpreted, created, and recreated by children and adults together. In this way, a school becomes a place where true culture is produced: the culture of knowledge. In this context, pedagogy of listening

plays a fundamental role in Reggio schools.

Carlina Rinaldi, a former pedagogical director of the municipal preschools and now pedagogical consultant to Reggio Children describes the process of thought to explain the pedagogical work in Reggio (Dahlberg et al., 2005):

One of the first questions we should ask ourselves as teachers and educators is this: 'How can we help children find meaning of what they do, what they encounter, what they experience? And how can we do this for ourselves? ...

The search for meaning is a difficult task especially for children who nowadays have so many references in their daily lives: their family experience, television, and the social places they frequent in addition to family and school. It is a task that involves making connections, giving meaning to these events, to these fragments that are gathered over the course of many and different experiences...

For adults and children alike, understanding means being able to develop an interpretive 'theory', a narration that gives meaning to the events and things of the world. These theories are provisional, offering a satisfactory explanation that can be continuously re-worked... It has to please us and convince us, to be useful and able to satisfy out intellectual, affective, and aesthetic needs... Our theories need to be listened to by others. Expressing our theories to others makes it possible to transform a world which is not intrinsically ours into something shared. Sharing theories is a response to uncertainty. (Rinaldi, 2001b: 79-80).

Listening to thought is to hear the ideas and theories of others and to treat them seriously and with respect. Listening plays an important role in the pedagogical work of Reggio Emilia. In Reggio, listening is recognized to be a complex and multifaceted concept. It requires a diverse form of communication, citing Malguzzi's expression, "the hundred languages of children". As well, it is saturated and mediated by values and emotion (Dahlberg, et al., 2005).

Rinaldi (2005) describes her understanding of the pedagogy of listening. Listening is not easy because it requires a deep awareness, suspension of our judgment and prejudices, and openness to change. Listening is a metaphor for having the openness and sensitivity to listen and

be listened to the hundred, the thousand languages, symbols and codes with all our senses to express ourselves and communicate with people. Therefore, listening connects us to others through welcoming and being open to differences, recognizing the importance of other's view and interpretation. Moreover, listening is emotion which is generated by and stimulates emotions, curiosity, desire, doubt, interest and so on. Furthermore, listening produces questions rather than answers by doubt and uncertainty which makes us aware of limits and possible falsification of every truth. This pedagogy of listening is the premise for any learning relationship. Therefore, listening as a 'listening context' where one learns to listen and narrate, and where individuals feel legitimated to represent their theories and their interpretations of a particular question.

Listening means being open to the other and recognizing the other's differences from others' positions and experiences. It means listening to thought-the ideas and theories, questions and answers of children, and struggling to make meaning from what is said, without preconceived ideas of what is correct or valid or appropriate. The Reggio concept of a 'pedagogy of listening' foregrounds the ideas of respecting otherness, different perspectives and values, and emphasizes relationships and the importance of being in a community for creating and re-creating theories as part of a constant process of learning that involves theorizing, dialogue, reflection and negotiation. In fact, the pedagogy of listening has a strong commitment to radical dialogue that does not resolve into a monologue, a monologue where the teacher claims to know and speak or explicate for the other, the child. Based on listening, as a teacher you have to participate together with the child, entering a space together where both teacher and child are actively listening and trying to construct meaning out of the situation (Dahlberg et al.,

2005). The pedagogy of listening is well described on the pedagogical documentation of children's knowledge-building processes.

2.7. Pedagogical documentation

Listening and being listened to is one of the primary tasks of documentation. Documentation makes visible the ways children learn. A broad range of documentation (video, tape recordings, written notes, and so on) produced and used in progress presents the following benefits (Rinaldi, 2005):

- a) It makes visible (through in a partial way, and thus 'partisan') the nature of the learning processes and strategies used by each child, and makes the subjective and intersubjective processes a common patrimony.
- b) It enables reading, revisiting and assessment in time and in space, and these actions become an integral part of the knowledge-building process (p. 68).

Listening seems to be essential for metacognitive processes and for the understanding of children and adults. In relation to the metacognitive processes, Rinaldi (2005) stated the role of memory in the learning and identity-forming processes:

Significant reinforcement can be provided to the memory by the images, the voices and notes. Likewise the reflexive aspect (fostered by the 're-cognition' that takes place through use of the findings) and the capacity for concentration and interpretation could benefit from this memory-enhancing material...I would define as a spiral as it weaves together the observation, the interpretation, and the documentation, we can clearly see how none of these actions can actually be separated or removed from the others (p. 69).

Dahlberg et al., (1999) described pedagogical documentation as: (a) a practice to encourage a reflective and democratic pedagogical practice, (b) distinct from the observation, (c) children's learning process, (d) challenging the dominant discourses, (e) not a neutral, and (f) enterprise. I will explain each of these in turn.

a) *Pedagogical documentation as a practice to encourage a reflective and democratic pedagogical practice.* With inspiration from the early childhood institutions in Reggio Emilia in northern Italy, many pedagogues around the world today have begun to use pedagogical documentation as a tool for reflecting on pedagogical practice, and as a way for the building of an ethical relationship to ourselves, to the other and the world. However, the idea and practice of pedagogical documentation has a long history. To take a Swedish example, the idea of documenting practices was an important feature of the pedagogical theory of Elsa Kohler. Like Dewey, Elsa Kohler had a reflective and problematizing approach to pedagogical practice and its related questions. Communication, interaction and observation were the central aspect of Kohler's 'activity pedagogy', and the idea that the self-reflecting pedagogue should develop an understanding of the constitution of the identity. The pedagogue in 'activity pedagogy' was seen as a researcher, and during Kohler's time many pedagogues went on to academic studies and writing dissertations (Dahlberg and Lenz Taguchi, 1994; Stafseng, 1994). This construction of the pedagogue as researcher through reflective practice has also been influential in Reggio Emilia. However, in Reggio, they have questioned dominant ideas behind observation and documentation. Instead of considering observation as being about mapping some general and objective social reality, they see it as a process of co-construction embedded in tangible and local situations (Kvale, 1992), a move of concern from

Theories to practices, from theorizing to the provision of practical, instructive accounts... The shift from third person observation to second person 'making sense'... We become interested in the procedures and devices we use in socially constructing the subject matter... We thus move away from the individual, third person, external, contemplative observation stance, the investigator who collects fragmented data from a position socially 'outside' of the activity observed (Shotter, 1993, p.59-60).

Pedagogical documentation is a crucial tool for the making of reflective and democratic pedagogical practice. However, it also has a central role in the discourse of meaning making: to find the meaning of school or to construct the meaning of school as a site for children's search for meaning. In this sense, Rinaldi (2005) suggests questions which teachers and educators should ask ourselves: how can we help children find the meaning of what they do, what children encounter and experience? And how can we do this for ourselves? These questions are for meaning and search for meaning that children continuously ask themselves at school and outside of school. Rinaldi (2005), also mentions that search for meaning and meaning making are difficult tasks for children who these days have many situations in their lives such as family experiences, television, school events, the social places, etc. It involves making connections and giving meaning to these events that are accumulated over the course of many and diverse experiences. Children conduct this search with effort, sometimes making mistakes, but they do the search on their own. The search for the meaning of life is born with the child, which has a strong connection with the image of child who is competent, strong and tries to find a meaning of life. Therefore, in this sense, to explain these theories, it is important to reveal the ways children think, question, and interpret reality and their own relationships. It can be fulfilled through the pedagogical documentation. In the discourse of quality, pedagogical documentation enables us to take responsibility for making our meanings and coming to our decision about what is going on, rather than rely on some standardized measure of quality. According to Dahlberg et al., (1999) the modernist discourse of quality in early childhood institutions involves the decontextualized pursuit for certainty through the disconnected and objective application of universal and timeless criteria. It requires a different discourse placed within the

project of post-modernity, which is diverse, complex, subjective and multiple perspectives. It is termed the discourse of meaning making in the post-modern discourse. This discourse foregrounds the importance of meaning making in dialogue with others. In the early childhood education, the discourse of meaning making speaks first about constructing and deepening understanding of the early childhood institution and its projects, mostly the pedagogical work. In this view, pedagogical documentation contributes to the project of the early childhood institution by providing the ways for pedagogues and others to engage in dialogues and negotiation about pedagogical work. Through making pedagogical work both visible and a subject for democratic and open debate, pedagogical documentation provides the opportunity of early childhood institutions gaining a new authority in society:

The question of how to restore legitimacy to early childhood institutions under existing conditions can only be tackled if the economic aspects are more closely connected with the pedagogical and values-based aspects of early childhood education. A prerequisite for this is that pedagogical practice and its functions must be made visible outside the world of schools and child care centers and become a part of public discourse... As we see it, this requires the participation of a variety of concerned groups and pedagogical practice based on empowerment, participation and reflexive discourse between parents, staff, administrators and politicians (Dahlberg and Asen, 1994, p. 166).

b) Pedagogical documentation is distinct from child observation. The main purpose of 'child observation' is to assess children's psychological development in relation to predetermined categories produced from developmental psychology and which define what the normal child should be doing at a particular age. The focus of this observation is on the idea of mental levels and stages. In this perspective, 'child observations' are a technology of normalization, related to constructions of the child as nature and as reproducer of institution as producer of child outcomes, including developmental progress. However, pedagogical

documentation is about what is going on in the pedagogical work and what the child is capable of without an outline of expectations and norms. Another difference between child observation and pedagogical documentation is that the child observation, which adopts a modernist perspective, assumes an objective, external truth that can be recorded and accurately represented. Also, the world is understood as an independently existing universe and knowledge is understood as reflecting or corresponding to the world. Taking on a postmodern perspective, pedagogical documentation is a process of visualization; however, documentation doesn't represent a true reality: it is a social construction. Pedagogues select what is valuable to document because meaning does not come from seeing or observation alone, rather it is constructed by acts of interpretation (Steedman, 1991). When you document you construct a relation between yourself as a pedagogue and children. In this perspective, the practice of documentation cannot be apart from a pedagogue's participation in the process. Documentation represents a choice, a choice among many other choices. Carlina Rinaldi talked about selecting from many possible uncertainties and perspectives, and boldness to see ambiguities. The descriptions, categories and understanding that pedagogues apply to make sense of what is going on are immersed in implied conversations, classifications and categories. To sum up, pedagogues co-construct and co-produce the documentation, as active subjects and participators. Therefore, when pedagogues document children's work, they become co-constructors of children's lives, and pedagogues embody their implied ideas of what they consider as valuable actions in a pedagogical practice. In addition, pedagogues are able to see how they have constructed children and pedagogues, themselves through the documentation. In short, pedagogical documentation contributes to a deepened self-reflexivity and tells us something

about how we have constituted ourselves as pedagogues, as it helps 'telling ourselves a story about ourselves' (Steier, 1991, p.3). From this point of view, documentation can be seen as a narrative of self-reflexivity: a self-reflexivity through which self-definition is constructed. This is because teachers' documentation presents not only children's learning processes, but also the quality of teachers' relationships with children, and quality of their perspectives of children Rinaldi (2005). As an example, when Rinaldi worked with one teacher, Rinaldi asked the teacher if there were any difficulties when making documentation. The teacher said that when she looked at the documentation, she felt like she was looking at a mirror, and felt embarrassed. In some ways, she saw her limitations in the relationship with the child, her own theory and her own point of view through the documentation she made. This also enables the child to become aware of the teacher's perspective.

Therefore, when teachers document they are co-constructors of children's lives, and also embody their implied thoughts of what they think are valuable activities in a pedagogical practice. The documentation shows something about how they construct the child as well as themselves as pedagogues. So, it enables pedagogues to see how they understand themselves and read what is going on in practice, and their own descriptions as pedagogues. For this reason, pedagogues become open for discussion and change for the better relationship with children.

c) *Pedagogical documentation as children's learning processes.* Pedagogical documentation has two aspects: a *process* and *content*. *Content* is material which traces what children are saying and doing, the work of children, and how the pedagogue relates to the children and their work, for example, hand-written notes of what is said and done, audio recordings and video camera recordings, still photographs, computer graphics, children's work

itself including art work. This material enables the pedagogical work to be visible and concrete. The *process* uses this material as a way to reflect upon the pedagogical work. The reflection is done both by the pedagogue alone and by the relationship with others, other pedagogues, pedagogista, children, children's parents, and politicians.

To use pedagogical documentation, the pedagogues try to listen to the children's hypotheses and theories, along with their fantasies. They also try to focus on the children's strategies of learning, meaning making, and their own ways of challenging children's learning processes. For example, Anna, a Swedish pedagogue, starts documenting a project on time and records what is done and what is said. She looks at and analyzes her documentation, reflecting and reinterpreting what is going on, not only among the children but also how she has constructed the children and herself as a pedagogue. She reflects on documentation about how the learning children and pedagogue have been constructed in their own practice, how children construct knowledge and what kind of tools the environment presents for the children's experiment and symbolization. Which activities do children engage in the most? What kind of theories do children have? How can I challenge these theories? How is it possible to extend the thematic work over a longer period and deepen the children's learning processes? Anna challenges herself with these questions. This requires a lot of experimentation, interpretive work, dialogue with other pedagogues so that multiple perspectives can be produced, discussed and confronted. In this way, the process can be a way of problematizing one's own understandings and a way of 'working together across differences' (Ellsworth, 1992, p. 106). In addition, Anna encourages children to revisit what they did before and find new motivation and become more engaged in the project. Documentation on the wall becomes an important way of engaging

parents in the project. For instance, the children ask their parents if they could run in the corridor and then ask their parents to time them. Through the documentation, Anna is also able to discuss her pedagogical work with other pedagogues.

At times, Anna was confused about how she should respond to the children's ideas. For example, the children generated a hypothesis about animals' understanding of time. Instead of saying that animals cannot understand time, Anna chose to treat the children's hypothesis seriously because she wanted children to have an opportunity to explore their own hypothesis. This is a difficult task as pedagogues are so inscribed in a perspective that assumes the pedagogue already knows the answer and requires her to carefully plan what the children should learn.

d) Pedagogical documentation as challenging the dominant discourse. Pedagogical documentation can function as a tool for opening up a critical and reflective practice challenging dominant discourse and constructing counter-discourse, through which we can find alternative pedagogies 'which can both be morally and ethically satisfying, but also aesthetically pleasing' (Steedman, 1991, p. 61). It opens up a possibility for the pedagogue to see his or her subjectivities and practices as socially constructed, and to break the dominant discourse, as it can extend our understanding of who we are and how we have constructed ourselves to be this way (Gore, 1993). Through the pedagogical documentation, we are able to see and ask questions about the image of the child and discourse that are embodied, and are produced, and what rights and position the child has in early childhood institutions. For example, people talk about 'child centeredness', 'taking responsibility for learning', 'to learn how to learn', 'creativity', 'participation', and a 'reflective practice'. However, do they actually saturate the pedagogical

practice? Pedagogical documentation helps us to reflect seriously on if these ideas are just talk or if they are put into practice. Above all, it is a question of gathering insight into the possibility of seeing, talking and acting in a different way, and hence cross boundaries. Pedagogical documentation visualizes and reflects how we have constructed the child by providing learning process. This learning process can be a starting point for the reconstruction of the pedagogical work.

e) The process of documentation can never be neutral. Processes of observation and documentation are never objective and not neutral. According to Rinaldi (2005), point of view is always subjective. Therefore observation is always partial. This is however, considered as a strength. Fabbri (1990) stated that we are scared by subjectivity because it takes responsibilities. In our ordinary understandings, children have already been placed into pre-defined categories. Documentation always holds our own subjective feelings, wishes, and values. This should not be seen as something negative but as positive (Maturana, 1991) and try to understand how it enters into processes of documentation. Documentation is a tool for self-reflection; we can challenge and offer resistance towards the perspective of observation as independent of ourselves as observers and of our own processes of construction and implied conversation. Therefore, the pedagogue should regard herself as responsible for the constructions which she makes (Glaserfeld, 1991). This is a form of reciprocal exchange which can result in many different readings and presupposing seeing, listening, and challenging. Rinaldi (2005) explained about this real issue in documentation:

When you take a picture or you make a document, in reality you don't document the child but your knowledge, your concept, your idea. So it's more visible – your limits and your vision about the child. You show not who that child is, but the relationship and the quality of your relationship, and the quality of your looking at him or her...

And that is also ethical, because thanks to documentation the child also becomes aware of the teacher's perspective. It is more honest and more visible, because it's always in terms of expectation and valuing. So I can see what you value in my learning processes. I don't see what I do, because what I do is something that I have to develop in my learning processes. I see what you see about my doing, my thinking (p. 196).

f) Pedagogical documentation as an enterprise. Documentation has potential for taking in multiple perspectives. If documentation encourages other constructions and perspectives, it has the potential to expose the embodied character of knowledge construction, and functions as an emancipatory practice. However, there are risks. The classifications and categories that we apply also function as tools for inclusion and exclusion. We can place children and their actions into categories of normal/non-normal. We can make the other into the same. So if we are not aware, documentation may become a practice for exercising control and power. Considering these dangers, we always have to create questions regarding what right we have to interpret and document children's activities and what is ethically legitimated. Faced by these ethical issues, we look for answers in the concept of an ethics of an encounter. It is ethics, which comes from respect for each child and recognition of difference and multiplicity, and which struggles to stay away from making the other into the same as oneself. The ability of listening and hearing what the other is saying, and taking it seriously, is related to an ethics of an encounter. As Bauman says:

Taking pictures becomes a substitute for seeing. Of course, you have to look in order to direct your lens to the desired object... But looking is not seeing. Seeing is a human function, one of the greatest gifts with which man is endowed; it requires activity, inner openness, interests, patience, and concentration. Today a snapshot (the aggressive expression is significant) means essentially to transform the act of seeing into an object (1995, p. 132-134).

Ethics becomes a factor because we must take responsibility for our acts, as well as the

acts of observing, and our choices. Like Bauman we would argue we are ineluctably moral beings, in that 'we are faced with the challenge of the other, which is the challenge of responsibility for the other, a condition of *being-for*' (1995, p. 1).

2.8. *Project rather than Curriculum*

In Reggio Emilia, they prefer to use term 'project' rather than 'curriculum' because of the following reasons. Rinaldi (2005) explains rationale of term 'project':

- (a) Learning does not proceed in a linear way, determined and deterministic, by progressive and predictable stages, but rather is constructed through contemporaneous advances, standstills and 'retreats' that take many directions;
- (b) The construction of knowledge is a group process. Each individual is nurtured by the hypotheses and theories of others, and by conflicts with others, and advances by co-constructing pieces of knowledge with others through a process of confirmation and disagreement. Above all, conflict and disturbance force us to constantly revise our interpretive models and theories on reality, and this is true for both children and adults;
- (c) Children produce their own theories, important theories by which they are inspired. They have their own values and meanings, as well as their own timing which both has provides meaning, and which directs the course of their processes. The timing must be understood, respected and supported (p. 131-132).

Therefore, the term 'curriculum' is not suitable for representing complex and multiple strategies that are essential for carrying on children's knowledge-building processes. A plan means predicting and implementing a sequence of coordinated operation. However, a strategy is not based completely on the initial hypotheses, so that the following decisions and choices are made in relation to the development of the work and of the objectives themselves. Strategy includes the ability to take action into the area of uncertainty and requires listening, flexibility and curiosity. Strategy is a trait of the way children precede, along with an authentic act of knowledge-building and creativity. Therefore, to define complex situations and describe the

multiple levels of action, which carried out in the dialogue between children and adults, the term 'project' and *progettazione* are appropriate. Above all, making hypotheses is a way to enhance the possibilities for interacting and welcoming the unexpected.

Progettazione is also way of thinking, strategy for creating relations, a practice of observation-interpretation-documentation. This is based on the assumption that children have a mastery of many languages and appreciation that other people can share their own different beliefs and theories. Children enrich and challenge their theories through dialogue with others and the environment surrounding them. Therefore, this type of curriculum should be defined as 'contextual'. The context includes both families and the community. For instance, children who grow up together at school share their different ideas and inspire each other to express their perspectives. They consider other people's ideas as an integral part for their learning. Both teachers and children document their activities and learning through the process of investigation, and this documentation (photo, videos, notes, recording, etc.) facilitates reflection and self-reflection on children's and teachers' learning processes and the professional development of teachers (Rinaldi, 2005).

2.9. Summary

In chapter 2, I reviewed the important tenets of the Reggio Emilia approach, in particular, (a) the image of the child and childhood; (b) the child-teacher relationship; (c) the relation between children (d) art in Reggio Emilia (e) the development of symbolic thought and representational abilities (f) the pedagogy of listening (g) pedagogical documentation, and (h) project rather than curriculum (Gandini, Hill, Cadwell, & Schwall, 2005, Edwards, Gandini, & Forman, 1998; Hendrick, 1997; Stegelin, 2001) since these theories are strongly related to the

study of children's knowledge-building processes through the interactions with art.

Above all, in the Reggio Emilia approach, children make authentic choices and construct knowledge based on the emergent curriculum. In the emergent curriculum, negotiation is the main way of unfolding projects and authentic children's ideas. While children are engaged in a project work, children co-construct their knowledge within their social group. In this regard, a project plays an important role to promote negotiated learning. Projects usually consist of two, three, or four children since working in small groups helps children to exchange their ideas. Through the project work, children are able to develop a deeper understanding of a topic by presenting multiple perspectives of ideas in various ways.

Moreover, in the Reggio Emilia schools, children are provided with many media (art tools and materials) to enhance and represent their learning. By the use of various materials, children's thinking becomes visible and expressive. In the Reggio Emilia approach, the visual arts are integrated into the work as additional languages available to young children to help them explore and express understandings of the world. In addition, the Reggio Emilia schools offer an "Atelier" or studio to provide the space and resources essential for a high-quality art environment. An Atelier is filled with attractive art materials and tools which are accessible to the children. Through the aesthetic inspiration from rich materials and environment of the Atelier, children become familiar with using graphic languages. Each Atelier has an "Atelierista", a trained art educator in charge of the Atelier. With this help Atelierista, children are able to represent their creative ideas through expressive languages.

Lastly, Reggio Emilia educators emphasize the importance of constructing children's knowledge in multiple ways, using symbolic languages such as visual arts, dance, drama, play

and music. Children's knowledge development can be more enhanced when these multiple media are provided. Through the experiences of using a variety of media, children begin to understand each affordance of each medium. It is essential for children to acquire knowledge of materials, gain competence with them, and use them in a variety of ways. Then, materials can be modified and transformed to become expressive languages representing children's learning.

In chapter 3, I will explore how the Reggio Emilia principles are embodied in children's learning regarding the use of art as a learning and representation tool in one Canadian childcare center classroom, and introduce the methodology for this study.

CHAPTER 3

Methodology

Introduction

The purpose of this study is to explore how children construct their knowledge using art as a learning and knowledge representation tool in the course of carrying out a project. In particular, this study was conducted in a Reggio inspired Canadian child care classroom in order to examine how the fundamental principles of the Reggio Emilia are implemented within a Canadian context. The Reggio Emilia approach cannot be directly applied to other cultural contexts. Therefore, when one tries to implement this approach to one's cultural context, he or she has to modify for its successful implementation (Edwads et al., 1993).

Qualitative case study methodology was employed to investigate children's knowledge-building processes and their knowledge representation. The study focused on the in-depth study of six children's activities during a '*Shades of Pink*' project. For this study, the process of children's knowledge-building was documented. This case study was 'instrumental' (Stake, 1995) because it was the means for accomplishing holistic understanding of the children's learning process in the Reggio Emilia approach inspired classroom. This chapter discusses research questions, research design, research procedure, context, data collection, data analysis, trustworthiness, and ethics. The central research questions that guided this study, are:

- (1) How do children construct knowledge in a school that is inspired by the Reggio Emilia approach?
- (2) How do children interact with media (art tools and materials) during the project?

(3) What kinds of choices do they make with media (e.g., words, drawings, paintings, sculptures, etc.) in order to represent their ideas in the project?

3.1. Research Design

For this study, a qualitative research approach was employed to explore a holistic picture of children's knowledge-building processes, in a Reggio Emilia inspired classroom. Particularly, the case study method was employed to examine how children construct knowledge using art as a representation tool. As the researcher, I looked at one particular case in which the Reggio Emilia approach has been adopted and implemented within a Canadian context. I utilized qualitative data collection strategies, such as in-depth observations, development of thick descriptions and rich documentation, and detailed review of artifacts (Bodgen & Biklen, 1998).

Qualitative case study methodology for the study of children and their experiences are described in *The Handbook of Research on the Education of Young Children*. Interpretive researchers make sense of their observations through thick descriptions and narratives. Therefore, case studies have the qualities of being accessible and meaningful: 'when reading a good case study, we get a chance to experience the world through the eyes of the author as well as the subject of the study'. (Walsh, Tobin & Graue, 1993, p. 468). For this study, a pedagogical documentation of a project titled *Shades of Pink*, describes the process and content of children's learning presented as visual evidence in chapter 4. In this sense, this methodology provides early childhood educators with a clear picture of a child's learning process in the Reggio inspired classroom environment. The following characteristics explain qualitative inquiry:

First, "qualitative research is an umbrella concept covering several forms of inquiry that

help us understand and explain the meaning of social phenomena with as little disruption of the natural setting as possible” (Merriam, 1998, p.6). In this study, children’s activities during the ‘*Shades of Pink*’ project were observed in a natural setting.

A second feature of qualitative research is that “the researcher is the primary instrument for data collection and analysis” (Merriam, 1998, p.7). For this study, data was collected through the researcher’s observation of documentation of children’s work and was interpreted by the researcher.

Third, the product of qualitative study is richly descriptive. Words, photos, drawings, and paintings were used to help understand the children’s learning process. As well, each participant’s own words, citations from documents, and the teacher’s reflection and pictures were collected and described to support the findings of the study (Merriam, 1998).

Last, qualitative research is carried out through fieldwork. “The researcher must physically go to the people, setting, site, and institution in order to observe behavior in its natural setting” (Merriam, 1998, p.7). In this study, the researcher went to a childcare center that implements the Reggio Emilia Approach in order to observe children’s learning process.

In particular, a case study research approach was used to develop an in-depth understanding of children’s learning experiences through the project, *Shades of Pink*. This case study shows children knowledge-building processes while they were engaged in the ‘*Shades of Pink*’ project. A case study is appropriate when the objective of the study is “to develop a better understanding of the dynamics of a program” (Merriam, 1998, p. 39). In addition, the case study can further be defined by its special features like its descriptive nature (Merriam, 1998). A descriptive method captures an entire picture of what happens within its context and provides a

rich description of the experience. For these reasons, I chose a single case study design.

3.2. Procedure

To conduct this study, I researched childcare centers and preschools in the Lower Mainland of British Columbia, which were currently adopting the Reggio Emilia approach in their practices. I sent an initial letter of request to one of three childcare centers to invite the coordinator to participate in this research. Once the coordinator agreed to participate, I asked her to distribute an initial letter of contact to the parents and participants of the study so that I could proceed with my research. An initial letter of contact provides a description of the purpose of the study and a letter of consent. After I obtained permission from all participants to conduct this research, I made regular visits to the childcare center classroom twice a week for a six week period from mid- October to the beginning of December of 2005 and six more visits were made in January, March, and April of 2006. The observations were focused on the interactions that occurred between one teacher and her students, between the children, and finally, on children's artwork representing the children's thoughts while they had engaged in a '*Shades of Pink*' project. As the researcher, I recorded field notes that included descriptions of both verbal and non-verbal interactions; documented all dialogues between the teacher and children and among children; collected documentation of the project; and took pictures of children at work and children's art. Mainly, the children's *Shades of Pink* project was carried out from 10:30 a.m. to 12:00 p.m. every day.

3.3. Context

Given that the purpose of this case study was to illuminate children's understandings and learning processes, it was important to choose a site in which children had the freedom to

engage at length in creative processes. This specific childcare center was chosen because this center has been practicing the Reggio Emilia approach. This Reggio inspired childcare center is located in the Lower Mainland of British Columbia, Canada, and is a college laboratory school.

3.4. Research Participants

The class consisted of 20 children. Only six of these children who were engaged in the project, *Shades of Pink*, participated in the research itself. There were four girls and two boys whose work became part of the data collected. The six children are all four years old. The children voluntarily participated in this study with parental approval. Parental approval was sought for both observation and for audio-taping the children's conversations. In addition, their teacher consented to be part of the study.

Convenience sampling is widely used in educational qualitative studies to help researchers find appropriate participants in a timely manner (Gall, Gall & Borg, 2003). The inclusion criteria for this study's participants were: (a) children within a classroom of four-year-olds in a childcare center, (b) children who actively participate in a project together, and (c) children whose parents submitted consent forms to voluntarily involve their children in this research. Based on the inclusion criteria, participants were selected based on students who were actively involved in the *'Shades of Pink'* project. Five girls and one boy were participating in the project.

3.5. The Role of the Researcher

The main role of the researcher was to observe the children and their teacher as they engaged in the project, and document documentation panels created by the teacher. However, the researcher also participated in experimentation with children when requested to do so, and

had ongoing conversations with the teacher about the project before and after the activities each day.

3.6. Data Collection

Before the formal commencement of the study, and in order to create a comfortable emotional and physical setting for the participants the researcher spent time, two visits for two hours each time, with the participants interacting with them. According to Fine and Sandstrom (1988), informal arrangements with individuals enable the researcher to establish friendships, which lessens the danger of methodological problems such as the 'expectancy effect'. In addition, the researcher met with the teacher prior to the observation visit so that the teacher could provide the researcher with information about regular classroom routines.

Data sources are 1) field notes, 2) observations, 3) pedagogical documentation which includes conversations between the teacher and children and among children, children's artworks, photos of children at work, and finally teacher's reflections and comments.

3.6.1. Field notes. Daily field notes were recorded. Field notes are "the written account of what the researcher hears, sees, experiences, and thinks in the course of collecting and reflecting on the data in a qualitative study" (Bogdan & Biklen, 1998, pp. 107-108). The field notes for this study included comments and reflections of the researcher. Descriptive field notes recorded the details of what was occurring in the field (Bogdan & Biklen, 1998). The researcher's comments are also included as a part of reflective field notes (Bogdan & Biklen, 1998). These comments included the researcher's thoughts, feelings, ideas and impressions during the process of the project.

3.6.2. Observations. Observation was the main process used to collect the data. Stake

(1995) stated that during observation, the qualitative case study researcher keeps a good record of events to provide a relatively incontestable description for further analysis and ultimate reporting (p. 62). Six children and one teacher participated in this research over a period of six weeks from mid- October to the beginning of December of 2005 and six more visits were made in January, March, and April of 2006. These observations were limited to a one and half hour time frame each day. The observations were mostly conducted from 10:30 a.m. to 12:00 p.m. Observations were guided by the research questions to examine further understanding of the case (Stake, 1995). First, I examined the Reggio Emilia components as they were being applied in this childcare center. Then, observations were focused on the children's learning process in the course of performing the project, '*Shades of Pink*'. In order to record children's knowledge construction processes, I audio taped children's verbal expression of their ideas and took pictures of their graphic representations. Photographs were taken during the project to provide a visual record of the setting, artworks and participants in the activities. The research questions guided the initial phase of data collection and analysis:

The original research question is a directive that leads the researcher immediately to examine specific performance, the site where events are occurring, documents, people acting, or informants to interview. It gets the researcher started and helps him or her to stay focused throughout the research project (Strauss & Corbin, 1990, p.39).

3.6.3. Documentation. Teacher's pedagogical documentation is one of the main traits of the Reggio Emilia Approach. In Reggio Emilia, the teacher records children's conversations, takes pictures of children's work and reflects on the children's ongoing processes of learning and discovery (Vecchi, 1998). When one walks into the Reggio Emilia school, they will see tape-recorders recording children's conversation in every section of the classroom. In this study,

I witnessed the teacher recording every moment of the project and taking pictures of children's work in process. The teacher made documentation panels composed of children's drawings, paintings, thoughts, conversations and the teachers' comments and reflections. I obtained permission to use the teacher's pedagogical documentation panels as data for this study. Thus, the teacher's documentation became one of the main sources of data.

Data sources were used to discover and portray the multiple views of the phenomenon of the children's learning experiences in the Reggio Emilia context (Stake, 1995). As well, the data is triangulated to secure the reliability of this study by using various sources.

3.7. Unfolding of the Project

The project was carried out during the free-choice play time. It took place at the art centre, the library and in the staff room, where children mostly worked on their projects.

The '*Shades of Pink*' project was initiated when a teacher observed that children were displaying interest in paints and painting. The children were attracted to the paint table on a regular basis; and they used the paints to express their imaginations. Due to the fact that the theme of the project naturally emerged from children's every day routine activities, children got easily involved in the project. Topal and Gandini (1999) stress that children own a natural openness to the potential of materials. When adults become aware of this procedure, they find ways to watch and listen to children. Through the teacher's attentive listening to children, children were able to develop their interests of paints into the learning of '*Shades of Pink*'.

The following is a sequence of activities in the '*Shades of Pink*' project which was sorted by four episodes. This will enable the reader to have a simple guide for the actual chronological order of procedures. These four episodes were created based on the teacher's

documentation.

	Episodes
1.	Shades of Pink
2.	Discovering Artists through Shades-Hand to Hand
3.	Arts and Artists
4.	Exploring Poppies

The four episodes are described according to cycles of Symbolization.

The concept of cycles of symbolization was first introduced in the *Long Jump project* in Reggio. *The City in the Snow* (Edward et al., 1998) project also used this concept as a guide to enhance the reflexivity of children as they drew and redrew their current assumptions, ideas, and theories. I used this concept as a map to describe the mental course of how children learn to verbally review and discuss their ideas, draw their present understanding, make graphic representations of their discoveries, and develop graphic languages to communicate their knowledge to others. These cycles repeat numerous times in a project. A single cycle is defined by a common problem. Within a single cycle the children confront and discuss a problem using a variety of symbol systems, some invented, some conventional. Their motivation for using and inventing symbols is to get a better understanding of something, and to clearly present understanding to others (Forman & Gandini, 1993).

1.0 Shades of Pink

1.1 The Field Experience

1.2 Creating Shades of Pink

- 1.3 Impatiens
- 1.4 Experimenting Together
- 1.5 Exploring the Sun and the Wind Theory
- 1.6 Wondering and Making Meaning Together

- 2.0 Discovering Artists through Shades-Hand to Hand
 - 2.1 Visit to the Library
 - 2.2 Attempting to Copy Favorite Drawings of Artists
 - 2.3 Using Monet to Understand the Effect of Light
 - 2.4 Talking about Their Favorite Paintings
 - 2.5 Conflict of Thoughts on Monet's Painting
 - 2.6 Testing Their Hypothesis
 - 2.7 Monet Collaborative Drawing
 - 2.8 Revisiting the Documentation

- 3.0 Arts and Artists
 - 3.1 Visit to the Vancouver Art Gallery
 - 3.2 Going Back to Monet
 - 3.3 Visit to the Art Studio

- 4.0 Exploring Poppies
 - 4.1 Examining Poppies
 - 4.2 Drawing and Painting Poppies
 - 4.3 Visit from an Artist
 - 4.4 The Second Drawing Representation of Monet Painting
 - 4.5 Painting Monet's painting for the First Time
 - 4.6 Representing Poppies with Different Art Media

3.8. *Data Analysis*

Date analysis and data collection were intertwined from the beginning of this qualitative research process. Stake (1995) stated that there is no particular moment when data analysis begins. Analysis is a matter of giving meaning to first impressions as well as to final compilations (p.71).

For this study, data was analyzed using an interpretive analysis. As Gall, Gall and Borg (2003) defined, "an interpretive analysis is the process of examining case study data closely in order to find constructs, themes, and patterns that can be used to describe and explain the

phenomenon being studied” (p. 453). This approach is the most appropriate to the purpose of this study; namely, examining children’s graphic representations to investigate their learning experiences through art activities.

According to Hubbard and Power (1993), data analysis is a way of seeing and then seeing again. It is the process of bringing order, structure, and meaning to the data, in order to discover what is underneath the surface of the classroom. To explain the data collected, you must have conversations with the data, question data further, and find newer meanings and different rhythms. By doing this, you are able to explain the picture of learning with a deeper understanding.

Moreover, Bogdan and Biklen (1998) suggested that after several sets of descriptive field notes have been recorded, the researcher should stop and record “reflective field notes.” For the reflective field notes, the analytic memo was used. The analytic memo is a major strategy to discover “what has occurred in the research process, what has been learned, the insights this provides, and leads it may suggest for future action” (Ely et al., 1991, p. 80). Bogdan and Biklen (1998) pointed out that emerging themes, connections between pieces of data, additional ideas, and thoughts are recorded in memos. In addition, “reflective field notes reveal the researcher’s opinions, beliefs, attitudes, and biases. The researcher uses these reflective field notes in a regular and periodic manner so that the raw data could “cook” and then provide emerging themes.

The following protocols guide the data analysis. First, children’s verbal and nonverbal interactions during activities were transcribed. Second, children’s graphic representations (e.g., writings, drawings, paintings, sculptures, etc) were examined along with their interpretations.

Third, documentation on the wall was explored. Finally, the teacher's reflection and comments were analyzed and interpreted.

3.9. Trustworthiness

During the data collection, analysis, and interpretation process, the researcher used the qualitative research strategies to make sure of the trustworthiness of the research (Guba & Lincoln, 1982). Being trustworthy as a qualitative researcher means at the least that the processes of the research are carried out fairly and that the products represent as closely as possible the experiences of the people who are studied (Ely et.al., 1991, p.93). The researcher used different methods and multiple sources to increase the credibility of this study for triangulation. The researcher collected data through observations, field notes, children's works and documentation. In addition, the researcher acquired different interpretations of children's project from teacher's reflections and comments. Photography, recorded conversations, and collections of children's works also play important roles in supporting the credibility of this research. The characteristics of pedagogical documentation such as written transcriptions, transcriptions of children's words, photos, children's actual works, and teacher's reflections, will be described in chapter 4. This will present the procedure of children' knowledge-building processes as a result of this research, thereby supporting the trustworthiness of this research.

3.10. Ethics

3.10.1. Providing Exact Information about the Research. The researcher sent consent forms to participants' parents to obtain written permission for this study. In these consent forms, the researcher described the research objective and methodology so that the participants and their parents fully understood the purpose of this study.

3.10.2. *Maintaining Confidentiality.* To maintain confidentiality, pseudonyms were used in all of the reported data. Moreover, any verbal episodes during observations that could threaten participants' privacy were not reported in the research report.

In addition, all data was stored in a locked cabinet in the researcher's home. All computer files associated with data were password-protected, and all names are coded. The data was available only to the researcher and her supervisory committee.

3.10.3. *Providing Freedom from Harm.* The participants were voluntarily participating in this study. In addition, the participants had the right to withdraw at any time during the research. This research was conducted in a manner that allowed participants' to keep interruptions in their daily lives to a minimum. Therefore, the daily routines were not altered for this research project.

3.11. *Summary*

The process and representation of children's knowledge-building were the main focus for the proposed study. Through an instrumental collective case study methodology, the phenomenon of children's knowledge-building was explored. One particular Reggio inspired classroom was "naturally observed," and children's learning experiences through a project was investigated. The researcher observed and documented children's knowledge-building processes while they were engaged in the project, *Shades of pink*. Through in-depth observations and documentation, the researcher was able to investigate children's knowledge construction through the project in this Reggio inspired classroom. The ultimate goal for this qualitative study was to illuminate our understanding of children's knowledge-building processes and

representation as inspired by the Reggio Emilia approach and implemented in a Canadian context.

Chapter 4 will present the procedures and representations of children's knowledge-building, and the results of this study through the pedagogical documentation of these children's project, *Shades of Pink*.

CHAPTER 4

Result

Introduction

The '*Shades of Pink*' project describes how six four-year-old children and their teacher co-constructed knowledge while they were engaged in a project and represented their knowledge using art as a tool. Through documenting this project, *Shades of Pink*, children's own ideas and theories are discovered; children's discussions are traced; and children's multiple forms of representations are presented.

The following is the sequence of activities of the '*Shades of Pink*' project. These activities were sorted into four episodes. These episodes are listed in chronological order.

	Episodes
1.	Shades of Pink
2.	Discovering Artists through Shades-Hand to Hand
3.	Arts and Artists
4.	Exploring Poppies

To describe this project, I used a model called 'cycles of symbolization'. The concept of 'cycles of symbolization' was first used in the *Long Jump* project in Reggio. *The City in the Snow* (Edward et al., 1998) project also used this concept as a guide to enhance the reflexivity of children as they drew and redrew their current assumptions, ideas, and theories. Using symbolization not only helps children to represent what they already know, but it is also used to

reflect and question what they say they know. In this sense, using cycles of symbolization to describe the project, *Shades of Pink*, is an effective way to explore and examine the processes of children's knowledge-building.

The Unfolding of the Project, Shades of Pink

4.1. The Initiating Context

The project, '*Shades of Pink*', started with one teacher's observation of children at work. Through observation, the teacher noticed that children were interested in painting, and children regularly interacted with paints and brushes. The teacher valued this interest and developed the children's interest into meaningful learning. The participants for this project included a group of children and a teacher. Most projects in this Reggio inspired childcare center are carried out in small groups because small group work promotes intense learning and exchanging of ideas, as well as collaboration between adult-parent, teachers, and the pedagogista (Edwards, et al., 1998).

4.2. The Beginning

Initially, the children seemed very curious about paints and painting. Children explored different kinds of brushes that varied in size, length and width. Some children made a variety of marks, some put layer upon layer of paint, and some children made representational paintings while others spent the time mixing paints and creating new colors. While children were exploring paints and brushes, the teacher recognized the importance of the relationship between brushes and brushstrokes. She provided a small group of children with black paint, white paper and thin brushes. The children examined the size of the brush they were given, the bristles and the handle. The children created 'fat marks', 'mud foot prints', 'elephant prints, and 'dots'. The

children walked their brush on the paper to create footprints; they twirled their brushes around to create elephant prints. They painted long fat lines, long thin lines, short fat lines, short thin lines and they connected the lines. The children spent a great deal of time exploring brush strokes. The teacher was curious on whether or not the children were making a connection between the size of the brush and the strokes they were making. Most of the strokes the children were making were straight lines, dots and circles. The children did not seem to be exploring squiggles, zigzag or swirls.

The next day, the children explored with the same brushes from the previous day. One child asked for some yellow paint instead of black. The children continued to explore fat lines and thin lines, different size of dots and footprints. There was not much difference in the drawing compared to the drawing from the previous day. The teacher was challenged by how she could help the children to develop these encounters and explorations into meaningful learning.

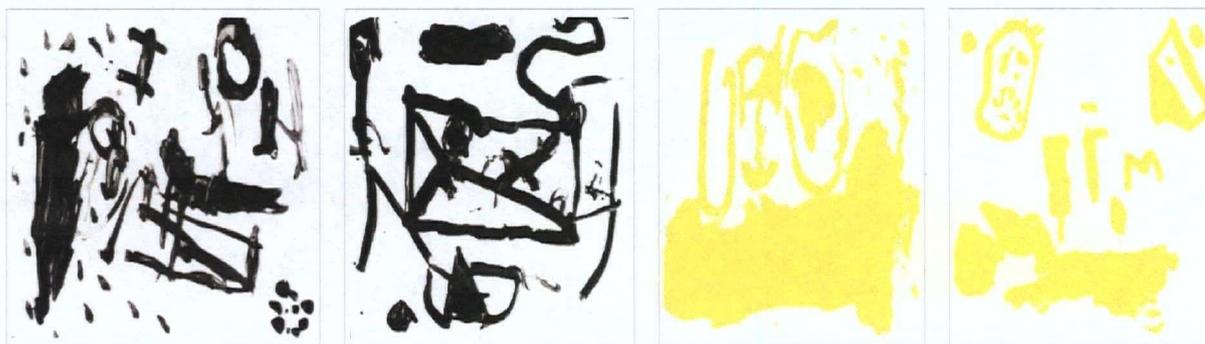


Figure 4.1. The children explore fat lines and thin lines, different sizes of dots and footprints with yellow and black paints, and brushes.

4.3. The Need for Stimulation

4.3.1. Exploring Red. The children's interests in dots and footprints shifted to mixing colors since the teacher had introduced the idea of texture to promote the children's interest in

painting. When the children displayed confidence using brushes and mixing colors, the teacher invited an early childhood education instructor from the college, Jill (pseudonym) to observe the children. Jill was having ongoing conversations with the teacher about this project. Jill presented the children with a bag full of red items because the color ‘Red’ was what children wanted to use and had asked to explore.

The children excitedly examined the items that she pulled out of the bag. Jill drew their attention to the color of the item by asking them “what color is it?” and “can we name this color?” These questions encouraged the children to closely examine the color as well as the properties of the material. Children observed, touched, felt materials and played with them.

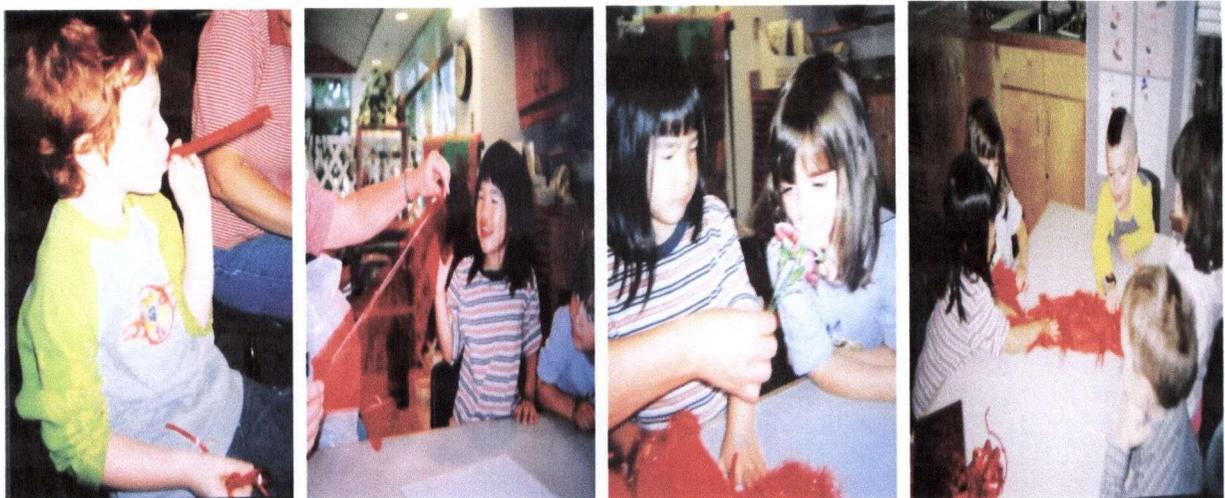


Figure 4.2. The children are exploring various red items by first noticing, then touching them.

After the exploration, the children spontaneously came up with colors like ‘Sparkly Red’, ‘Diamond Red’, ‘Shiny Red’, ‘Stretchy Red’, ‘Softy Red’, ‘Licorice Red’ and ‘Raspberry Red’. The children were very involved in creating names and comparing the differences between the materials.

4.3.2. *Looking for Red.* Once the children had spent a great deal of time exploring various shades and textures of the color *Red* with Jill, they decided to go out and look for the color red around the childcare center. The children became more attentive to their normal environment and excited when they found things that contained the color red. The “look for red” experience served children to become more aware of various textures and shades of red.



Figure 4.3. The children are looking for the color red around the childcare center.

4.3.3. *Painting the Red.* Once the children had differentiated between the various reds, they made paints that looked like some of the reds they had found. At this point, the teacher realized that they did not have the knowledge to create light shades or dark shades of the red. The children’s attention was drawn to the texture of some of the red items. When the children

tried to create the same red with red items by painting, they realized that a repetition of a mark can create texture.

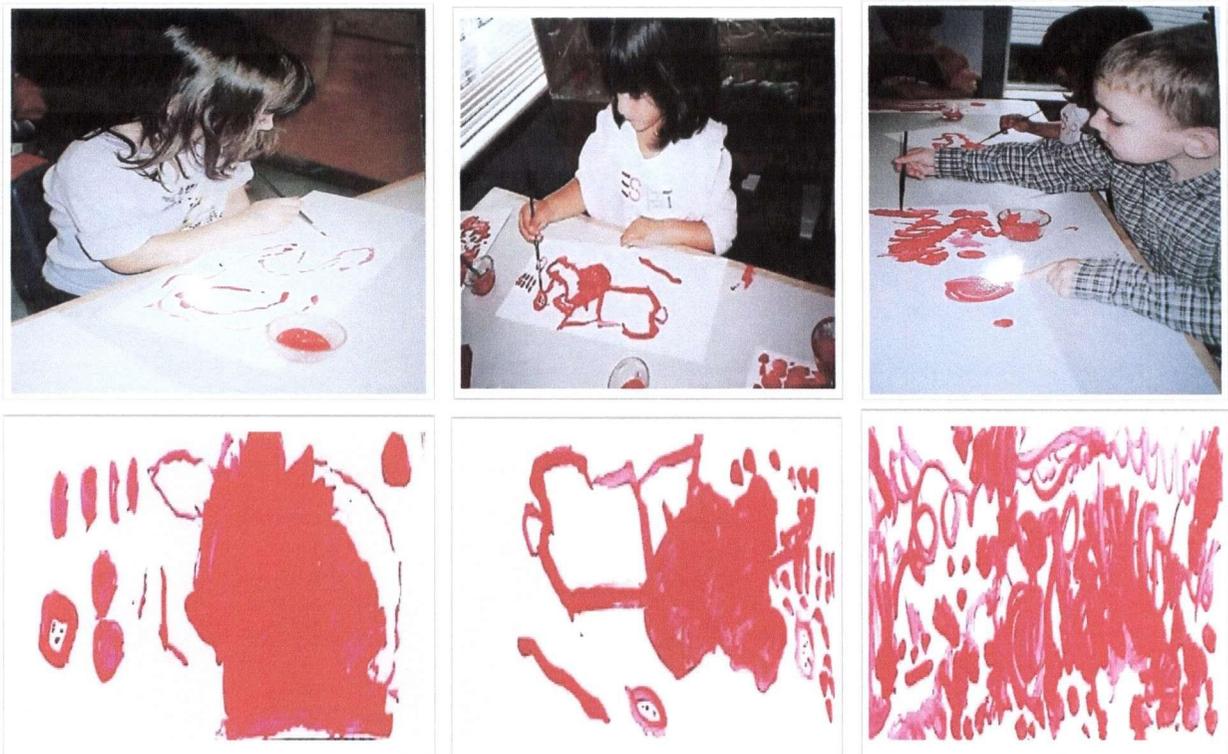


Figure 4.4. The children are creating shades of red.

4.4. Episode 1. Shades of Pink

4.4.1. *Cycle One: The Field Experience.* As the children continued to explore colors, they asked for pink paint. The teacher asked children what colors they might use to create the color pink. Lana quickly came up with “White and Red”. To provide an experience of creating the color pink, the teacher took the children on a walk to look for something pink. As the teacher and the children were walking, the children spotted some ‘purply pink’ flowers. They took some of the flowers to a nearby picnic table, and they examined and compared the colors of the flowers:



‘There’s orange in there.’
‘It’s purply pink.’
‘Purplish pink.’
‘Purplish orangish pink.’
‘This is dark pink.’
‘Pinkish pink.’

As the children were observing the flowers, they were trying to think of different names for the colors. As one child suggested a name, the next one was trying to come up with a name that was similar yet different. For example, adding the “ish” to a colour helped the children create a new colour. Thinking of different names for the colors turned into a verbal rhyming game for the children.

4.4.2. Cycle Two: Creating Shades of Pink. The observation of the pink flowers helped the children to more clearly understand the different shades of pink. They explored the shades using paints. Also, children were able to distinguish the different shades between the flowers. For example, children recognized a mix of purple and pink in the first flower and the dark pink in the second flower. As the children tried to create shades to match the flower, they became interested in finding other pink flowers to examine. They were beginning to identify fine distinctions between the shades. At this point, the teacher provided each child with an eyedropper to measure paints. Children made an effort to make exact shades of flowers with the help of the eyedropper.

The children put drops of white and red and then mixed them to create the “light pink” of the flower. The children were very serious as they put together white and red, using their eyedropper to create the right color. As they did this, the children continuously compared the flower with the color they created. The children showed excitement as they worked to create

their color matches. They also demonstrated working as a group and helped each other by sharing their ideas.



Figures 4.5. The children are creating pink shades to match the flower.

As the children were exploring different shades of pink, they exchanged their thoughts and information. For example, the children discovered that if you add more of the color white it gets lighter and if you add more red it gets darker:

Olin: Mine is turning the same color

Lana: it's not working (*disappointingly*).

Olin: After I added lots of red you mix white to make this color

Silvia: When you add more red it is way darker.

Michelle: Dark pink is more red than white

Jade: When you add more red, it's getting darker.

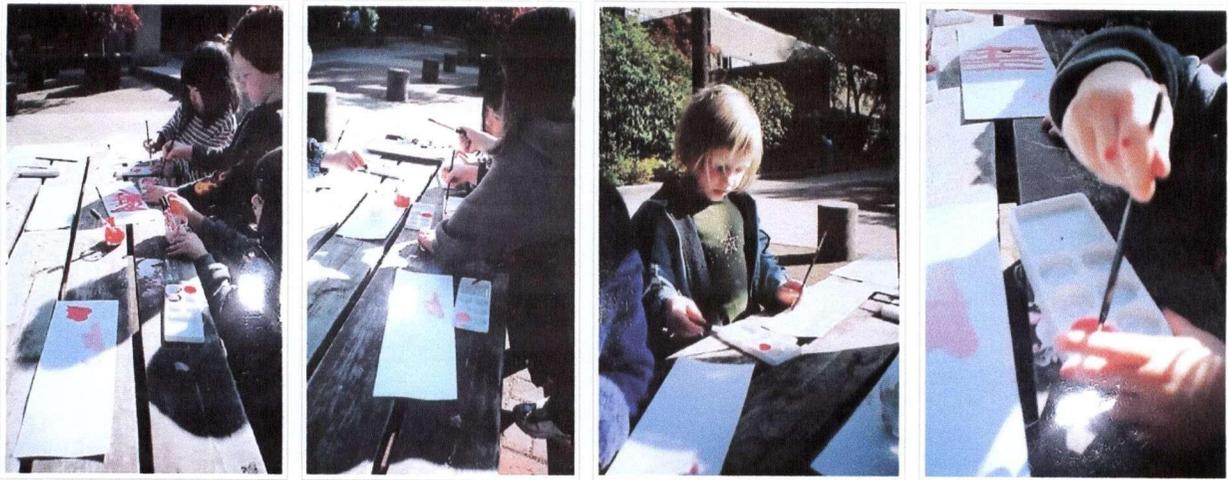
Olin: I made the color of our flower!

Then the children started comparing and giving their pink a name.

Michelle: Pinkish is like a pig.

Lana: It's light pink.

their color matches. They also demonstrated working as a group and helped each other by sharing their ideas.



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Silvia: When you add more red it is way darker.
Michelle: Dark pink is more red than white
Jade: When you add more red, it's getting darker.
Olin: I made the color of our flower!

Then the children started comparing and giving their pink a name.

- Michelle:* Pinkish is like a pig.
Lana: It's light pink.

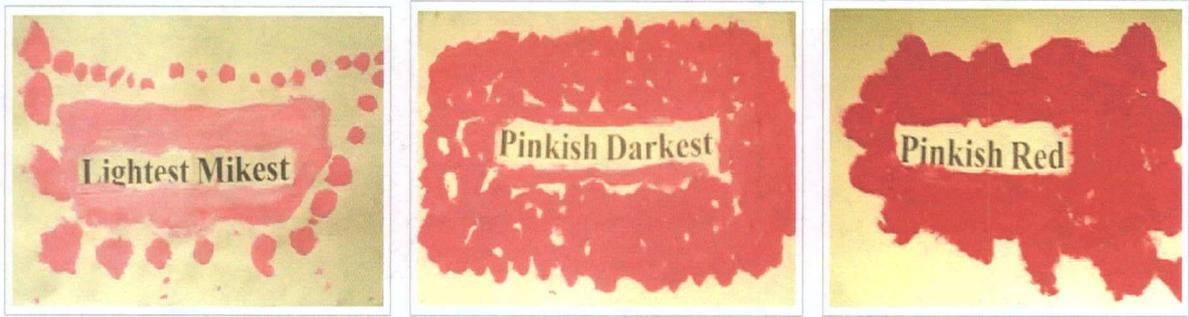


Figure 4.6. The names of pink shades and color, the children created: lightest mikest, pinkish darkest, and pinkish red.

The children worked on the concept of light and dark, creating a variety of shades using the same two colors, red and white. In order for the children to create a color that was similar to the flower, they had to be aware of how to make a shade lighter and how to make it darker. Through this exploration, children learned to share their paints as well as their knowledge on how to create these shades.

As the children practiced their skills at creating shades to match the flower, they were excited to find other pink flowers with which to work.

4.4.3. *Cycle Three: Impatiens.* The children's next attempt to create shades of pink started when children found a bunch of bright pink Impatiens. The teacher and children



discussed the differences in the shade of these flowers compared to the shade of the flowers from the previous day. The children pointed out that these flowers were darker than the other flowers and that they would have to mix more red paint rather than white to create their color.

The teacher provided the children with white and red paint, white paper, brushes and palettes to mix their paint. The children sat on the ground close to the flowers and they got busy mixing their colors. A bit of red and a bit of white and then a little bit more of red and then white again. As children mixed their colors, they checked their shades and hues with the flower to see if they needed to add any more of the colors. As they were comparing their colors they seemed quite aware of what color they should be adding. The children seemed quite fascinated with creating various shades and tried to reach the perfect color.



Figure 4.7. The children created various shades of pink to make the right shades for Impatiens.

Once the children were satisfied with their color, they were encouraged to look at the shape of the flowers and paint them on their paper. The children described the flowers only with pink paints. Then, the children compared the real flowers with their paintings that they had just created.

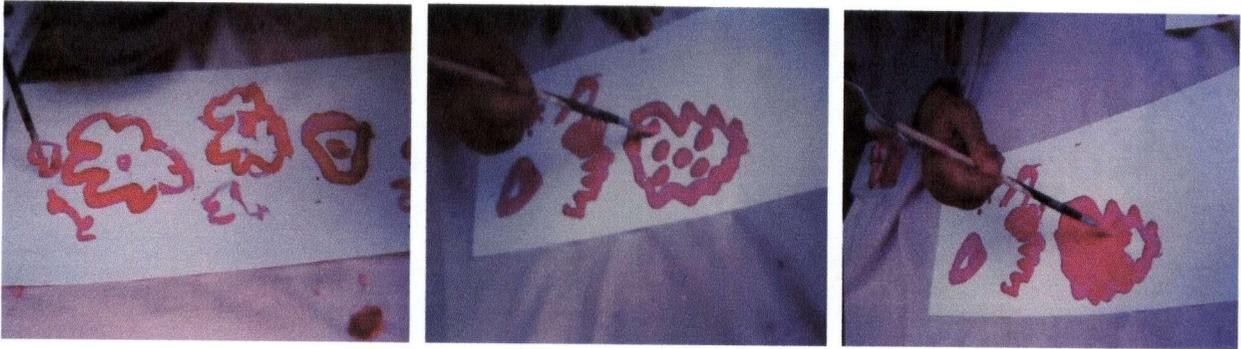


Figure 4.8. The children are painting flowers using only with pink paints.

The next day, the teacher and children had a meeting. The children looked at their paintings from the previous day and all the different colors they had created. The teacher asked the children how the shades were different from one another. The children were able to differentiate between the lighter and darker shades. Lana pointed to the light pink and said,

Lana: This is light pink, you add more white.

Olin: Remember white is lighter than red.

The teacher asked Silvia if she agreed with Lana and Olin. She was silent for a few minutes and then she shook her head.

Silvia: Well, more red.

Michelle: You add more red.

Jade agreed with Olin and Lana.

Now, the children had different opinions about how to make the shades of light pink. At this point, the teacher did not step into the children's discussion because this conflict gave the children an opportunity to test the two different theories. Thus, instead of giving a right answer, the teacher suggested that the children test their own theories. In this way, the teacher supported children as they made a learning group. For this experiment, the teacher left the children with brushes, red and white paints, white paper and little plates to mix colors outside of the childcare center. Then, the children started their experimentation.

Olin, Lana and Nell were going to test their theory that the more white you add, the lighter it gets. Michelle and Silvia were going to test their theory that if you add more red, the color will turn lighter. As the children started to mix their colours, the teacher asked Silvia if her theory was right. Silvia slowly answered, “Maybe!”

Michelle thought her theory was correct and she answered, “Yes it’s getting lighter.”

As children finished mixing colors, children painted the colors they had created on the paper and said:

Lana: The wind is making it more darker

Teacher: How?

Lana: The sun and the wind are making it darker. The wind is making it darker because.....

Olin: Because the wind and the sun got pink and red here, and the wind and the sun are blowing it into our plate. It gets darker and then sometimes when you mix it up it gets lighter then the wind and sun comes down and crushes more pink in.

Both Olin and Lana were convinced that their paint is getting darker because of the wind and the sun. And Michelle and Silvia disagreed:

Silvia: I don’t think that is true, because.... Just because!



Figure 4.9. The children are testing their theories: adding white will make it lighter VS adding red will make it lighter.

4.4.4. *Cycle Four: Experimenting Together.* As the children were testing theories on light and dark shades, they were creating new theories. It is not just a matter of adding white and red paint that makes the shades light and dark, but also the effect of the sun and wind on the paint. The children's theories on light and dark shades led to critical ideas of how the sun and the wind influenced the shades of colors. The children made their own theories reflecting their own way of looking at the world. They were able to do this because the children's thoughts were not yet enclosed in rigid categories. The teacher questioned how children associated the sun with making the paint lighter and connected the wind with making the paint darker. It was clear to the children that she would like to know about their theory of the sun, the wind and their explanations.

The next day, the teacher and children discussed how they could prove their sun and wind theory. They decided to mix their shades indoors to be away from the direct sun and the wind to find out if there was any change in the shades of paint. The children seemed to be excited about an experiment that might prove their theory. The teacher helped the children to develop their theories by listening to them and trying to make meaning out of them.

As children carried on the test, they continued to discuss their thoughts:

Silvia: Mine is getting a little bit light because we are not in the sun and wind.

Silvia: Mine is going more lighter.

Olin: No, yours is getting darker.

Silvia: No, it's getting lighter.

Olin: No.

Silvia: Mine is not dark, it's light. Mine is light!

As the children discussed these shades, there was no mention made to the effect of the sun and the wind. The teacher felt that it was important to remind the children of their theory about the sun and wind again.

4.4.5. Cycle Five: Exploring the Sun and the Wind Theory. To bring the children's attention back to their theory of the sun and the wind, the teacher set up the paints in the observation room that was darkened as much as possible and then she asked children a question:

Teacher: Why do you think we are painting in the dark today?

Olin: Because the wind makes it darker and then the sun makes it lighter and then it goes lighter and lighter when we have it in the sun. Light dark, light dark, light dark.

Teacher: Why is it that the sun makes the paint go lighter?

Olin: Yes, because of the reflection. The reflection of the sun makes it lighter and then it gets lighter because the wind goes in the sun. The wind goes right over the sun.

Olin seemed to understand how the reflection of the sun has an effect on making the paint lighter.

As the children started mixing their colors, they compared the colors they were creating:

Lana: We are making pink.

Olin: It's changing colors.

Lana: Yours and mine are the same.

Olin: Now put some white and now some red. Now that's how I made that color. We like mixing in our plates. It's easier to paint when the sun is out rather than the dark.

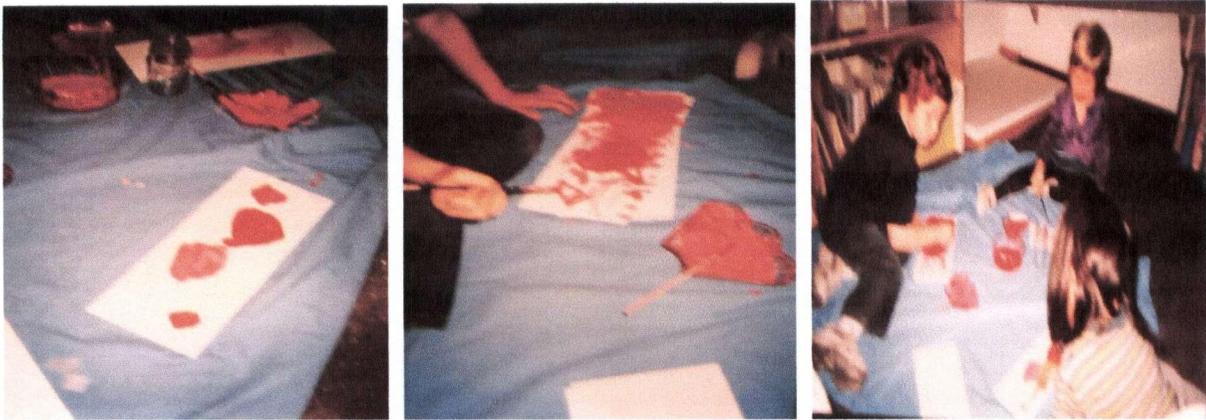


Figure 4.10. The children are painting in an observation room to find out how the sun and wind effects shades of color.

The children decided to make two sets of paintings, one to leave inside and one for outside to see the differences.

As they painted the second set, they requested a larger piece of paper to paint together.

As children painted, they repeated:

All: Crash rumble, thunder and lightening.

Olin: This is raining with thunder. Rumble crash, rumble crash, rumble crash. Wind, all the wind. Wind, crash rumble and rain!

When the teacher listened to the children's conversation about thunder, lightening and wind, she wondered if the children were associating the idea of darkness with the effect wind had on their paint, making their paint darker!

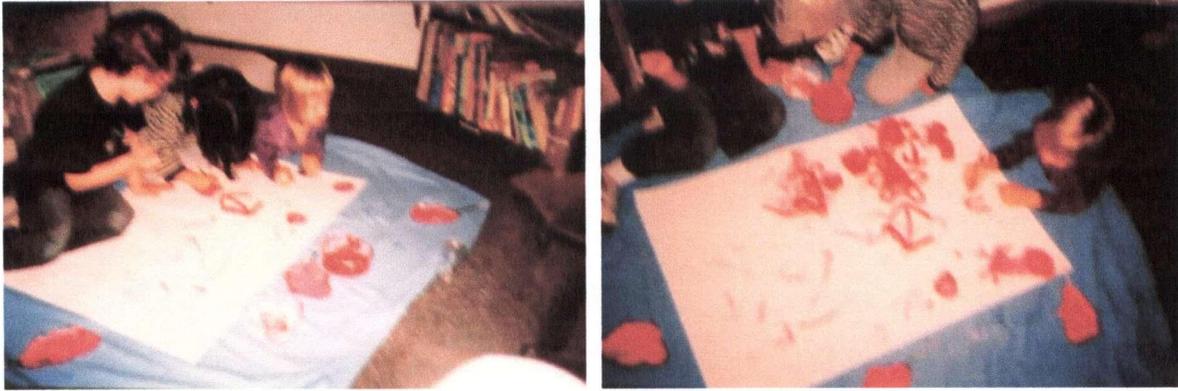


Figure 4.11. The children are painting together on a larger piece of paper to test their theories.

Lana left two large paintings out in the sun.

The next day, the teacher and children had a meeting and refreshed their memories about what had happened the day before yesterday (at this time, the children didn't mention about how the sun and wind had an effect on the paints but talked about the shades of color):

Lana: The sun and the wind make it darker to our painting but not Michelle, Silvia and Nell. Because it's not coming over there, it can't come over there.

Olin: It comes to us only because the wind and the sun make us, then they come to us. The wind brings the sun over to us. Because the wind, it comes and it brings the sun over to us and the wind doesn't bring it to them. It only brings it to our paint and then it brings some green paint from far away in the city.

Lana: And that's how it makes it darker!

Olin: Yes, and lighter. And the sun and the wind make it darker and then come lighter to be....

Lana: The sun makes it lighter and the wind don't. The wind comes first in our paint and then the sun. The wind makes it darker.

Olin: It is very tricky to say that!

Teacher: Look at the paintings that you all created. Look at the colors. Do you think the sun and the wind have changed the colors?

The children and teacher looked at the small paintings that were left in the observation room.

Lana: It's the same.

Olin: Because it got lighter from the sun for one, then the green paint comes from the leaves because it falls down and it makes green and then it makes pink to be light pink and then it turn to dark pink from the wind.

Then, the children looked at the large paintings that were set out in the sun.

Olin: Yes, and it did. Because that one is lighter now and that one is darker. Crash boom, boom! Lana, do you remember what we did?

Lana: We put it in the sun, because of dark and light, to see if it was going to turn dark not light.

Nell: Light and darker.

Lana: No, just dark.

Nell: Look it is lighter and darker.

Olin: We painted it lighter.

Teacher: So do you think the sun changed the color?

Olin: Darker makes it lighter. So the wind comes over to make it lighter and the sun comes over to make it darker. Because then the wind makes it lighter, then the sun makes it darker. But then what happens is the sun makes it lighter because the sun is lighter, then the wind is darker so it makes it darker.

The teacher was confused at this point. So she asked Olin again to understand Olin's theory on whether or not the sun had an effect on the paint. This time Olin answered:

This one has had a little bit of sun on it, not very much. It only had a teensy weensy bit and way more wind, and that one had lots of sun. It has more dark on that one, so more wind. This one has more sun because it's light and that one also has sun on it.

4.4.6. Cycle Six: Wondering and Making Meaning Together. At the next day meeting,

the teacher and children revisited the paintings that they put in the sun the previous day:

Teacher: We put the paintings in the sun. Do you notice any changes or differences?

Nell: No.

Lana: Darker.

Silvia: Mine went lighter, because I dumped all the white in it.

Nell: And I dumped all the red. It went darker.

Silvia: Mine went lighter.

Nell: Mine went darker.

Silvia: Mine went lighter.

Teacher: Do you think the sun had anything to do with it?

All: No.

Teacher: So what about our theory?

Olin: Wrong.

Teacher: So what makes the paint light and dark?

Olin: The sun makes it darker and the wind makes it lighter!

Teacher: But you thought the sun did not do anything to our painting, not lighter, not darker.

Olin: Oh yes, It's in the middle of the both. It's in the middle of light and dark. It's like little dark and little light. The sun makes it light and the wind makes it dark.

Teacher: So when we put these paintings in the sun, do you think the color changed or stayed the same?

Lana: No, it stayed the same.

Silvia: The white makes the paint go lighter.

Nell: Mine went darker because I dumped all the red. Mine is still darker.

Teacher: So did the sun do anything to your painting?

Nell: Ya, first it went light and then it went dark. So it changed lighter and then it changed to dark. The sun changed it.

Silvia believed all along that it was the color white that changed the shade of the color.

But she suddenly changes her mind:

Silvia: The sun makes mine white!

Teacher: How?

Silvia: Because I put more white and then Nell put some more red in so she has darker, she put red in it and I had white and the white was a little bit pinkish and I added all the white in it so it went light pink.

Teacher: How does the sun make it lighter?

Silvia: Because, no but, when we put our red, um, um, the white paint brushes in it we take the white brush and then put it into our paint, it gets red, then we put it back in there and then we start mixing it up and then it becomes pink.

Teacher: What about the sun Silvia?

Silvia: The sun makes it lighter and the wind makes it darker.

The sun makes it more, like, lighter in the daytime right, so it makes the paintings lighter and the wind makes the paintings darker.

Teacher: So you are saying that in the daytime the paintings look lighter and if it was night time the paintings would look darker?

The teacher and children decided to test this theory by turning off the lights and making the room darker.

Teacher: Is there a change?

All: Yes! (Everyone agreed).

It's dark, It's darker!

The lights were turned on again!

All: It's light! (Everyone shouted).

4.5. Episode 2. Discovering Artists through Shades-Hand to Hand

4.5.1. Cycle one: Visits to the Library. As the children worked with different shades of paints, the teacher felt that the children needed stimulation to keep their focus and maintain interest in their project. As an inspiration, the teacher introduced some artists to the children. The teacher explained to the children that artists had to have commitment and concentration to do their work. For example, she used Michelangelo as an example to show that he was committed and had to use full concentration while painting the ceiling in the Sistine Chapel. This inspiration led Olin to suggest a trip to the library to look at some books about different painters. The introduction of artists seemed to stimulate the children's interests in the project on which they had been working.

At the library, the children pulled out books and began looking at different paintings. The children showed excitement and interest. When Nell showed an interest in drawing some of the works of Bosch, this encouraged the other children to choose a painting and drawing as well. The children enthusiastically checked out the books and took them home to look at with their parents. Since then the teacher and children made several visits to the library. The children spent a great deal of time looking at the paintings. Then, they wanted to attempt to copy their favorite drawings of the artists.

4.5.2. Cycle Two: Attempting to Copy Favorite Drawings of Artists. The direction of the project shifted from shades of color to artists' drawings. Children seemed very interested in artists and their work. The children demonstrated great enthusiasm, commitment, and concentration. The children carefully observed drawings of artists' works from books and tried to mimic them. As the children became familiar with the artists and their paintings, the teacher

suggested that they revisit their drawings along with the paintings in the book and encouraged them to observe more details.

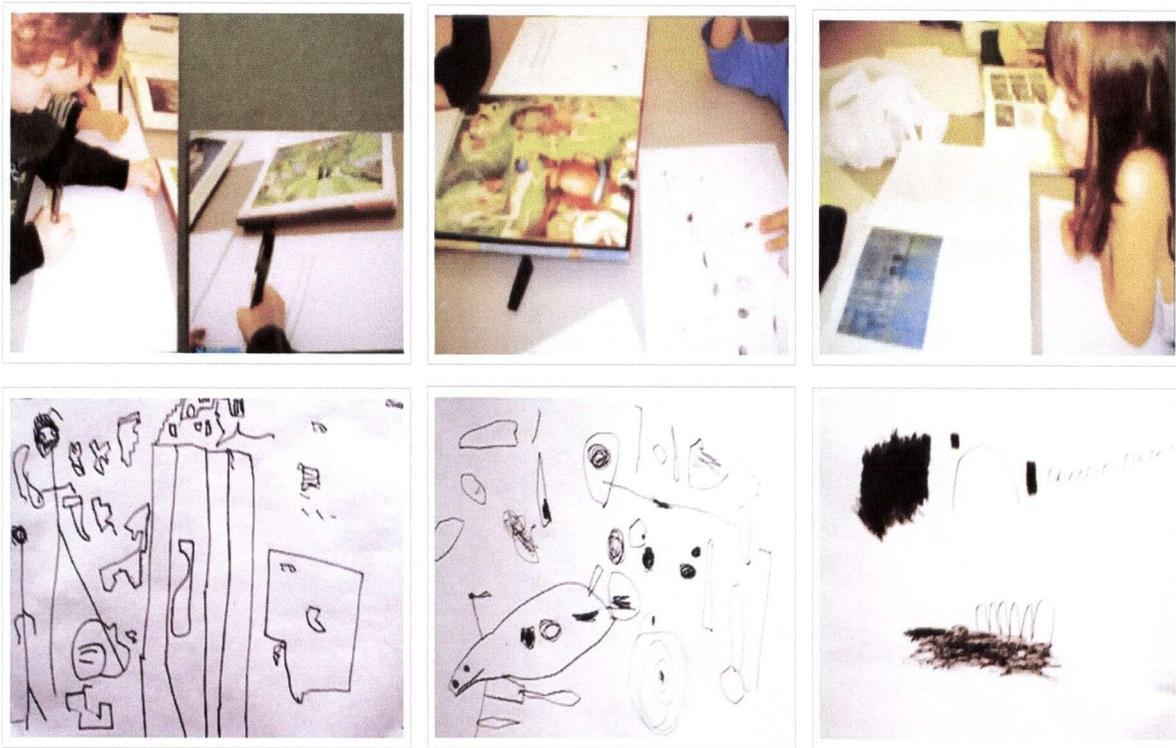


Figure 4.12. The children are carefully observing drawings of artists from the books and are trying to mimic them.

The teacher asked the children to carefully examine and compare their drawings with paintings in the books so that they could find more details that might be missing. This observation helped children to be more attentive to what they were looking at.

At this point, the teacher felt a bit overwhelmed because she did not have much knowledge about art and artists. Therefore, she was worried that she may not be able to challenge the children further.

4.5.3. Cycle Three: Using Monet to Understand the Effect of Light. The children continued to show a growing interest in the work of famous artists such as, Monet, Van Gogh

and Bosch. To promote children's interest in the famous artists, the teacher invited Nell's dad, Michael (pseudonym), who is a teacher as well as a painter.

Before Michael started working with the children, he read through the documentation of the project, *Shades of Pink* to understand the children's thinking behind their theories. Then, he decided to use Monet's paintings to approach the theory of light. Monet had painted the same object in different light. For example, he painted the church and bridge during different times of the day. Michael asked children to think about how visible an object like a building is on a bright sunny day and a dark day. Then, he explained to the children how Monet created six paintings of the same building: each painting got a little darker and finally it was very dark.

Then, Michael explained to the children what they were going to do:

Michael: So we are going to take an object like a tree. We are going to take the shape of a tree and we are going to make a painting of this tree and we are only going to use two colours, red and white. But you know what we are going to do, and I'm going to show you. Rather than mix the colours together we are going to take one colour. I think we are going to start with white, and we are going to make little dots just like these people made when they made their paintings. They made their paintings completely out of little dots of paint and it would take them a long time because they weren't doing big brush strokes like this, they were doing little dots like this. So that's what we are going to do, we are going to start by making little dots of white paint and then when we are finished with all the white we will go on to use the other like the red. But we don't use the red till we are all finished using our white because we don't want our colours to mix up.



Figure 4.13. The children are listening to Michael's explanation of Monet's paintings.

While the children were painting their tree and filling it up with dots, they talked about

dots they had been creating:

Olin: I really think I'm doing the most dots!

Lana: Michelle is counting it now; Michelle will have the most!

Lana: I have 18 dots.

Olin: I got 9.

Nell: I got lots!

Olin: She has the most, Michelle has the most!

Michael: We are going to try and put lots and lots of dots of white and lots and lots of dots of red and then if we stand back and look we are going to see if our tree looks like what colour.

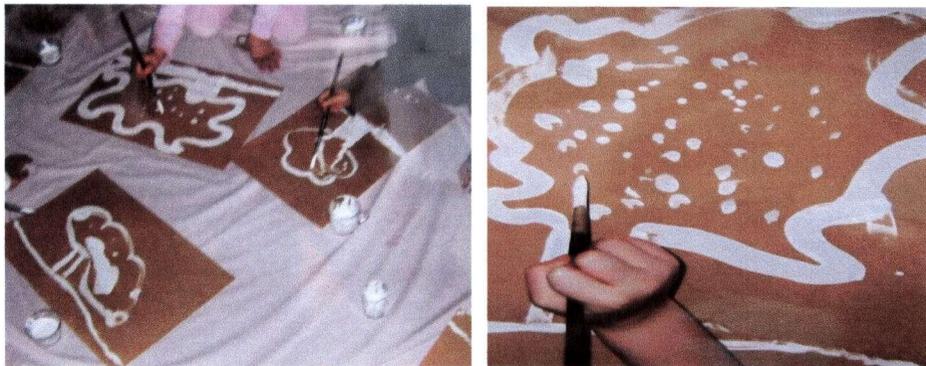


Figure 4.14. The children are painting their trees and filling them up with white dots.

As the children were finished making as many white dots as they could, they started

with the red:

Olin: It's hard!

Lana: No it's not hard. For babies it's hard!

Michael kept the children excited by comparing the dots on the tree to items found in real life:

Michael: This looks like sparkles on ice cream, who likes sparkle ice cream?

Nell: And cupcakes, I love cup cakes.

Olin: Is this done?

Michael: If you see some brown go get it, there you go. Pretend it's a bear cupcake and you want to put some icing on it. Put some red icing on it. You are very good Artist!

Michael led the dots into a pretend game and tried to keep the children's interest for as long as possible. The children spent over an hour working on the dots. The children showed great concentration and commitment!

The next day the children spent some more time adding dots to their Monet tree till they felt that there was no more brown space left on the tree!

Children: It is pink!!

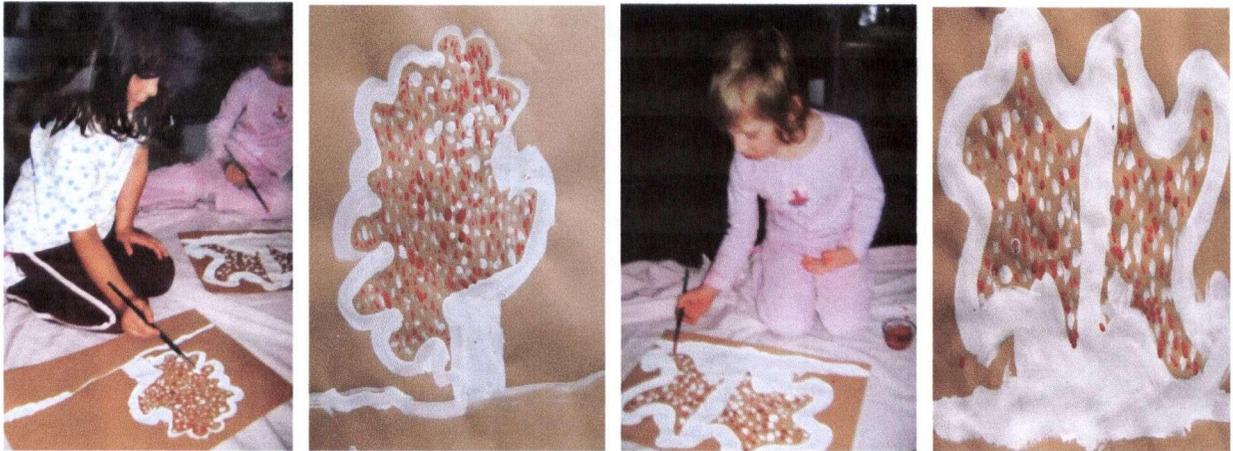


Figure 4.15. The children are filling up the trees with red dots after finishing the white color.

4.5.4. Cycle Four: Talking about their favorite paintings. For the several weeks, the children and teacher had been going to the library and copying paintings by artists. Since the children showed a great interest in Monet, the teacher put a large poster of Monet's work on the wall. Then children wanted to draw the painting. The painting of Monet has many different shades of blue and purple. The children talked about shades in Monet's painting. However, the children's interest had actually shifted from creating shades to drawing. They wanted to look at more drawings of artists. The children and the teacher went back to the library. Silvia was still interested in Monet and picked a book on Monet. Lana and Olin seemed more interested in

picking the largest and the heaviest book on the shelf. After the children selected their books, the teacher asked them to choose one painting from each book that they felt was special to them. Olin picked a book on French painters. Olin talked about his special picture of ships. He was excited about the size of the ships, “big, bigger, biggest”, he talked about the castle on the sand, the time of the day, sun and the moon, and the depth of the water. Lana was still undecided. She picked a book on Dutch painters. Silvia explained why she chose the painting, *Poppy field at Argenteuil*, from the book on Monet:

Silvia: Because it has flowers.

I like it because it has flowers. They are poppies.

4.5.5. Cycle Five: Conflict of thoughts on Monet's Painting. When Silvia shared the painting of Monet, other children showed huge interests in that painting, *Poppy field at Argenteuil*, too. Thus, the teacher encouraged the children to observe the painting together and asked questions:

Teacher: What do you notice about the people here?”

Lana: They are going on a walk. Ya, there are three people, two people going down there and one people going up there.

Silvia: No, there are four people.

Silvia and Lana had a conflict on how many people were going up in the painting.

Silvia thought there were two people whereas *Lana* insisted there was only one person.

Silvia: That one and that one.

Lana: No, you see the eyes?

Olin: No!

Lana: Then it's not people. No, how can it be people, it's a tree!

Olin: No!

Lana: It's not the people. How can people stick to the bush?

Olin: They are not sticking to it, they are walking.

Lana: That one's going down there and that one's going up there by himself.

Olin: No, you can't see the eyes because they are walking that way, look!

Lana seemed to agree with Olin. However, she still stuck to her theory.

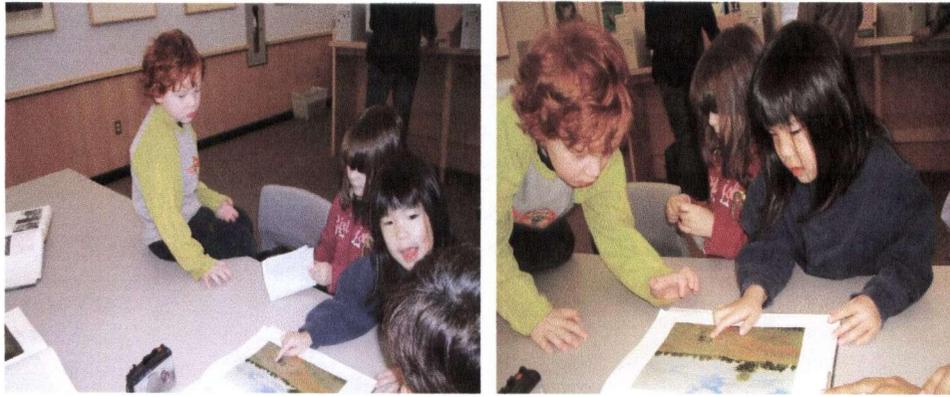


Figure 4.16. The children are discussing the details of the Monet's painting, *Poppy field at Argenteuil*, and sharing their ideas.

While the children were actively discussing about how many people were on the painting, the teacher carefully listened to them and documented their conversation. She didn't give children a right answer for that conflict. Instead, the teacher suggested to the children to conduct a test on whether or not a person is still a human being even though people cannot see one's eyes. She was confident in their ability to test the hypotheses. The children had been working together as a group since the project started. Also, they had built very strong relationships since they had known each other for nearly two years. This kind of environment helped children to construct a strong learning group and this helped them to share their thoughts and ideas freely.

4.5.6. Cycle Six: Testing their hypothesis (Is a person still a human being even though people cannot see one's eyes). The children and the teacher decided to conduct an experiment to figure out whose theory was right. I participated in this experimentation to help the children to find an answer for their question. First, the children, teacher and I started our test in the staff room. The children sat on the table with white paper and pencils, and I stood two steps away

from the children. They were able to see my eyes and could draw them. Then, the children asked me to go further away. I took two steps back. The children were still able to see my eyes. We all realized that we did not have enough space in the room for me to go further. So, we decided to go outside of the building and proceeded our test, again.

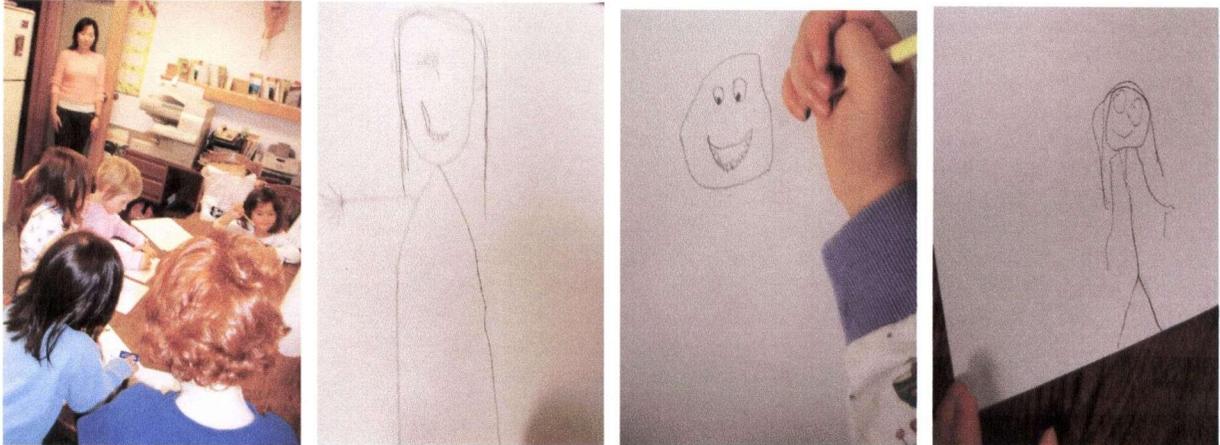


Figure 4.17. The children are testing their hypothesis: the children are able to see my eyes and draw them from a short distance.

This time, I took five steps away each time. Each time, the teacher asked the children if they were able to see my eyes. Finally, when it was a total of thirty steps that I had taken away from the children, they were unable to see my eyes. Then, the teacher asked the children if I was still a person:

Teacher: You said you cannot see her eyes anymore. Is she still a person?

Children: Ya, she is!!



Figure 4.18. The children are testing the children's hypothesis: They are trying to find out if they can still see my eyes from a long distance.

Finally, all the children including Lana agreed that there are four people in the Monet painting. This process helped children to understand that although they couldn't see people's eyes, they are still humans.

4.5.7. Cycle Seven: Monet Collaborative Drawing. The children continued to discuss the painting, *Poppy field at Argenteuil*, at length. They discussed the different types of flowers, the weather and the type of day it might have been, some color in the painting; and they discussed why the lady might be wearing the hat and carrying an umbrella. Then, they decided to draw the painting on the big paper, together!

Drawing together on the big piece of paper was not easy. The children needed to figure out how they were going to assign each person's role and how they were going to draw this 'little' painting on a big piece of paper.

Olin: I know, we can draw a big long line right in the middle and draw another long line and we'll start. Then we start drawing the picture and when we are finished we have to draw a square around it.
Line in the middle. Then we start drawing two pictures on the side, two of that, two of the same pictures and then we put a square around it.

The teacher asked Olin to show them what he meant. Olin repeated as he drew:

Olin: Right in the middle and then draw pictures on both sides, on this side and this side.

Lana: We draw a line in the middle and we draw here and there.

Olin: I've got a good idea. We'll divide the big piece of paper into two and then all of us can draw one picture and then all of us can draw another picture on that side and that side!

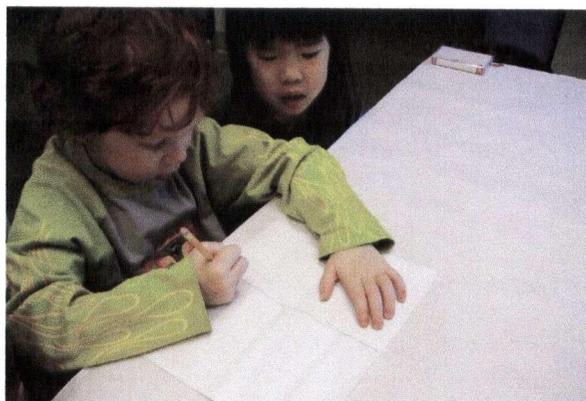


Figure 4.19. The children are trying to figure out how they are going to assign each person's role in a collaborative drawing.

Every one agreed with Olin. Then they started to discuss who was going to draw each part of the painting. Silvia had already decided what she was going to draw:

Silvia: I want to draw the people!

Olin and Lana decided to draw the sky, the trees, the grass and the poppies:

Olin: We'll draw the whole thing except the people.

The children decided to start with the grass then the flowers and trees, and finally, the sky and the house. Olin started drawing very tall grass so children looked at the painting again and observed how Monet has divided that painting in half – the sky and the ground. The children discussed the proper division for grass, flower, trees, sky, and the house on the painting.

After much discussion the children divided their long paper into half, the bottom half for the flowers and grass and the top half for the sky and bushes.

As children drew together, they worked well. They were aware of each other's space; they respected what each other was drawing. When there were problems, they negotiated with each other, and they supported each other. For example:

Lana: Olin, you should do these trees, ok? And I'll do the grass.

Olin: We'll both do the trees.

Lana: Trees are hard to do.

Olin: The more quicker you do it now the more quicker you do it later.

The children spent a great deal of time drawing the grass, the poppies and the people. It took the children three days to complete the drawing.



Figure 4.20. The children are collaboratively drawing Monet's painting, *Poppy field at Argenteuil*.

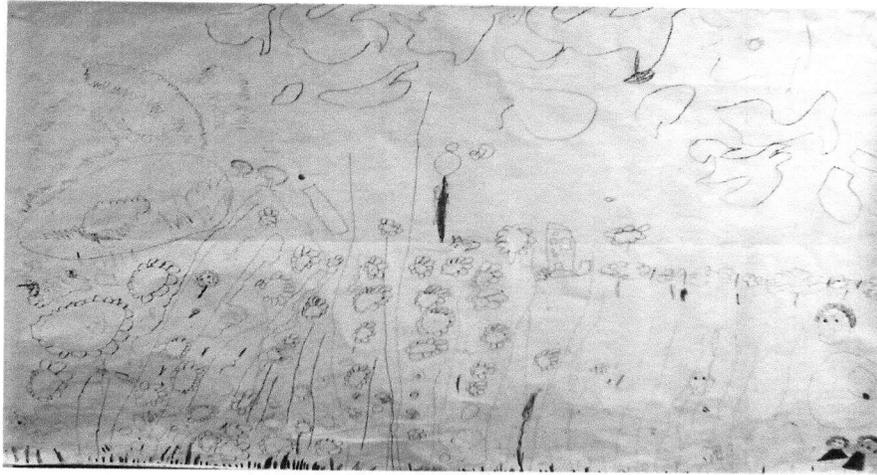


Figure 4.21. The children's final drawing of *Poppy field at Argenteuil*

The teacher and the children had a break of nearly three weeks from their project due to the teacher going abroad, and the children having Christmas holidays. When the teacher and children returned from holidays, the project started again. I was curious to see if the children would still be interested in the artists they had been exploring, especially Monet, and how the teacher would rekindle the children's interests on the project.

4.5.8. Cycle Eight: Revisiting the Documentation. After the Christmas holidays, the teacher used the earlier documentation to provoke children's memory and rekindle the excitement they had before the holidays. While they were revisiting the documentation, they discussed their work on the project. The children showed huge interest in their collaborative drawing of Monet's painting and talked about what each of them had drawn:

- Olin:* I drew the bushes; I drew the house, really a tower.
The grass, I did the biggest ones, beanstalk grass to climb up.
Lana: I drew the poppies.

When the children revisited the documentation, the teacher tried to bring out some of the theories the children were working on before the holidays:

Teacher: Silvia, why can't I see people's legs?

Silvia: Because of the grass and the dress. They are hiding her legs.

They also talked about the number of people in the background. The children had discussed if you could not see the eyes, then it wasn't a person.

Teacher: Remember Lana, you thought there was only one person.

Lana: There are two people, it's the same two people. You couldn't see as well as in the other book.

Silvia: Because she's pointing her head down.

Olin: Lana thought she was stuck to the bush!

Look! They do have eyes; they have tiny, tiny eyes!

When the children and teacher continued to discuss about the drawing, Olin jumped up and said:

Olin: I have a great idea! How about we get into our painting group and paint! We want to paint!

That was the start of the group again. The children settled in their group and painted together as a group. I could see and feel their excitement and joy of being together and painting again!

4.6. Episode 3. Arts and Artist

4.6.1. Cycle One: Visit to the Vancouver Art Gallery. The teacher felt that at this point the children needed something to challenge their thinking for the next step. The teacher and children had talked about an art gallery tour before the Christmas break. Therefore, the teacher thought that taking the tour would be a great way to spark their interest again. The children were very excited when they found out they were going to visit the art gallery. Over the next few days, the children and teacher talked about Emily Carr, an artist whose work they were going to be

looking at and they spent time looking at paintings and sketches created by Emily Carr. They were fascinated by the totem poles and the trees in her paintings and tried to sketch some of them. The height of the totem poles and the animals carved on them intrigued the children.

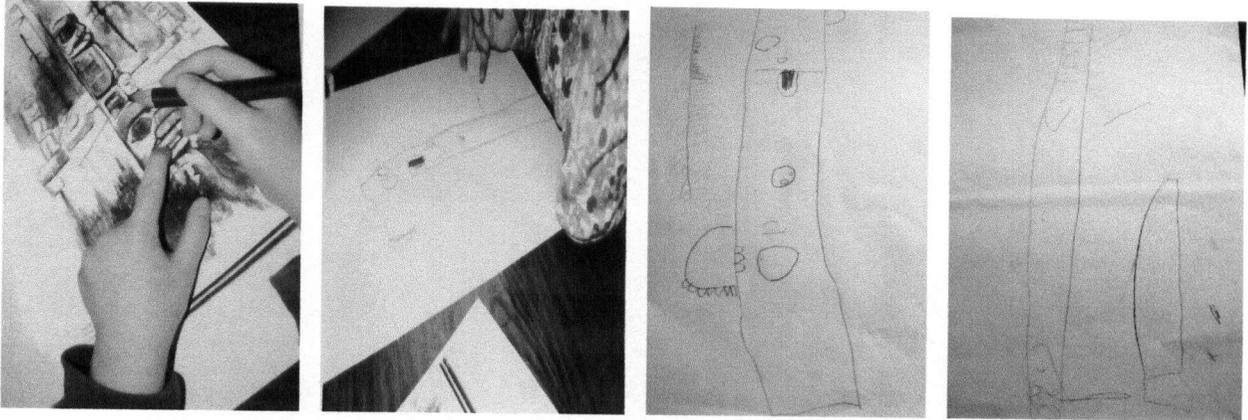


Figure 4.22. The children inspired by Emily Carr's sketches are drawing totem poles.

Due to the flu virus, only four out of six children were able to make the trip to the art gallery. Jennifer (pseudonym), Olin's mom, joined them as well. Jennifer encouraged the children to think about paintings more deeply by asking leading questions:

Jennifer: What do you see in this painting?

Nell: Rocks those are green.

Silvia: Rock that's green and a rock that's not green.
Trees that may have snow on it because it got white on it.

They also discovered that the artist signs his/her name on the painting.

Lana: It's the name, Emily Carr's name.

The children used their imagination as Jennifer encouraged them to look at the forest paintings.

Jennifer: What kind of animals do you see?"

Children: Owl.

Animals with long teeth in front.

Lions.

Leopards.

Beaver.

Jennifer: What's his face doing?

Olin: He's scared!

Silvia: That looks really scary! It looks like a wild forest!

Nell: I see a face and a hand in that painting. (Looking at it from far) When closer it doesn't look like anything, when far back it looks like he's scared.

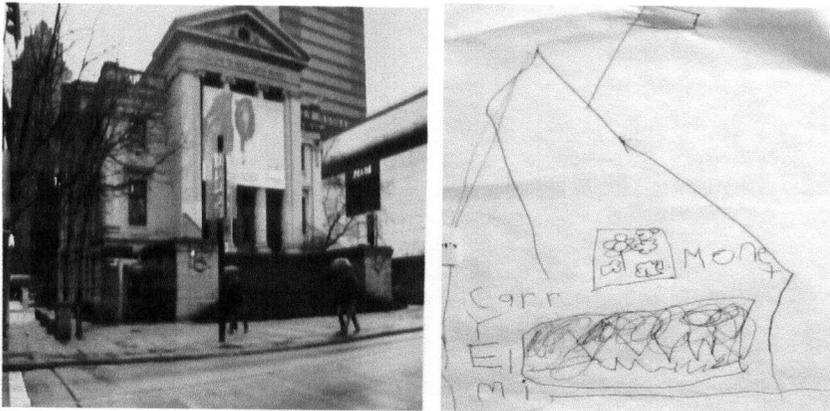


Figure 4.23. A picture of Vancouver art gallery and Silvia's drawing of art gallery.



Figure 4.24. The children are touring the Vancouver Art Gallery.

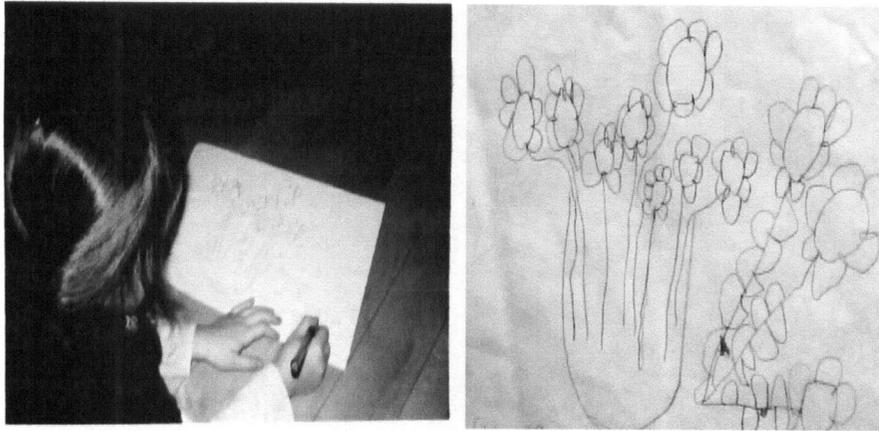


Figure 4.25. During the art gallery visit, a flower painting got Silvia's attention and she is drawing the painting.

The children seemed excited and enthusiastic about being at the art gallery and being able to see actual artworks that they had learned about in books.

After the gallery tour, the teacher realized that the children needed more hands on activities that could amplify learning from this experience. For the sake of a better understanding, she wanted to show children the process artists go through to create a piece of work.

The following Monday, when the group gathered again, the teacher asked the children what they wanted to do after the visit to the art gallery:

Children: Go to another art gallery
 Ask them if we can watch them paint!
 Then we can make our own gallery!
 We need to paint some paintings!

The children were full of ideas about what they wanted to do next. They seemed to be very motivated by the gallery experience.

4.6.2. Cycle Two: Going Back to Monet. After the visit to the art gallery, the children

asked if they could watch some artists working. Liz (pseudonym), Silvia's mum, suggested they visit the art studio on campus. The visit was confirmed after a few emails and phone calls.

One morning the teacher and children went to the library to pick up the children's Monet drawing, which was being laminated. The children were very excited and wanted to bring it to the class meeting so that they could show their work to the other children. The children were very proud of their drawing. It was significant that these children felt confident of their work and what they had done together.

When the children gathered into their group, Olin expressed his impression about Monet:

Olin: He's the best painter ever. Because he mixes colours and he has neat palettes. He has lighter colours than Emily Carr.

Olin's opinion about Monet inspired the other children to know more about Monet so that they went to the library to get some more books on Monet. The visit to the art gallery allowed children to compare Monet's work with Emily Carr's. The exposure to Emily Carr's paintings and books helped the children to understand Monet better and to become more interested in Monet's work. The children spent much time talking about and looking at diverse Monet's drawings. Then, the children decided to draw the same painting of Monet as they had drawn before.

4.6.3. Cycle Three: Visit to the Art Studio. The children had been looking forward to visiting the art studio. The children and teacher met Sara (pseudonym), who is an art instructor on campus, she was going to take them to the art studio. Sara walked them around the university art classrooms. The children were able to see the students working at their easels using palettes,

tubes of acrylic paints and canvases. There were some students sketching in their sketchbooks and some creating colour swatches. The children were very quiet as they carefully observed the students at work. It was an interesting moment for the children to see different kinds of art materials. Some materials were similar to those the children used in their own work, such as paints, brushes, and canvas; and some were not, like easels, oil paints, and sketchbooks.



Figure 4.26. The children are visiting an art studio on campus: they are observing various art materials and students at work.

4.7. Episode 4. Exploring Poppies

4.7.1. Cycle One: Examining Poppies. After the studio tour, the children got together for their project work. This time, they were attempting to draw Monet's painting for a second time.

This would be an interesting activity. I was excited to observe whether children would be more detailed than they had on their first drawing attempt. The teacher presented each child with a silk poppy so they could examine the different parts of the flower in detail. The children carefully examined their poppy and felt the different parts. They observed the middle of the poppy, which is round in shape, and what they called the ‘pointy things’ (stamen) that are around the centre. They also looked at the shape of the petals and the wavy edge of the petals and noted how they overlap. Then, they recalled their original flower drawings and compared them to the poppy. The children realized that the petals of their flowers in their earlier drawings did not overlap and they did not have ‘the pointy things’ on the petals.

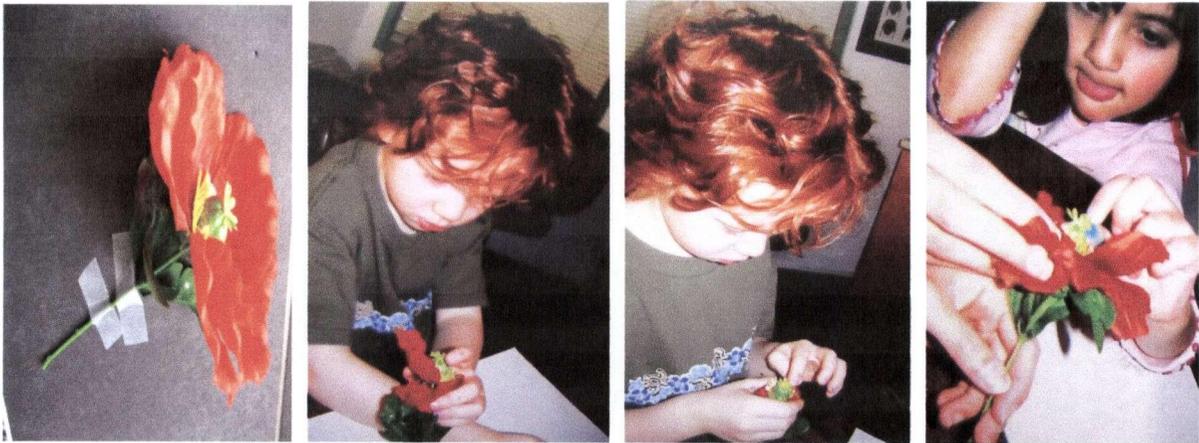


Figure 4.27. The children are observing and exploring a silk poppy.

4.7.2. Cycle Two: Drawing and Painting Poppies. After the teacher and children examined poppies together, starting with the round shape in the middle and then the ‘pointy things’ and then the petals, the children had a better understanding on how to draw poppies with proper details. The more the children drew poppies, the more they seemed to gain confidence in their artistry. Over the next few days, the children continued to draw the poppies, using charcoal and pens.



Figure 4.28. The children are observing and drawing poppies with pencils.

Then, *Lana* asked the teacher if she could paint a poppy. In particular, Lana wanted to paint poppies at an easel like students she saw in the art studio on campus. Lana was a bit hesitant at first because it was the first time she would paint a poppy. The teacher helped Lana by talking through the shape of poppies with her. Lana felt so proud of herself when she painted a beautiful poppy. The next day, Lana painted another poppy and this time she invited Silvia to paint a poppy as well. Silvia was hesitant at first. But after the teacher talked her through the shape of poppy like she did with Lana, Silvia seemed to become comfortable with the idea of painting one at an easel.



Figure 4.29. Silvia is painting a poppy on an easel.

Lana and Silvia's paintings of poppies inspired other children to paint. Since the children had been working as a group, they had been building strong relationships. This learning group had been successfully working by stimulating and supporting each other's ideas.

The children used their previous experiences of mixing colours to create some of the poppy colours. More significant than the mixing of colours itself, the children's confidence had been growing throughout this project. For example, Olin said:

We are real artists now! I am trying to make the same colours, does it look the same? Now should I paint inside the petal? I guess we are starting to be real artists again. We are getting better and better!

Olin also said that painting brought back his "focus, commitment and concentration!"

While the children were creating shades for poppies they talked about how to make the shades:

Olin: Now I'm going to mix some orange and then I'm going to need some red.

Lana: I'm going to mix some yellow with the green. Look, there's some black as well!

The children had been building a relationship with poppies through representing a poppy in various ways using different art media. First, children observed a poppy and talked about its shape and details. Second, they drew poppies with pencils and charcoal. Then, they painted poppies. Through the processes of representing poppies, the children had built knowledge about poppies as flowers. Each time the children were exposed to the poppy and were given the opportunity to draw and paint the poppy, they continued to build a relationship with their knowledge. They now had completed:

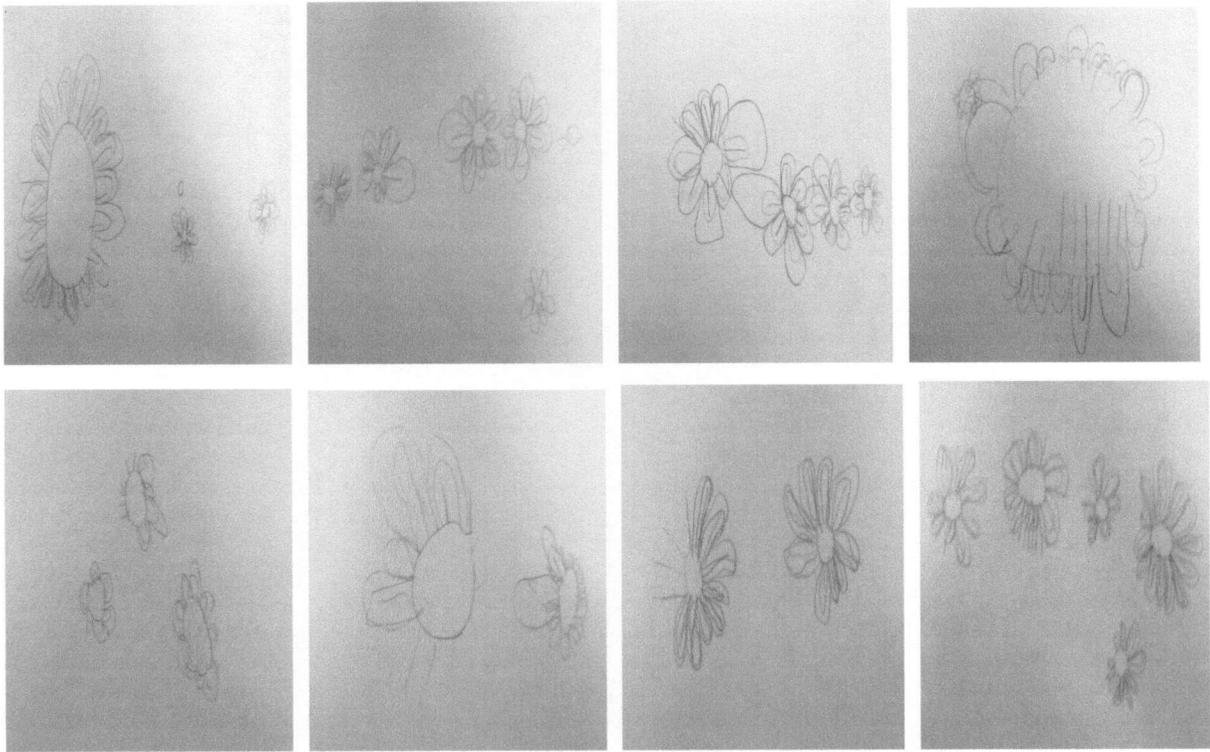


Figure 4.30. The first representations of poppies with a pencil.

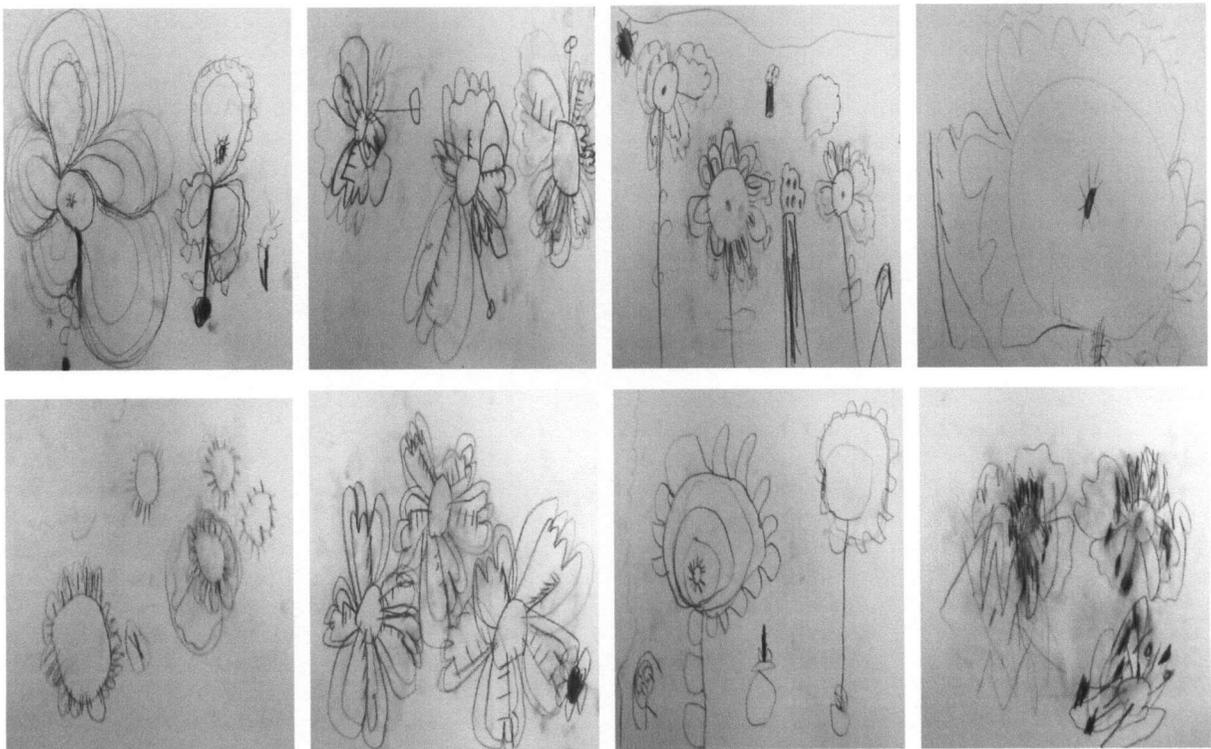


Figure 4.31. The second representations of poppies with charcoal.

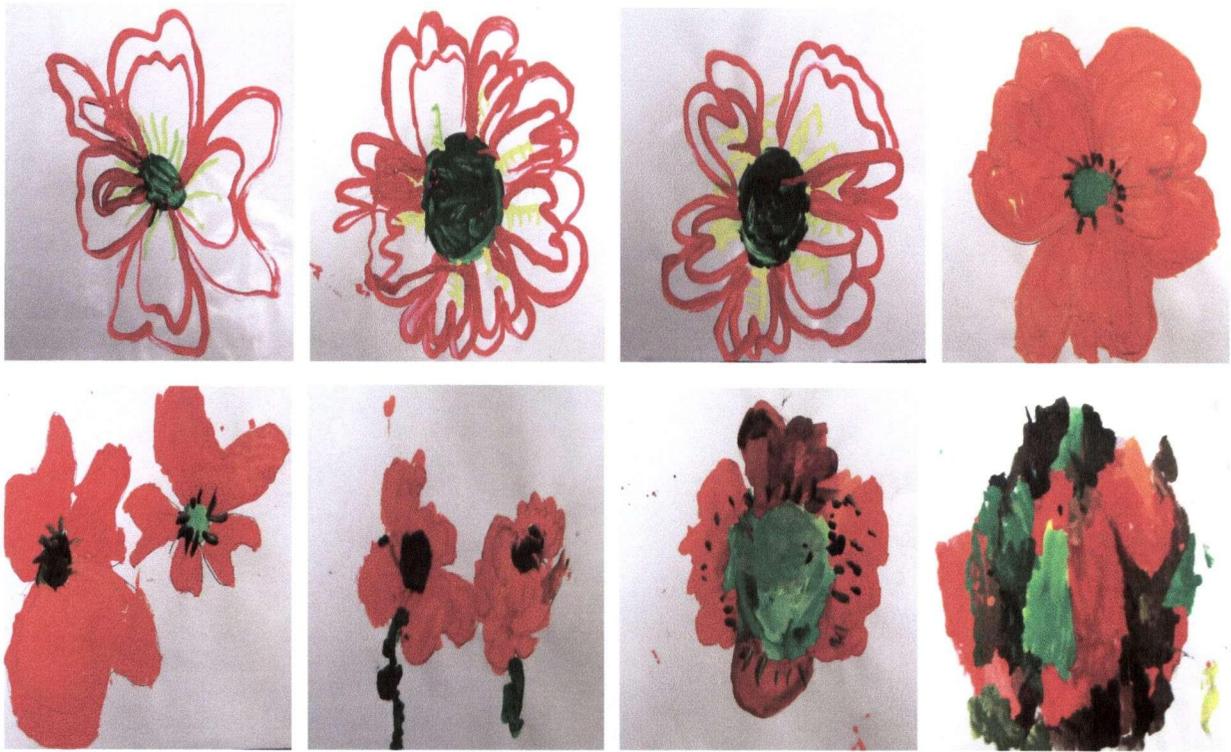


Figure 4.32. The third representations of poppies with paints.

When the children finished painting their poppy, the teacher wanted to sustain their enthusiasm and excitement by providing them with more aesthetic experiences. The teacher got news from the pedagogista, Cathy (pseudonym), saying that she invited her friend, Stephen, who is a painter, to come and visit the children. It would be an exciting event for the children since they had been showing great interest in artists.

4.7.3. Cycle Three: Visit from an Artist. When Stephen came to the center, the teacher asked him to look at the documentation of children's project. The documentation helped him to understand children's ideas and to get a sense of children's interests. Stephen touched on some of the theories the children had been working on over a period time. One of theories that the children had worked on was the theory of eyes. Lana had believed that if you don't have eyes, then you are not a person. Stephen shared his ideas with children regarding this:

“My old sculptures had eyes, but the current ones don’t, because they are so far away. Because the further away they are it is harder to see the eyes.”

Then, he drew a picture using a charcoal stick to explain the differences between representing things that are close or at a distance:

The thing is that when things are really far away, we sometimes suggest that they are really far away by making them soft and when they are really close we can make them darker or strong.



Figures 4.33. Olin and Silvia are listening to an artist, Stephen. He is explaining how he describes things are far away and close.

While Stephen was explaining his ideas to children, the children were carefully listening to him and watching what he was drawing.

Olin’s drawing of knights portrayed his knowledge about distance after Stephen’s explanation. He drew a large knight up close and he drew the knights further back when they got smaller and smaller. Olin drew knights as dots to represent they were very far back in the picture.

The children learned that they could represent something just by making marks. For example:

Silvia: I don’t draw each individual leaf. I just draw marks so it gives an impression of leaves.

Nell: When I see that bush, I just sort of make it feel like that bushes. I don't necessarily draw it exactly that way.

4.7.4. *Cycle Four: The Second Drawing Representation of Monet Painting.* On Monday, Olin announced to the teacher:

“I would like to draw that Monet picture again and I want you to help me.”

Olin seemed like he had been thinking of drawing the Monet. At that time, the class was missing some children, Silvia, Lana, Nell, Michelle, and Jade because they had not come back from spring break yet. The teacher and Olin together cut out a piece of paper and set up a table in the hallway where the previous drawing was displayed. Olin seemed very sure of what he wanted to do. He put the picture of Monet in front of him and he started working. He divided the large sheet of paper into parts, one part for the poppies, one part for the field and one part for the sky. He was very careful and deliberate about his plan. Then, Olin spent two hours working on his Monet drawing. During the time, he was focused and committed in spite of all the distractions of people in the hallway.



Figure 4.34. Olin is drawing a painting of Monet, *Poppy field at Argenteuil*, in a hallway where the picture of Monet's painting is being displayed.

The next day, Silvia, who just came back from spring break, joined Olin in drawing Monet's picture. Silvia added more poppies to the drawing and asked Olin:

Silvia: Why did you do this big rectangle?

Olin: So poppies are all on one side and the sky and the house and the bushes and the trees on the other side.

Olin and Silvia continued to draw together and Silvia said:

Silvia: I'm way better at doing poppies now than before.

Silvia's confidence must have grown through this project. However, while she was drawing poppies, she lost her concentration from time to time. And Olin said to her:

Olin: If you don't concentrate then you will not be able to paint on here, because you may mess it up.

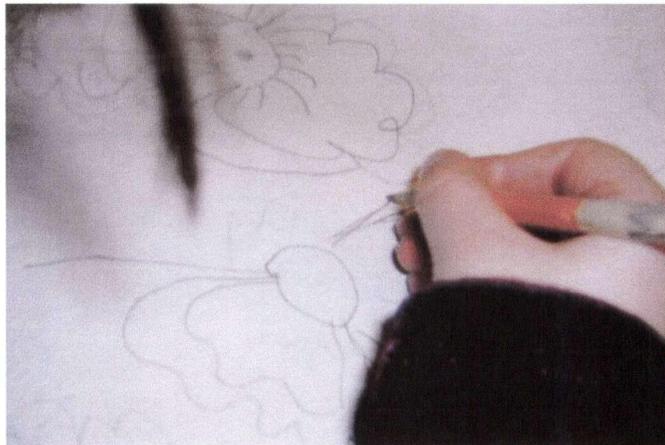


Figure 4.35. Silvia is adding more poppies to Olin's drawing.

These children were building a strong relationship with each other. This relationship made it possible for them to express their thoughts freely. Moreover, the children motivated each other with advice and criticism. This kind of learning atmosphere was possible because the children had been working together day after day.

4.7.5. Cycle Five: Collaborative Painting of Monet's painting. When Silvia and Olin decided to start painting the Monet, the teacher introduced them to a watercolor wash and

explained the technique required to use this medium. The children discovered the diverse effects of their sponges when they used sponges for the wash. The children found out that if they pushed the sponge harder, it made darker marks and if they touched the sponge lightly to the paper it made lighter marks:

Silvia: Lighter, I was pushing too hard, Olin lighter. We are making some dark marks and some light marks.



Figure 4.36. Olin and Silvia are painting their drawing with watercolor wash.

The next day, Nell and Michelle joined the painting. The teacher asked Olin to explain to Nell and Michelle what he and Silvia had done:

Olin: It was my idea to get a big roll of paper. Then we decided to get two chairs and a table, then we got the Monet picture and put it on the wall and then it was very hard work. Silvia did some flowers. Then it came to this. Then we are doing a wash with the sponges. We can't get it too wet and can't press too hard. We are very good artists right now.

Olin's confidence was so clear in his words. After listening to Olin's explanation of their painting, the children painted the Monet together.



Figure 4.37. The children are painting the Monet's painting with watercolor.

As the children finished painting their Monet, the teacher asked Lana, who just returned from holiday, what she thought of the painting of her peers. Lana compared the poppies in their sketch books to ones in the painting:

Lana: Those don't have stems (the poppies in the sketch book). They don't have the yellow stick things and the petals are too fat (the poppies in the painting). They also don't have waves.

Olin: In the picture, the roof has a straight roof and this one is pointy. Some children didn't stay inside the lines of the poppies. They didn't follow the lines. Silvia, Nell and Michelle messed it up.

Children (they nodded their heads like they agreed.)...

Lana compared their drawings of poppies which they had drawn in the sketch book to ones on the collaborative painting; and noticed that the stems, stamen, and petals in the painting were different from ones in the sketch book. Olin compared the painting of Monet to their collaborative painting. He pointed out that his peers didn't stay inside the lines of poppies. Also, he said that the shape of their roof was different from one of Monet's painting and criticized his

peers for messing it up. Silvia, Nell, and Michelle didn't seem to be offended by Olin's criticism. They nodded their head when Olin gave his comments to the group, and stayed in silence.

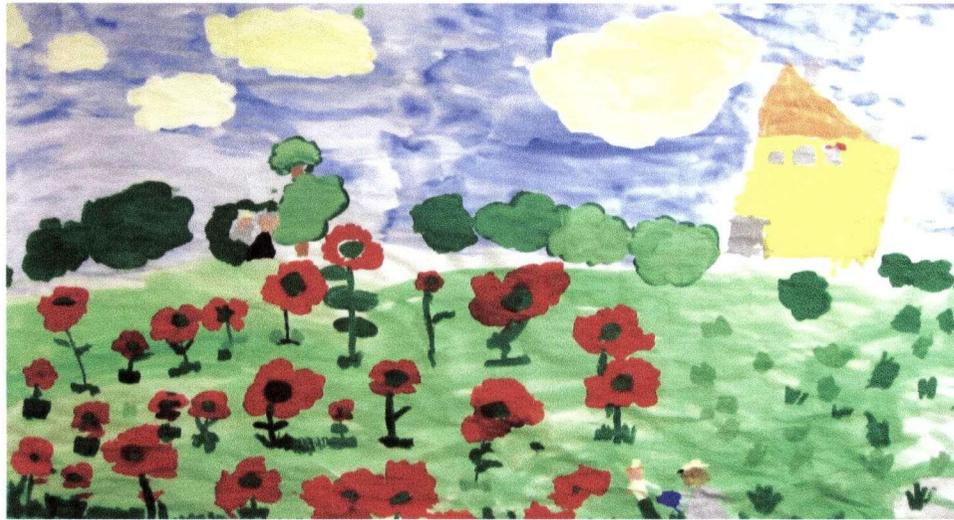


Figure 4.38. Children's final collaborative painting of Monet's painting.

Observing the collaborative drawing and painting, points to the relationships between these children. The children freely exchanged and shared their ideas. In addition, they were not hesitant to criticize each other. I was surprised by Olin's keen criticism towards other children, but also surprised by their reaction to Olin's harsh criticism. Afterwards, I commented to the teacher about this incident. The teacher's explanation is described under the commentary in this chapter.

4.7.6. Cycle Six: Representing Poppies with Different Art Media. When the children revisited their collaborative painting of Monet's picture, they realized that the details of the poppies when drawn with pencil were not noticeable because the paints concealed them. Therefore, the children and teacher tried to find out how they could keep the details of poppies when they painted them. The teacher suggested that the children try to use different art materials.

The following pictures show the different effects on the paintings when the children used different materials to describe poppies.

First, the children drew poppies with pencils and they redrew them with pen strokes over the pencil lines and then, they painted them.



Figure 4.39

Second, the children drew and colored the poppies with colored pencils.

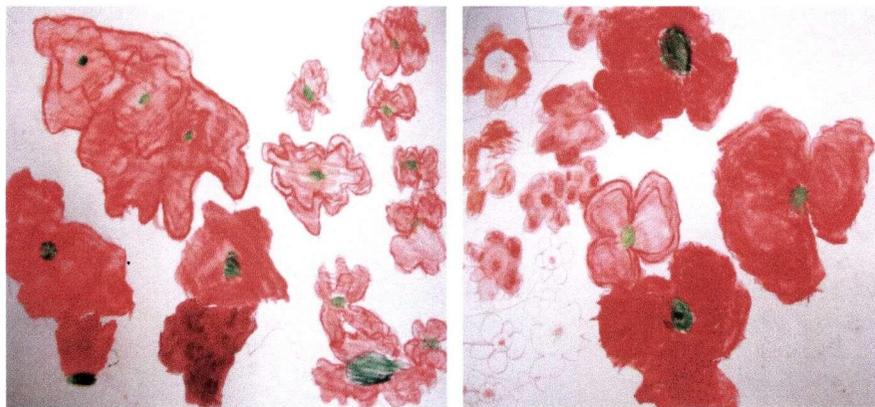


Figure 4.40

Last, the children drew the shapes of poppies with crayon and painted with watercolor.

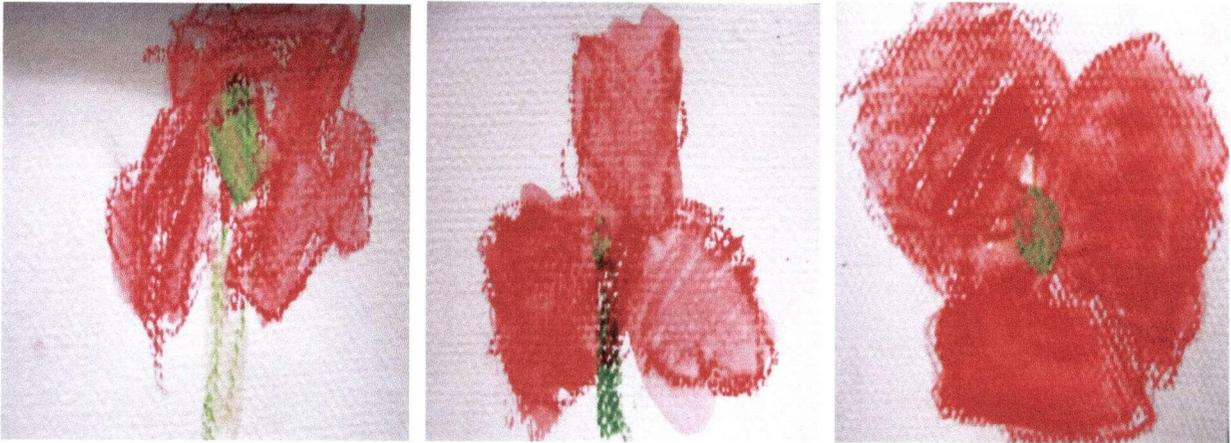


Figure 4.41

I finished my research in the center in the mid-March, 2006. At that time, the children and teacher were still engaging in the *Shades of Pink* project. Afterwards, I made a few visits to the center several times to see how the project had developed since I left. I also participated in another art gallery tour with the children in May, 2006. At that time, the children were interested in the works of local artists in Vancouver and they still showed great enthusiasm towards their project, *Shades of Pink*.

Commentary

This case study provides insight into the way children construct knowledge and the way they represent their ideas using different types of art resources while engaging in the project, *Shades of Pink*. The project was first initiated with the observation of children's interest in mixing paints. In collaboration with their teacher, the children developed this project into a meaningful context for learning. The children constructed hypotheses, tested their theories, elaborated the theories, and exchanged thoughts with their peers and the teacher in order to build

knowledge. Through this process, the children constructed at least two different kinds of knowledge (a) social understanding/relationships, and (b) content knowledge (through the interactions with adults and art materials, and experimentations). The children's knowledge building processes are evident in the pedagogical documentation that was kept, including children's conversations, teacher's comments, pictures of children's work, and pictures of children working. Pedagogical documentation played an important role in children's learning in terms of (a) promoting parents' involvement in children's learning, (b) enhancing children's learning, (c) helping the teacher plan and evaluate children and (d) making children's learning visible.

4.8. Social Understandings/Relationships

4.8.1. Accepting differences through listening. Through listening to children, the teacher was able to discover children's theories, theories for which children created a problem, hypotheses, and tests to prove whether they were right or wrong. For example, in the processes of searching for solutions, the teacher and children constantly probed questions and explained their theories as partners. When the children initiated the sun and the wind theory, the teacher didn't tell the children the right answers about how the sun and wind affect shades of color. Instead, the teacher listened to the children and she encouraged them to explain their theories and thoughts. By doing this, the children were able to develop their ideas about how the sun and wind affect shades of color. At the same time, the teacher was able to see how deeply children's theories are rooted in their personal experiences by listening to them. This accepting atmosphere provided the children with a context where they were able to investigate and go deeper with

ideas that took them beyond their first thoughts. I think their deliberations demonstrate that learning is more than the accumulation of knowledge or finding the truth. In the course of experimentation and explanation, the children constructed a deeper, more complex, and more intriguing relationship with shades of color and with each other than they had before. Vecchi (2002) explains that if the teacher and the children “go deep” with something that captures the imagination of both children and adults, the children will bring in everything they need to make connections. When you investigate in depth, uncover more and more layers of meaning, the roots go down, and the tentacles go out, and the children begin to see how this one thing is actually connected to everything. Children are born with a powerful desire to connect with the world, to interact with it, play with it, get to know it, and leave a trace on it. A project such as this carries the potential for children to create their own relationships with experience and to make their own meaning. Children need marks, images, words, dance, and voice to do this (Cadwell, 2002). The project recounted here presents the relationships the children made within the context of a layered understanding; the collaboration of the teacher and children together in search of meaning; and experimentations that revealed discoveries and shaped meaning. Throughout this process, the children carried out their research and constructed knowledge. From time to time they made mistakes. However, they continued to search and investigate on their own with intensified effort.

4.8.2. *Collaborative Learning within the Group.* The ‘*Shades of Pink*’ project shows how children’s group learning fosters their curiosity and exchange, but also how young children can both influence and be influenced by other children. Giovanni (2001) said that children are sensitive to other’s thoughts and they are capable of incorporating others’ strategies and

solutions into their own. When the children had different assumptions, they tried to explain their ideas and wanted to prove it to others. For example, in this project, the children had an argument about Monet's painting, *Poppy Field at Argenteuil*: Lana thought that there were three people in the painting, two people walking down hill and there is only one person walking up the hill.

However, Silvia and Olin thought that there were four people in the painting, two people going down and two people going up. The children started to argue over how many people were going up in the painting. Lana asked the other children if they could see the eyes on an image that the children insisted was a person. Lana continued to explain that if you cannot see the eyes, then it is not a person, and it is a tree. Also she added that it cannot be a person because people are not attached bushes. However, Olin would not give up his opinion and said: "They are not sticking to it, they are walking.", "and we cannot see the eyes because they are walking that way, look!"

This example shows how the children constructed knowledge through the discussions and interactions with others in a group. In addition, the collaborative group learning enables the children to encourage and criticize each other. For instance, in episode 4 of this study, there was a moment as Silvia lost her concentration as she drew poppies with Olin on the big sheet of paper. When Olin noticed that he said that "If you don't concentrate then you will not be able to paint on here, because you may mess up." Olin's comment stimulated Silvia to focus on drawing poppies again. Silvia didn't seem to take his criticism personally. Also, after finishing painting with peers, Olin criticized some children saying that "some children didn't stay inside the line of poppies. They didn't follow the lines." Again, the children did not seem to be offended by Olin's criticism. They nodded their heads like they agreed. I was amazed by the children's reactions to such criticism and asked the teacher how these children could take

criticism so maturely. The teacher told me that it didn't happen over night. These children had been working together almost seven months by that time, had known each other very well, and had built strong relationships and friendships amongst themselves. The number of months that the children spent together in the group influenced the ways in which they treated each other. The other children may have thought that Olin was being blunt at times but they knew he had a point. The teacher also mentioned that Olin had always been a good helper when other children needed help. Krechevsky (2001) comments that friendship can be a strong link between children, fostering curiosity and exchange. Friends also motivate each other to try things. Moreover, through group learning, the children learned how to listen to other people, how to express their ideas, and how to accept differences. This process helped the children to develop a competency and to have respect for different ideas. According to Giovanni (2001), when children work alone, they don't have the opportunity to negotiate or test their perceptions against other theories. On the contrary, children in learning groups experience knowledge as a constant process of negotiation and reflection. Teachers who are comfortable with ambiguity and not completely focused on right answers provide a welcoming context for this process. In this project, the discoveries of each child became part of the ideas of the learning group. Therefore, in order to represent the group's ideas, children's individual discoveries needed to be expressed and discussed. Individual moments in a learning group need to be guaranteed and respected, so that each child can express his or her own theories and ideas (Giovanni, 2001). Putting these hypotheses and ideas into circulation for discussion with others allows the ideas to evolve and the group to produce knowledge that belongs to the group itself, and in which the group recognizes itself (Giovanni, 2001). Thus, the children's theories can be modified with a

continuous exchange of information, explanation, and opinions. Through this process, the children learned to see themselves as thinkers with different points of view. Children in a learning group accept other people's opinion and feelings and offer their own opinions and feelings, whether they are in agreement with or differ from their peers. This was so evident in this project: children learn together using negotiating skills, flexible thinking, and by listening to the ideas of others.

4.9. Content Knowledge: through the Interactions with Adults and Art materials, and Experimentations

4.9.1. Meaning Making. Episode 1 of my thesis presents the various ways in which the children and their teacher worked together to prove their theories about the effects of sun and wind on the paint. Through the process of collaboration and the momentum achieved through these experiences, we are able to see the children's ways of thinking, including the ways they approached the topic, and their strategies to find solutions to problems that mattered to them. In short, children see the world differently than adults do. For example, when the children were explaining theories on light and dark shades, they created new theories. It is not only a matter of adding of white and red paint that makes the shades light and dark, but also the effect of the sun and wind on the paint. Lana was the first one who brought up the sun and wind theory. She thought that the wind made color darker. Then, the other children also made a connection with the sun and wind with shades of color. Olin made comments on the sun and wind theory: "because the wind and the sun got pink and red, and the wind and sun blew the color pink and red into their plate, so it gets darker and then sometimes when you mix it up it gets lighter then

the wind and sun comes down and crushes more pink in". To prove their theories, the children conducted some experimentation. Olin said that the sun makes color lighter and the wind makes it darker. Therefore, the color became lighter, darker, lighter and darker. When the teacher asked Olin why the sun made the paint go lighter, he answered that the reflection of the sun made it lighter. The children's understandings had been constructed and developed in relationship with peers and the teacher based on their understanding of world. Rinaldi (1999) has said that the search for the meaning of life is born with the child and is continually desired by the child. This is why people talk about a competent and strong child. This is the image of a child who actively explores and tries day by day to understand something and to find meaning. The child revealed by this image is no longer understood as lacking or incomplete, but intelligent. The child is capable of making meaning of the world through his or her own experiences. From this perspective, listening played a critical role to understand children's way of thinking and theories.

4.9.2. Teacher as a Co-constructor in Children's Learning. This project also presents the role of the teacher as a co-constructor and supporter of children's learning. The teacher created a context in which the children's curiosities and theories were considered, and a context in which the children were able to experiment with their theories and ideas in search of meaning. I admire Loris Malaguzzi's expression of the teacher's complex role: 'a teacher is sometimes the director, sometimes the set designer, sometimes the curtain and the backdrop, and sometimes the prompter...who is the audience who watches, who sometimes claps, sometimes remains silent, full of emotion, who sometimes judges with skepticism, and other times applauds with enthusiasm' (Rinaldi, 2001b: 89). In this perspective, the teacher in this study denied a passive approach to knowledge; instead, she welcomed children's different theories and ideas, and

helped them construct knowledge and research together. The teacher challenged the children with open ended questions: “why do you think we are painting in the dark today?”, “why is it that the sun makes the paint go lighter?”, “how does the sun make it lighter?”, “what makes the paint light and dark?”, “what do you notice about the people in Monet’s painting?”, “why can’t I see people’s legs?”, and so on. These questions differed from the questions which are not real or genuine questions because the teacher already knows the true answers and only listens for the answers she wants (Dahlberg, 1999). The following excerpt shows children busy trying to grasp the code of what is expected of them from the teacher in a game called ‘Guess what I am thinking of?’ It shows how the question-answer pattern is embodied in the teacher and children.

- Siv: There is something that does not exist in the air in the wintertime. They are in the air now. Some birds are eating them...something that flies in the air... that we talked about last week that has come back now...
- Bosse: What?
- Siv: Yes, what is flying around in the air now... a lot of them...
- Bosse: Birds! Bees! Bumble-bees!
- Siv: Yes, I’m thinking of a very small insect. You said a...
- Bosse: A Bumble-bee,
- Siv: Yes, (hesitating) and what other kinds of small insects are there?
- Bosse: Bees!
- Siv: Hm, there are some more insects...those which come and bite you. Do you know which they are, Alvar? The ones which bite us in the summer and then it itches?
- Alvar: A bee...?
- Siv: Yes, but... (Imitating a buzzing sound),
- Bosse: A wasp!
- Siv: I’m thinking about mosquitos.
- Bosse: What...
- Siv: Mosquitos (Dahlberg et al., 1999, p. 53-54)

This excerpt shows how helpless a child appears, a child seen as an object without his or her own resources and potentials, and a child to be filled with knowledge but not challenged

(Dahlberg et al., 1999). In the same context, Forman (1989) also emphasized the importance of asking good questions to children because good questions help children to think about their thinking and to be curious about their own understanding of events. Rinaldi (2001) stressed that teachers have to be aware of their vulnerability, and accept doubts and mistakes. This kind of vulnerability was presented in the *Shades of Pink* project. While the children and the teacher engaged in the sun and wind theories, the teacher experienced vulnerable moments as the children tried to explain how the sun and wind had an effect on the shades of colors. The teacher was sometimes confused by their explanations. However, she patiently asked questions to the children: why they thought this way and how they thought light worked. These questions produced diverse theories, ideas, arguments and experimentations. Throwing away systems of classification does not mean ignoring enquiry about children and their learning. Rather it demands a rigorous study of the learning strategies of children, both individually and as a group. It makes it possible for the childcare center to be a place of many possibilities and a laboratory for learning and knowledge (Cadwell, 2002). This project reveals the many forms of children's thinking. They questioned and interpreted reality in a context where they could construct knowledge through their relationships with each other and through their ongoing communications with their surroundings.

4.9.3. Learning from Artists. The *Shades of Pink* project also presents how the children learn from artists. It was first initiated when the teacher introduced some artists to the children to promote their concentration and commitment to their work. The work of artists inspired the children to copy Monet's painting. Some people might be concerned with children copying artists' works. However, Kolbe (2001) has explained why this kind of exercise is necessary for

children's learning. All artists at some stage copy images in order to learn. Young children often start drawing by borrowing elements in the drawing of peers. Borrowing is one of the most important factors influencing how children learn to draw. Sometimes, children copy images because they have no confidence in their own drawing abilities. Copying is a significant means of restoring their confidence. However, Kolbe (2001) also emphasized that adults should not force children to copy the images because children know when and what to copy in order to learn how to learn.

Moreover, the children gained concentration skills and commitment to drawing by learning artists' attitudes. In children's learning, discovering the processes of work and the attitudes of artists is more important than simply having knowledge about artists and their finished products. When I went to Reggio Emilia, in Italy to attend the *Atelierista study Tour*, in February, 2006, I had opportunities to listen to Veia Vecchi's lecture about how Reggio educators apply the work of artists to children's learning: when artists work, they choose the place where they feel they can relate to them. Then, they have dialogue with the place and build a relationship with the place. Thus, when Reggio children start a new project, teachers take them to the places where children can explore the new environments; where they can have a "dialogue with the place"; and where they can make their own special relationship with the place. While the children are exploring the place, teachers observe, document, and question the children. This process stimulates children to become more sincere about and committed to their work as professional artists are. In the *Shades of Pink* project, the teacher introduced some artists to the children as inspirations and explained how they work. She described Michelangelo's commitment and concentration while painting the ceiling in the Sistine Chapel.

Afterwards, when the children drew Monet's painting, they showed great commitment and concentration, much like real artists do. To produce a collaborative drawing of Monet's painting, the children took several steps: the children carefully observed the painting; they had arguments over how many people were in the painting; they created hypotheses; they did an experimentation to prove their hypotheses; and they finally produced a collaborative drawing. The drawing took them several days to complete. Throughout the process, the children constructed knowledge of Monet's painting, gained commitment to the project, and built relationships with each other and the painting.

4.9.4. Promoting Learning through art resources. Drawing, painting and other expressive languages produce solidarity, communication with oneself, with things, and with others. Expressive languages offer interpretations and insights about the events that take place around us (Gandini, 2004). Providing children with diverse expressive languages allow us to look at the children's understandings. In order to use different materials as expressive languages, children need time to explore and act on them so that children are familiar with the appropriate applications of different materials (Forman, 1994). According to Giovanni (2004), children build an awareness of what can happen with materials through encounters and explanations. It is essential for children to acquire knowledge of materials, gain competence with them, and use them in a variety ways. Giovanni (2004) also stressed that searching for and discovering how a particular material presents itself and is transformed, helps the child gain knowledge about the material itself, such as texture, form, shape, color, exterior and interior appearance. The child gradually learns that a material can be used in many different ways. Children obtain a large range of knowledge about materials, and this gives them the opportunity to use diverse

languages in their individual procedure of representation and give structure to their own ideas.

While the children were engaging in the *Shades of Pink* project, the children interacted with different kind of art materials and expressed their ideas with those materials.

4.9.5. Interaction with Paints and Brushes. Throughout the *Shades of Pink* project the children showed great interest in mixing paints. The children explored different kinds of brushes that varied in size, length and width. They made diverse marks, put layer upon layer of paint, and spent the time mixing paints and creating colors. Then, the children examined the size of the brush, the bristles and the stick. They created 'fat mark', 'mud foot prints', 'elephant prints', 'dots'; and created long fat lines, long thin lines, short fat lines, short thin lines. The children spent a great deal of time exploring brush strokes. After that, the children's interests in dots and foot prints moved to curiosities about mixing colors, especially the color red. The children looked for things that contained the color, red. This experience helped the children to be aware of various textures and shades of red. Then, the children tried to create light or dark shades of the red by painting. Through the experience of painting, they learned that the repetition of a mark can create textures. As the children continued to explore colors, they requested pink paint. Instead of just offering pink paint, the teacher asked them what color they would need to create pink. The children tried to create color of pink, using red and white paints. The children used an eyedropper to create the same shades of flower that they found. Through this activity, the children acquired the knowledge that you can create diverse shades of pink if you add more red or more white. Moreover, the children thought that the sun and wind also had an effect on the shades of color. The experiences and interactions with paints and brushes helped lead the children to the hypothesis that the sun and wind have an effect on the shades of Pink. This

hypothesis led to various experiments, in which the children tried to prove their theories and construct knowledge.

4.9.6. Learning from Interactions with Artists. The children's learning became more abundant through the interactions with artists. The children acquired artistic techniques from a painter, Michael. He explained that you can create the color pink without mixing paints red and white if your paintings are made completely out of little dots of the paints, red and white. The children put lots of red dots and lots of white dots without mixing them while painting a picture of a tree, then, they stood back and found that it was a pink tree. They also realized that if they use small brush strokes, it would take them a longer time than using big brush strokes. These artistic techniques were introduced to the children not as techniques for their own sake, but to enrich the children's learning and help their understandings. The children also had another opportunity to meet and listen to an artist, Stephen. With the help of the documentation panel, Stephen was able to see the children's learning processes and understand their thoughts and theories. He tried to promote children's understanding about distance by explaining his ideas: "My old sculptures had eyes, but the current ones don't, because they are so far away. Because the further away they are it is harder to see the eyes". Then, he drew a picture to explain the differences between representing things that are close or at a distance: "When things are really far away, we sometimes suggest that they are really far away by making them soft and when they are really close we can make them darker or strong". Stephen influenced Olin's ideas. Olin drew a large knight up close and he drew the knights further back when they got smaller. Interactions with Stephen helped the children understand how artists described distance in their drawings as did Monet, but also the children learned the technique for representing the distance.

4.9.7. *Inspiration from Art Gallery and Art Studio.* According to Kolbe (2001), appreciating works of art first-hand in a gallery can be a captivating experience for young children. And the key to having a pleasant experience with children in a gallery or art museum is to be well-prepared, passionate about the exhibits, and ready to participate in children's experiences.

Episode 3 of my thesis shows how the visits to the art gallery and art studio influenced the children's learning. The children got so excited when they found out they were going to visit the Vancouver Art Gallery. Before the visit, the children and teacher tried to find out and learn about Emily Carr, an artist whose work the children were going to view at the gallery. They spent time looking at Emily Carr's paintings and sketches, and were fascinated by the totem poles and the trees in her drawings. This process helped the children become more motivated and prepared about what they were going to see at the gallery. At the gallery, Jennifer, Olin's mom, challenged the children to think about paintings more deeply by asking questions: "What do you see in this painting?" "What kind of animals do you see?" "What's his face doing?" and so on. The children discovered that the artists signed their names on their paintings. Also, they were excited about being able to see actual artworks they had learned about in books. After the visit, the children became very motivated to learn more about artists and asked the teacher if they could watch some artists working. This suggestion led children to visit an art studio on campus. The children had the opportunity to watch the students working at their easels using palettes. As well, the children were able to observe different kinds of art materials, such as canvas, easels, paints, brushes, tubes of acrylic paints, and sketchbooks. The children were familiar with some materials and some were new to them. The former made the children feel

like artists and the latter provided them with curiosities about new experiments they could try.

The visit to the art gallery further developed the children's interest in Monet's paintings. This shared interest in Monet motivated the children to draw again the *Poppy Field at Argenteuil*, which they had drawn before. Before the children attempted to draw Monet's painting for the second time, they observed more details than they had the first time. The teacher stimulated the children by providing each child with a silk poppy so that they could examine the different parts of the flower in detail. The children drew poppies with charcoal pencils and pen. When Lana started painting a poppy, she asked the teacher if she could paint a poppy at an easel like students she saw in the art studio. She was impressed by students working at easel. After the children gained confidence in describing poppies, they drew Monet's painting on the big sheet of paper together. The poppies they drew for the second time in their drawing were much more exquisite and detailed than they had drawn the first time. After finishing their drawing, the children wanted to paint their drawing. This was a shift; I remembered that when the children drew their first collaborative drawing, they showed no interest in painting it. However, through the experience such as drawing and painting poppies, and visiting the art gallery and art studio, the children seemed to be more confident in their drawing and interested in painting. Painting their drawing of Monet's work presented the children with new artistic knowledge. When the children started painting over their pencil drawing, the teacher introduced them to a watercolor wash and explained the technique for using this material. The children discovered different effects of sponges when they used sponges for the wash. They learned that if they touched the sponge lightly to the paper it made lighter marks, if they pushed the sponge harder, it made darker marks. The children were able to develop and attain different types of knowledge because

the children continue to be exposed to the new artistic environments and were inspired by them.

4.9.8. Multiple Ways of Representing Poppies. Encouraging multiple ways to represent thinking has been a hallmark of the Reggio Emilia philosophy (Edward, et, al., 1998). This approach supports children to represent and re-represent their thinking, both in graphic languages, such as, drawings, paintings, sculptures, and other artistic forms, and in oral and written language (Henderick, 1997). By doing this, Reggio Emilia educators emphasize the importance of observation-based drawing. They believe that observation-based drawing experiences do not restrain children's desire or ability to draw or paint from their imagination. Instead, the experiences balance each other and cover a variety of symbolic and expressive forms: representative and unrepresentative, realistic and abstract. Such experiences balance the desire and competence to engage in a range of expression. Activities, such as drawing a self-portrait, are repeated throughout the year in Reggio Emilia schools, and provide children with opportunities to reflect on their earlier interpretations and perceptions, modify previously held beliefs, and increase observational and representational skills (New, 1993). For example, in Episode 4, each child was provided with a poppy and was able to observe the poppy more deeply. And then, the children talked about the shape, details, and color of the poppies. As the children examined the poppies, they demonstrated that they had constructed knowledge about them: the shapes of petals, the wavy edge of the petals, how they overlap, and so on. Then, the children compared their previous drawing of poppies with the silk poppy. They realized that the petals of their poppies in their first collaborative drawing did not overlap and they didn't have 'the pointy things' on the petals. Then, they drew and re-drew poppies as they obtained more details and information of poppies. We are able to see the children's knowledge building

processes through their drawings. They drew poppies with pencils, pens, and charcoal pencils. The more the children drew, the more details were added. Then, they painted poppies to represent the colors of poppies. Then, the children realized that the paints hid the details and traces of poppies if they drew with pencils and pens. At that point, the children and teacher tried to find a way of keeping the outlines of poppies so that they could preserve details of poppies even as they painted over them. Through several trials using pens, pencils, charcoals, paints and so on, the children and teacher found an effective and beautiful way to present poppies. They used crayon to describe shapes of poppies and painted them with water colors which still showed the details of poppies. This process shows the children's knowledge building processes through the representations of poppies in diverse ways. The more the children drew poppies, the more knowledge of poppies was accumulated.

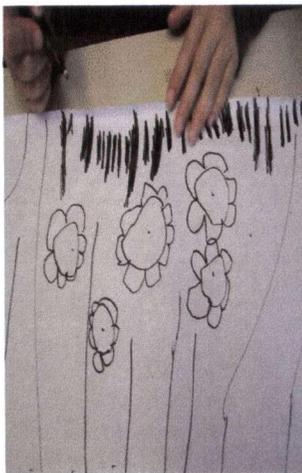


Figure 4.41.1

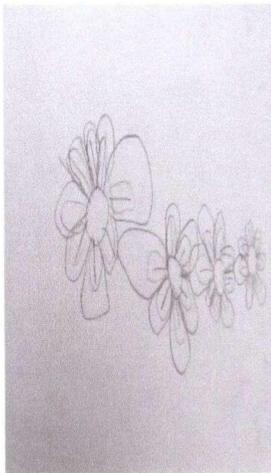


Figure 4.41.2

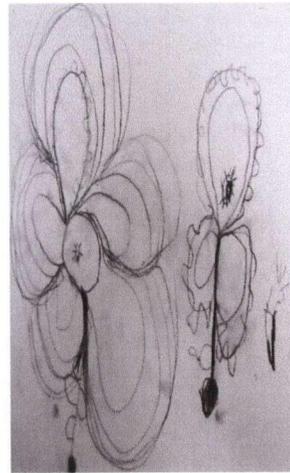


Figure 4.41.3



Figure 4.41.4

Figure 4.41.1. Drawing poppies with pencil before observing a silk poppy.

Figure 4.41.2. Drawing poppies with pencil after observing a silk poppy.

Figure 4.41.3. Drawing poppies with a charcoal.

Figure 4.41.4. Painting a poppy with water color.



Figure 4.42.1

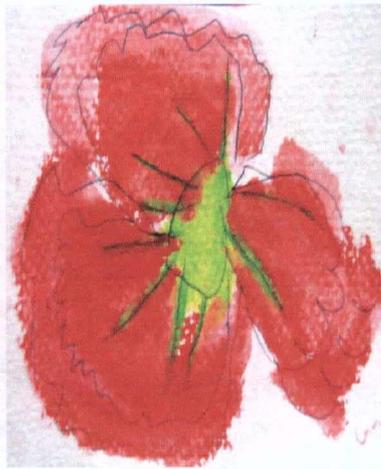


Figure 4.42.2



Figure 4.42.3

Figure 4.42.1. Drawing a poppy with a pencil and painting it with water color.

Figure 4.42.2. Drawing a poppy with a pencil, redrawing with pen strokes on the top of the pencil traces, and painting it with water color;

Figure 4.42.3. Drawing a poppy with crayons and painting it with watercolor.

4.10. The Role of the Pedagogical Documentation

4.10.1. Parents' Involvement in Documentation. According to Loris Malaguzzi (1993), a documentation-based curriculum provides a natural link between home and school. Malaguzzi suggests that documentation helps parents understand the teacher's teaching strategies and children's learning experiences within the classroom environment. Through documentation panels, parents are able to observe children's learning processes, their interaction with peers and the resources in the environment. Therefore, parents are able to make the links between their own understanding of their child and the way the child works in the classroom.

Moreover, documentation panels invite parents to become co-constructors in the children's learning and share their perspectives of children's learning in activities. Parents can be enormously helpful in interpreting documentation and can support their children's developing

ideas with their own expertise. In this way, children's learning can be more abundant and appreciated. Episode 2 describes how the pedagogical documentation panels helped parents to understand children's learning processes and assisted children to recall their previous activities by revisiting them. The documentation panels are arranged as summaries of the main episodes: initial remarks explaining the beginning of the project, presentation of children's hypotheses, project examples from some of the children, and pictures and descriptions explaining the development of the work. With the help of documentation panels, one parent, Michael, was able to understand the children's theories, their interaction with peers and the resources, and the children's ways of constructing knowledge and making meaning. In this sense, parents can be enormously helpful in interpreting documentation, supporting children's learning, and provoking their learning. In short, the documentation is valuable for promoting parents' involvement in children's learning, which, in turn, can be more abundant and valuable with their support. Thus, parents can become co-constructors of the classroom program by sharing their own perspectives on learning, and by seeing what goes on as the children interact with each other, their teacher, and with materials and phenomena.

4.10.2. Enhancing Children's learning through Documentation. The characteristics of pedagogical documentation, that is, keeping record of children's learning processes by presenting children's ideas, conversations, experiences, memories and pictures of their work provide opportunities for children to revisit projects and provoke ideas for further investigation. Malaguzzi (1993) suggested that through documentation children "become even more curious, interested, and confident as they contemplate the meaning of what they have achieved" (p.63). The documentation panels provided opportunities for children to revisit their projects, to

provoke ideas for further investigation, and to examine their own thinking and the thinking of others on the project topic. Such examination allowed the children to make clear, deepen, reevaluate and change their thinking about the topic (Katz & Chard, 1996). Through revisiting the documentation, children's metacognition can be developed. For example, when the children came back from Christmas holiday, the teacher needed to bring back children's interests and motivations to continue their project. By revisiting the documentation on previous activities, the children were able to recall their previous activities and theories, regain their interests, discuss their work on the project, and examine their own thinking and the thinking of others on the project. When the children revisited the earlier documentation, they showed huge interest in their collaborative drawing of Monet's painting. Then the children talked about what each of them had drawn while they were looking at the documentation: "I drew the bushes, the house, really a tower. The grass, I did the biggest ones, beanstalk grass to climb up", "I drew the poppies". Then, the teacher brought out some of the children's theories by asking questions: "Why can't I see people's legs?", "I remember Lana, you thought there was only one person." Then Lana answered the questions by explaining the drawing they created: "They are two people, it's the same people. You couldn't see as well as in the other book". Silvia said that "because she's pointing her head down", then Olin said "Lana thought she was stuck to the bush, Look, look, they do have eyes, they have tiny, tiny eyes". Such an examination of documentation allowed the children to clarify, deepen, and reevaluate and change their thinking about the topic, but also, the pedagogical documentation gave the children the sense that their accomplishments were respected and valued by their teachers and other adults. When children know that their work is treated with respect, they become more serious about their work and

activities (Katz & Chard, 1996).

4.10.3. Teacher Planning and Evaluation with Children through Documentation.

Documenting children's learning allows teachers to deepen their understanding of children's strengths, interests and process of their learning since documentation panels provide multiple versions of children's understanding showing how children's ideas are changing over time. Also, the documentation panels allows teachers to create a visible record of the experiences of the learning group and is viewed as "a powerful means of communicating to all interested parties what has been learned in a significant experience" (Reggio Children, 2001, p. 27). The documentation panel helps teachers use schemas to enhance the process of critical thinking and help their children build the structures that are essential for learning. In the *Shades of Pink* project, the teacher used the earlier documentation to provoke children's memory and rekindle the excitement they had before the holidays. The teacher was also able to examine the children's interests and understandings about the project topic. With the help of documentation panels the teacher discovered materials, activities, and teaching strategies that led to the later project. The teacher recognized that the children were still interested in Monet and other artists while they were revisiting documentation. Based on this information, the teacher planned activities which could promote children's learning, such as visiting the Vancouver Art Gallery and the campus art studio. Thus, documentation allows a teacher to assess children's development, discover the child's thinking on the topic, and offer meaningful learning experiences that will build a bridge, or "scaffold," to advanced thought development (Berk & Winsler, 1995). Through examining documentation, teachers understand what the child already knows and what the child wants to know about the topic. Therefore, the documentation assists

teachers in getting useful information about children's needs and helps children to attain the next learning stages. I believe that children's learning assessment should be focused more on learning processes rather than passively learned skills or knowledge. Documentation panels help a teacher and children to evaluate how the children build collective knowledge and also what they learned individually through the stages of their project. Documentation panels that exhibit photographs of children's actions, children's drawings, children's languages, and teacher commentary on project activities gives the teacher and children a clear understanding of the process of children's learning. The documentation is displayed in the hallway where the teacher and children walk everyday so that the children and teacher can always share and evaluate the project together. The visibility of the documentation helps everyone learn.

4.10.4. Making Children's Learning Visible. Pedagogical documentation is valuable in terms of presenting children's learning processes and experiences through the display of photographs, videotape, descriptive notes, samples of children's works, transcripts of children's comments and conversation and teachers comments (Goldhaber and Smith, 1997). With the help of documentation panels, children's expressive symbolic languages, such as drawings, painting, building, sculpture and collage become explicit. Young children have limitations in expressing their ideas and knowledge because they are developing linguistic competence. Documentation makes children's learning visible by revealing their diverse symbolic languages in ways that are valuable for assessing children's learning. It helps the adults in their lives understand their ideas and the representations of their theories.



Figure 4.43. Documentation panels in a hallway.

Concluding Phase

This case study presents children's knowledge building processes and their various knowledge representations while they were engaging in the project, *Shades of Pink*. This study suggests several characteristics of productive learning that are worthwhile to review:

4.11. Learning in the Learning Group

While engaging in the *Shades of Pink* project, Olin, Silvia, Lana, Jade, Nell, and Michelle wondered together, shared and exchanged their ideas, compared what they produced, and stimulated each other in the processes of knowledge development. The teacher also encouraged the children to work together by asking challenging questions. Through group learning, the children became capable of incorporating strategies and solutions, and developing competency. The thought of each child contributed to the discussion with others and this allowed the ideas to evolve and to develop within the group. In the process of developing knowledge, the children's theories were modified with a constant exchange of information,

explanation, opinions, and experiments. Krechevsky (2001) explained that the quality of group learning is different from individual learning; collective knowledge requires constant comparison, discussion, and modification of ideas that are not accessible to individuals working alone. In this sense, the children in this study learned from the questions that they asked one another, made hypotheses together, exchanged their thoughts, and experimented with their theories. The children's comments and interpretations led them to critical ideas that preceded the group work.

4.12. Representing Thoughts in Diverse Ways

In this study, the children's learning processes were visualized with the help of art media which children chose to represent their ideas with. The drawing presented a window into the cognitive order for the child, for the teacher, and for other children to whom the child was communicating with (Forman, 1998). For example, the children represented poppies several times, using different kinds of art materials. The more the children represented poppies, the more details were added. By comparing the children's first representation of poppies and those after they had stimulating experiences, we are able to see the differences. Also, representing poppies in diverse ways helped the children consolidate knowledge and improve their understandings of the flower. In addition, the children figured out which material had effects on others rather than just trying to describe how a poppy looks. For example, the children drew poppies with crayon and painted them with watercolor to describe details and color. By doing this, they were able to describe poppies in the multiple ways they could.

4.13. The Necessity for Documentation

The pedagogical documentation enables us to observe how the children built knowledge and represented it during the *Shades of Pink* project in the Reggio inspired classroom. This is in accordance with the purpose of my thesis: investigating children's knowledge building processes. In this perspective, pedagogical documentation played a significant role to illuminate the knowledge of six four-year-old children's development processes. Krechevsky (2001) defines the heart of documentation as revealing the nature of individual and group learning in four ways, which we can also witness in this study. First, documentation makes children's ways of constructing knowledge visible to both adults and children. Second, documenting children's learning can help create a collective memory for the group, allowing children to return to their thoughts and ideas and pursue them both individually and in groups. Thirdly, the act of documenting changes teachers' understanding of what goes on in the classroom. It encourages teachers to reflect on and understand the deeper meaning and value of a learning experience. It encourages teachers to compare what they thought they would observe to what really went on, and informs their decisions about where to go next. Finally, documentation contributes to children's own developing understanding of how they learn, and how others learn. It offers them an opportunity for reflection, for evaluation of other children's theories and hypotheses, and for self-assessment.

This study was an exciting journey for me as I experienced children's learning processes in the Reggio inspired classroom. Among the many findings from this study, I was most impressed with the discovery of the image of Malaguzzi's competent and strong child who has one hundred languages and is born with endless possibilities, expressions and potentialities. The children in the study were capable of relating and interacting with others, and capable of

accepting conflict. Through interacting with others, the children became competent to construct theories and make hypotheses, and to build relationships of solidarity. It was possible because the teacher supported the children with a context in which children's curiosity, theories and research were respected and heard. In this context, the children felt comfortable and confident, motivated and respected in their learning processes. The teacher was aware of vulnerability and she accepted uncertainties. In addition, the teacher encouraged the children to have their own theories, interpretations, and to make hypotheses and test their theories in order to be protagonists in the knowledge-building processes. This kind of environment promoted children's autonomous learning.

Recommendations for Future Study

For this study, I investigated how the children constructed their knowledge using art as a learning and knowledge representation tool in one Reggio inspired classroom. I believe that this investigation of children's learning experience broadens the scope of available approaches to early childhood education in the Canadian context. Specifically, this study confirms the significant interrelationships between children's learning and art. In this study, I used a teacher's pedagogical documentation of children's learning around project work as one of the data sources. The pedagogical documentation of children's thoughts, interpretations, art products, and the teacher's comments played a primary role to assess children's learning experiences. The documentation provided me with deeper understandings of children's learning processes and teachers' teaching approaches. Through this study, I found many interesting layers to characteristics of the pedagogical documentation. Research on exploring the characteristics of

the pedagogical documentation is necessary since it will contribute to the quality of early childhood programs including children's learning enhancement and teacher planning and evaluation. In addition, as Dahlberg (1999) pointed out, we are able to look at the philosophy behind the images of children and the discourses embodied and produced in early childhood institutions through pedagogical documentation. Therefore, the study of pedagogical documentation will provide practical ideas to teachers who want to use the pedagogical documentation in their own practices.

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Analysis purposes

For the purpose of naturalistic observation, the amount of time allotted to each session will not be kept to strict time limitations. Children will be audio-tape recorded, for data analysis purposes. During audio-taping, those not participating will be excluded and will be involved in alternative activities. Audio-taping is necessary to conduct this study as audio-taping provides detailed interactions between children and art materials that are the vital aspects of this study. Your child can withdraw participation from the study at any time.

Confidentiality:

Any information gathered in this study will be kept confidential with the researcher. The identity of all participating children will be disguised and will be kept confidential through the use of pseudonyms in copies of all documents. We are interested in your child's views and experiences but what your child tells us will not be linked to your child's real name. Your child's real name will not appear in any reports about this research. Data records will be kept by the researcher for 5 years after the completion of the project and will then be destroyed.

However, if a child says they have experienced any kind of abuse by anyone, the researcher is required by law to report it to the authorities; the Director or a designated social worker (Ministry of Children and Family Development).



Consent:

Your child's participation in this study is entirely voluntary. Your child may withdraw from the research study at any time without jeopardy to continuing participation in the childcare center program.

Your signature indicates that you consent to participate in this study.

I consent /I do not consent to [children's names] participation in the study entitled: "Art as a Representation of Children's Learning Experience", as described above.

Signature: _____ Date: _____

I consent /I do not consent to audio-taping during the study.

Signature: _____ Date: _____

I consent /I do not consent to include pictures of my child's art works, such as, drawings, sculptures, paintings etc, in the master's thesis of the researcher.

Signature: _____ Date: _____

I consent /I do not consent to include photographs of my child at work in the master's thesis of the researcher.



Faculty of Education
Department of Curriculum Studies
2125 Main Mall
Vancouver, B.C. Canada V6T 1Z4
Tel: (604) 822-5422 Fax: (604) 822-4714

Signature: _____

Date:

Printed Name of the Subject, Parent, or Guardian signing above.

PLEASE KEEP THIS LETTER FOR YOUR FILES AND RETURN THE ATTACHED CONSENT FORM.



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2125 Main Mall
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PLEASE RETURN THIS CONSENT FORM TO THE RESEARCHER WITH A PRE-ADDRESSED, STAMPED ENVELOPE.

I consent /I do not consent to [children's names] participation in the study entitled: "Art as a Representation of Children's Learning Experience", as described above.

Signature: _____ Date:

I consent /I do not consent to audio-taping during the study.

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I acknowledge that I received a copy of the letter and consent form for my own files.

Signature: _____

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Your participation in this study is entirely voluntary. You may refuse to participate or withdraw from the research study at any time without jeopardy to your employment.

Your signature below indicates that you have received a copy of this consent form for your own records.

Your signature indicates that you consent to participate in this study and allow the research to use your documentation of the children's project.

Signature: _____ Date:

Printed Name of the Subject signing above.