A DISCURSIVE EXPLORATION OF CHILDREN’S SCHOOL GARDEN EXPERIENCES, PERSPECTIVES, AND DEVELOPING ECOLOGICAL LITERACIES

by

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ABSTRACT

Research has largely neglected ways to explore how school gardens are used, the quality of the children’s garden experiences, and the educational possibilities including the process of supporting children’s ecological literacy. The purpose of this study was to better understand the possibilities for discourses in and around current garden-based education and ecological literacy while making space for an emergent and narrative research design. This qualitative study draws upon phenomenological and narrative methods to understand children’s garden experiences and is synthesized and analyzed through ecological place-based framework and the notion of crystallization. This study’s findings provide an enriched understanding of children’s diverse school garden experiences and perspectives while supporting their developing ecological literacies.
PREFACE

This research study obtained the approval of the UBC Research Ethics Board (Behavioural Research Ethics Board; UBC BREB Number: (H11-02155).
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I am also grateful for the philosophical and pedagogical support and guidance of my colleague, Julia Ostertag, who inspired me to take risks and pay close attention to the children in this thesis. To Dragonfly, I can’t thank you enough for your openness, your belief in this process, and the importance of involving children in research- thank you for letting me share your classroom for a year.

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DEDICATION

I dedicate the following chapters to many people: to the 28 children who became co-researchers with me in this study—thank you for being brave, honest, creative, and critical. I feel better about the world knowing that children like you are taking the reigns… what a privilege to have learned from and with you in this process of inquiry.

I also dedicate this thesis to my mother, Veronica Moore, who, although she did not have the educational opportunities I have enjoyed, was my first teacher in life, inspiring curiosity and wonder at the beauty and mystery of life. Thank you for showing me that being self-taught rivals any university education, that knowing how to think is more important than knowing what to think, and that feeling is even more important than knowing. Thank you for encouraging me to closely inspect the wings of butterflies, the veins of leaves, and the patterns of stars—to find connections and to always foreground the wonder of being. This is for you.
CHAPTER ONE: PLANTING SEEDS

Figure 1 Photo by Chef Worm (Gr. 5 student)

Preparing the Soil

A child’s world is fresh and new and beautiful, full of wonder and excitement. It is our misfortune that for most of us that clear-eyed vision, that true instinct for what is beautiful and awe-inspiring, is dimmed and even lost before we reach adulthood.

- Rachel Carson, The Sense of Wonder, 1956
This thesis is a qualitative case study (Merriam, 1988, 1998; Stake, 1995; Yin, 2003) of a Grade 4/5 class engaged in school garden activities and discourses. As I type and endlessly copy, paste and rearrange the text of this thesis, I am reminded of ‘Sunflower’, a Grade 4 boy in this study, who, on my last day as I said goodbye and told the children I would be spending my summer writing this thesis, said “You can’t just type, type, type! Summer’s for having fun!” And so, I introduce this thesis with Rachel Carson’s (1956) famous words on the importance of cultivating and retaining a sense of wonder, even as an adult sitting at a computer for days on end, struggling to articulate the previous seven months spent in the garden with 10 and 11 year olds.
I want these children to know that I frequently leave my desk, wander down to my community garden and think of them as I check on the tiny kale plants that were born of the same seeds also planted in their school garden. I want these children to know that their photographs of the garden (photography being a research method the children almost unanimously engaged in and visibly enjoyed) are intentionally incorporated in this text as one of their contributions to this study. I see my typing and their photographs as a weaving of our voices that depend upon each other to tell this story; just as an ecosystem depends on the myriad organisms to make it whole.

Gardens as educational places ask us as educators and as learners to value process over product and attend to the moment as it unfolds. School gardens encourage us to look for connections between subjects and ecosystems; to embrace spontaneity and sensuality as well as critical thinking and experimentation. Garden-based learning is difficult to measure or quantify (Thorp, 2006), as gardens are innately messy, fecund, and ever-changing places. Exploring the appropriate methods for research in this area is certainly a challenge. Throughout the design and writing of this thesis I have tried to attend to the complexity of discourse, to take my cues from the children, and to echo the rhythms and cycles of the garden.

My Voice

Prior to this study, I spent several years teaching children in gardens. As a classroom and garden educator trained in the Reggio Emilia teaching philosophy emphasizing pedagogical observation and documentation, and themed project work (Edwards, Gandini, & Forman, 1995), I have accumulated stacks of notebooks with stories, drawings, and quotes from children whom I have taught over the years. These notebooks are also infused with my own reflections,
questions, initiatives, and challenges. My observations and this reflective writing process, prior to and throughout this study, have led me to ponder how best to describe the embodied gardening experiences of children as well as their potential curiosity, hesitancy, and wonder that often accompany these experiences. I was also curious as to how the children perceive these gardens and their role within them.

Over the course of the seven months I spent with these children, I also found that my voice, experiences, and perspectives could not be subtracted from this discursive exploration. The place of the school garden invited theoretical discussion, imagination, academic learning, and the cultivation of relationships. Throughout the writing of this thesis I am striving to describe these holistic experiences while taking care to acknowledge my own positioning, interpretations, and voice.

Written in an intentional first-person voice, the text of this thesis borrows its chapter titles from selected growth stages of a plant (e.g., ‘preparing the soil’, ‘planting seeds’, ‘pollination’, and ‘bearing fruit’) as an attempt at ‘an ecology of writing’ and as a reflection of my own journey within the writing practice. In Chapter One, Planting Seeds, the child/nature disconnect is explored as a recent phenomenon that has led to a growing appreciation for school gardens. As well, this first chapter introduces the background to this thesis, my problem statement, research questions, and significance of this study. Chapter Two, Germination, provides a comprehensive literature review detailing the history of school gardens and explores my relationships with existing studies and theoretical perspectives. In Chapter Three, Pollination, I describe in detail the qualitative methodologies and methods used in this thesis and illustrate the collaborative and interconnected nature of this study. Moreover, in this chapter I explain my
rationale for selecting progressive and discursive methods as the foundation for a holistic presentation of the data.

In Chapter Four, *Bearing Fruit*, I borrow the fertile metaphor of ripening fruit to present the qualitative data that emerged through the discursive methods and methodologies detailed in Chapter Three. In Chapter Five, *Sorting Seeds*, I highlight my voice as the researcher as I intuitively interpret, organize, and synthesize the data in response to my guiding research questions. Finally, in Chapter Six, *Planting Seeds/Beginning Again*, I reflect on the emergences in Chapter Five and my learning experiences throughout this study. I also make suggestions for future studies and offer my final thoughts for the bearing of this study on the practice of teaching and conducting research with children.

**A Discursive Journey**

In this study I feel privileged to have had the opportunity to draw upon the formative practice of observation, documentation, and reflection through a systematic exploration of children’s experiences and perspectives as manifested through school garden discourses. This journey has encouraged me to foreground the voices of the participating children as capable co-researchers (Veale, 2005), to attempt to suspend my assumptions about how children feel about gardens and how children prefer to engage in research, and also to position myself as a co-learner (Edwards, Gandini, & Forman, 1995; Hill, 2005) and participant (Marker, 2009; Woodhead & Faulkner, 2000) in this research process. It is my hope that this thesis might gesture towards the multiple (and sometimes unexpected) ways in which children perceive of and engage with our natural world and to embrace the diverse ways children choose to express these perspectives.
Understanding the Components of the Child/Nature Disconnect

As a child I had the privilege of growing up in a small, rural town on the Big Island of Hawaii. I spent my days rarely wearing shoes, mixing ‘potions’ in mud puddles, becoming familiar with the delicate legs of enormous spiders, the unforgettable aroma of over-ripe mangoes, and the sounds of wild pigs foraging in our taro patch. My family lived off the grid in large tents for six years. The boundaries between our daily routines and the natural world were permeable and fluid.

In stark contrast, many years later on my first day of teaching at the Brooklyn Botanic Garden in Brooklyn, New York, a six-year-old student bent down to the ground in amazement, exclaiming, “It’s real grass!” I could not fathom at six years of age not knowing how to climb a
tree or that carrots grew underground, let alone touching grass for the first time. My urban students were confident in navigating a complicated subway system but were, in my estimation, foreigners to the natural world. I was fascinated and dumbfounded.

My observations of urban students’ experiences in Brooklyn planted a seed for the generation of this thesis. As a starting point for this study, it was necessary for me to explore literature outlining the problem concerning the rise of urbanization and the context of our 21st century lives that affords little space or time spent in nature. It was important for me to understand how our North American lives came to be dominated by a “de-natured” existence (Louv, 2008, p. 26), and even a discomfort with and fear, or ‘ecophobia’ (Sobel, 1996) of being outside.

**Moving Indoors**

Beginning with the Industrial Revolution in 18th century Europe, people began flocking to urban centres where they sought career opportunities and unprecedented technological innovations (Desmond, Grieshop & Subramaniam, 2004). This mass exodus of people from rural areas to cities continues today. Studies estimate that three quarters of global population growth occurs in urban areas (Desmond et al., 2004). Over the course of the 20th century the North American landscape shifted from primarily agricultural land to one dominated by cities and suburbs with over 80% of American citizens currently residing in urban areas (Blair, 2009). This major population shift away from agricultural land was reported by the United States (U.S.) census indicating that farm population dropped from 40% in 1893 to just 1.9% in 1993; correspondingly, the U.S. census no longer surveys farm residents (Conologue, 2001). Although urbanization facilitated advances in technology, industry, and healthcare, several educators and
environmentalists argue that this progress has largely been at the expense of healthy ecosystems as well as human relationships with nature (Louv, 2008; Orr, 2004; Sobel, 1996).

Especially for children, this disconnect with nature often correlates with a lack of physical exercise and a largely sedentary, indoor lifestyle, which is deeply concerning to some educators, health experts, psychologists, and parents. Several studies suggest links to a severe increase in childhood obesity (Centers for Disease Control, 2011; Ogden, Flegal, Carroll, & Johnson, 2002;) and depression (Kahn Jr., 1997; Kaplan & Kaplan, 1989) as well as to children’s overall lack of awareness of and appreciation for the natural world (Carrel, 1997; Fjortoft, 2001; Gaylie, 2009; Houghton, 2003; Kahn Jr., 1997; Louv, 2008; Nabhan & Trimble, 1994; Sobel, 1996).

Richard Louv’s best-selling book *Last Child in the Woods* (2008) cites multiple studies and statistics which demonstrate that urban children are often discouraged from engaging in open exploration of natural environments and frequently lack the skills and confidence to navigate and make meaning of these landscapes. Louv (2008) suggests that much of this is born out of a fear on the part of adults that children will get injured or be abducted by strangers if they are left unsupervised or allowed to independently explore outdoor environments.

**School Yards Become Backyards**

Currently in the United States (where, outside of the United Kingdom, the majority of school garden research has been conducted), especially in urban areas, both parents frequently work full-time leading to children spending extended days at school, in some cases up to 10 hours a day (Blair 2009; Kellert, 2002). Several educators, sociologists, and researchers consider
the combination of the long workdays of parents and an urban cultural perception of nature as ‘other’ or even as dangerous, as creating a widening gap between children and the natural world (Louv, 2008). This context presents new challenges for urban schools, as schoolyards become ‘backyards’ for children. As educators and landscape designers become aware of this shift, there is an increasing desire to create a safe, dynamic, experiential, and multi-faceted school landscape complete with a range of ecosystems and learning possibilities to address the issues of urban children’s health and developmental needs (Herrington, 2005; Houghton, 2003; Moore & Wong, 1997). While not all North American schools recognize the need for children to spend time in nature, there is a growing acknowledgement of the benefits of these experiences, and school gardens are increasingly sought as an important component in these types of natural schoolyards (Blair, 2009; Herrington, 2005; Houghton, 2003; Moore & Wong, 1997). Blair (2009) offers an evaluative review of the benefits of school gardens and writes that “gardens ground children in growth and decay, predator-prey relations, pollination, carbon cycles, soil morphology, and microbial life: the simple and the complex simultaneously” (p. 17). In essence, Blair (2009) considers school gardens to have the potential to teach children the many cycles of life and the interconnectedness of natural systems.
School Gardens Are Not a New Idea

With increasingly urban populations of children disengaging with nature, school gardens can present consistent opportunities for children to reconnect with the natural world in meaningful and developmentally appropriate ways (Blair, 2009; Gaylie, 2011; Herrington, 2005; Louv, 2008; Sobel, 1996). A more detailed historical overview of school gardens will be presented in Chapter Two, but here it is important to note that school gardens are not a recent phenomenon. North American school gardens served as prominent experiential learning contexts at the beginning of the 20th century, at crucial points during the world wars to remedy food shortages, and during the 1960’s during progressive social reforms (Gaylie, 2011; Hayden-Smith, 2006). After a waning interest during the 1970’s 1990’s due to increased social and fiscal
conservatism, school gardens in Europe and North America are recently enjoying a renaissance as important outdoor classrooms (Blair, 2009; Gaylie, 2011). Beginning in the mid-1990’s, this resurgence in school gardens is largely due to a growing public awareness of climate change and environmental issues with the need to educate children on these topics; progressive educational reform focused on experiential pedagogies; and the local food movement inspiring citizens to connect to their food in meaningful ways (Blair, 2009; Gaylie, 2011).

This renewed interest in school gardens is gaining momentum in the U.S. and Canada. Although this burgeoning interest is encouraging, the inconsistent presence of school gardens throughout history as well as their continued marginalization in school systems and research communities suggests a need for further research in this field (Blair, 2009). Recent school garden research indicates that many educators and researchers misunderstand the initiatives of school gardens as being novel, progressive, and even romantic (Blair, 2009; Gaylie, 2009b, 2011), while others consider it a utilitarian and degenerate return to agricultural ways with no ‘real’ educational value (Flanagan, 2010). I suggest that these dismissive views on the role of the school garden suffer from a lack of understanding of the historical prominence of school gardens as well as the multiple and sometimes subtle benefits of garden-based learning, especially in an urban context. While opposing and uninformed attitudes towards school gardens perpetuate their marginalized status, the mainstream view of school gardens can be summarized as that of a luxury, an aesthetic add-on peripheral to classroom learning, or worse, a burdensome responsibility for teachers (Blair, 2009; Howes, Graham, & Friedman, 2009).
Problem Statement

While still facing many challenges such as a lack of funding, resources, supportive administration, teacher training, and public acceptance, currently, school gardens are beginning to be recognized as important learning spaces that enhance academic achievement, support child development and help remedy behavioural issues, improve children’s eating habits, and develop ecological knowledge and connections (Blair, 2009; Gaylie, 2009, 20011; Graham, Beall, Lussier, McLoughling, & Ziderberg-Cherr, 2005; Howes et al., 2009; Lieberman & Hoody, 1998; Louv, 2008; Morris, Briggs, Zidenberg-Cherr, 2000, 2002; Morris, Neustadter, & Zidenberg-Cherr, 2001; Sobel, 1996). The Toronto School District (Ontario, Canada) is the first in Canada to have a dedicated department of Environmental Education, affirming school gardens as important learning tools that help children understand the interdependence of natural and human systems (Houghton, 2003). Similarly, in 1995 the state of California embarked on the initiative ‘A Garden in Every School’ with the goal for all 8,500 California schools to have a school garden by the year 2025 (Morris et al., 2000). Although I recognize the well-intentioned efforts of installing school gardens in every school, I see potential for this to result in a superficial and ‘trendy’ educational initiative lacking contextual sensitivity and cultural understanding. School garden research has largely neglected to explore how these gardens are used and to what degree, as well as the quality of the children’s gardening experiences (Blair, 2009; Howes et al., 2009).

Although a renewed interest in school gardens as invaluable outdoor classrooms has been gaining increased attention (Assadourian, 2003; Blair, 2009; Desmond et al., 2004; Gaylie, 2011), we are currently in the early stages of school garden research. While the body of research is budding, it remains largely quantitative and short-term, with the majority of studies focused on
measuring academic achievement (Lieberman & Hoody, 1998) and children’s vegetable intake (Morris et al., 2000, 2001, 2002). Although I encountered several studies that illustrate the extensive (and measurable) benefits of school gardens (Blair, 2009; Gaylie, 2009, 2011, Graham et al., 2005; Howes et al., 2009; Lieberman & Hoody, 1998; Morris et al., 2000, 2001, 2002), I found only two studies that documented the holistic experiences within the school garden (Thorp, 2006; Gaylie, 2011); Gaylie’s (2009, 2011) work was the only Canadian school garden research I found that was situated in British Columbia.

In addition to the small body of school garden research, the methodologies and methods (largely being quantitative surveys) currently used in this field often do not reflect the contextual, sensual, complex, and sometimes, profound learning experiences occurring in these outdoor classrooms. Because of this oversight, often the children who experience these gardens are silenced as their stories and voices as co-researchers are not included in the research process. Gaylie (2011) duly notes the lack of pedagogical research conducted by students and teachers as contributing to an insufficient and diluted representation of school garden experiences. Due to a lack of resources and limited public understanding of the educational role of school gardens and their potential to support ecological literacy, as well as a deficiency in holistic research documenting related experiences, school gardens remain an often misunderstood and seemingly unattainable luxury for many schools.

**Personal Journey to the Research Questions**

As an avid gardener and one for whom time spent in nature is not only necessary but also transformative, I consider nature explorations to be deeply beneficial learning experiences. My early education was launched through home-schooling until Grade 3; I learned math, science,
reading, writing, and art through cooking, gardening, and nature observation. And while I have taught children in gardens outside of the public school system prior to this study, I wanted to witness the everyday challenges and potential of a public school garden. I wished to understand the logistics required for coordinating a large class of elementary students in their school garden. Also, I was interested in ways to connect classroom experiences and the mandated curriculum to gardening activities. I was eager to join a classroom engaged in a school garden project to document the student’s experiences and discover how children express their garden experiences through listening to their stories.

As a precursor to this process, I reviewed relevant literature to understand what has been examined in school garden research thus far. I encountered only two studies that documented children’s qualitative garden experiences (Thorp, 2006; Gaylie, 2011). I did not come across any school garden research that encouraged the participation and voices of the children as co-researchers expressing their ecological literacies; that is, their understanding of and appreciation for the interconnected ways ecosystems sustain themselves (Chapra, 2005). This lack of research highlighted that, to date, there has been little emphasis on the ‘pedagogy’ of school garden research specifically studies exploring age-appropriate methodologies and methods that might invite children to express their diverse gardening experiences and perspectives. I wanted to ‘become the learner’ (Marker, 2009), to discover first-hand how a school garden is perceived and experienced by the children, and the multiple methods through which these children might choose to express these experiences and perspectives. Hence, this study is guided by the following questions:

- *What are the experiences and perspectives of middle-elementary-aged children participating in school garden discourses in a British Columbia school?*
• **How might school garden discourses support children’s ecological literacy?**

In an attempt to respond to these guiding research questions, this case study seeks to explore and document children’s school garden experiences, perspectives, and developing ecological literacies while considering the role of discourse as a research pedagogy. This exploration aims to foreground the contributions and voices of the participating children while making explicit my voice as the researcher. This objective is put forth as an effort to better understand the possibilities for discourses in and around current garden-based education and ecological literacy while making space for an emergent and narrative research design (Connelly & Clandinin, 1990; Cresswell, 2008).

**Significance of this Study**

What is significant about this case study is that unlike the majority of the literature reviewed for this study, my research was inspired and guided by multiple perspectives including phenomenological (; Danaher & Briod, 2005; Jardine, 1998; Van Manen, 1990) and narrative (Connelly & Clandinin, 1990; Cresswell, 2008) methods with the intention of incorporating the participating children as co-researchers (Emond, 2005). This pedagogical and sociological perspective of children as capable co-researchers, which is inspired by the New Sociology of Childhood (Christensen & Prout, 2005), recognizes children as social actors with intelligent voices worth listening to. In this thesis, the children’s voices are expressed through their photography, journals, transcribed interviews, collective art projects, and hands-on gardening work. My photographs in this thesis (figures 21, 23, 68, 74, 75) document the children engaged in these research methods. The children’s photography is woven throughout the text of this
thesis (figures A-20, 22, 24, 26, 54-57, 69, 70, 72, 73, 76) as an effort to honour and make visible their contributions to this study and to enrich the story of this thesis.

**Chapter Summary**

As an introduction to this thesis, Chapter One has made clear that while school gardens are not a new initiative, school garden research is an emerging field. The problem statement illustrates the need for school garden research to explore the quality of children’s garden experiences while including their voices in the research process as an effort to educate the public on the diverse educational possibilities of school gardens. This chapter offered guiding research questions foregrounding discourse as a research pedagogy in the exploration of children’s school garden experiences, perspectives, and ecological literacies. The following chapter presents a comprehensive literature review detailing the history and recent renaissance of school gardens, as well as existing school garden research in the areas of nutritional education, academic achievement, and Environmental Education.
CHAPTER TWO: GERMINATION

Exploring the Literature

The process of germination comprises “the beginning of a growth of a seed, spore, or pollen grain” (Capon, 2005, p. 227). This chapter adopts the metaphor of germination as the initial growth stage in the life of a plant, (or in this case, the writing of this thesis) to acknowledge the importance and influence of existing literature to this study. Guided by my research questions, I chose to focus on school garden literature detailing the history and uses of these unique learning spaces as well as related studies exploring children’s experiences of nature. This literature review provided a basic understanding of school gardens and initiated a ‘germination’ of ideas that informed the inquiry process that followed.
School Gardens: A Renaissance

Just as ecosystems are cyclical rather than linear, so have been the seasons of school gardens throughout history. And while it is difficult to pinpoint an exact beginning, we can look back in time and see how the metaphorical seeds have dropped and when conditions have been favourable to enable school gardens to germinate, thrive, and blossom. In this literature review I will expand upon my earlier point that school gardens are not a new idea; rather school garden research is a relatively new and developing field, ripe for creative, reflective, and systematic inquiry in order to truly understand the “value and complexity of such spaces” (Gaylie, 2011, p. 13).

Gaylie (2011) details the history of school gardens in her book *Roots and Research in Urban School Gardens* as an introduction to eight case-studies of urban school gardens situated on the west coast of the U.S. and Canada (this work will be reviewed in depth later in this
chapter). According to Gaylie (2011), the favourable conditions that have supported urban school gardens throughout recent history include: the late 19th century urban reform; Victory Gardens following the two world wars; late 20th century environmental awareness; and early 21st century grass roots movements and educational reforms.

In Germany school gardens were an integrated aspect of education as early as 1818 (Gaylie, 2011). The notable German educator and pedagogue, Friedrich Froebel (1782-1852), created the first ‘kindergarten’, which literally translates as “children’s garden”; in Froebel’s early educational models gardening was a core aspect of the curriculum, and by 1904, school gardens were standard in most European countries (Gaylie, 2011). This European influence was reflected in the U.S. in the early 20th century by using school gardens as a “means of promoting the ideals of progressive education and traditional notions of stewardship” (p. 19). By 1910 there was an estimated 80,000 school gardens in the United States. During this time, gardens were sought to improve the moral character of urban children who were considered deprived of the benefits of time spent in nature. John Dewey (1859-1952), an influential educational and social reformist whose philosophies remain foundational today, emphasized the learning value of hands-on experience and openly promoted educational gardening as a means of understanding and supporting natural systems (Gaylie, 2011).

School Gardens in the United States

In 1918, at the close of World War I, Europe and North America experienced dramatic food shortages and school gardens became part of the war effort termed ‘Victory Gardens’. The educational objectives of school gardens were largely set aside and the main focus became pragmatic and utilitarian in the collective effort to produce as much food as possible through
these Victory Gardens on school grounds (Hayden-Smith, 2006). In the U.S. a national program emerged known as the United States School Garden Army (USSGA). In this program, children, labeled “Soldiers of the Soil”, were encouraged to fulfill their patriotic duty to grow fruits and vegetables for their fellow citizens. The USSGA developed and delivered a national (and generic) curriculum on school gardening that thrived amongst the post-war, patriotic ideology. School gardens waned and waxed following World War II when national food shortages peaked again- during both of these post-war time periods, school gardens were seen as remedies to food shortages, rather than as integrated educational initiatives.

During the 1960’s and 1970’s liberal social movements briefly promoted school gardening following pedagogical and psychological support for experiential education and a desire to reconnect with nature (Gaylie, 2011). In the U.S., the modern environmentalist and budding local food movements set in motion a renewed interest in school gardens but it was not until 1995, when the state of California put forth the initiative ‘A Garden in Every School’, that mainstream educators and administrators began to formally reinstate an appreciation of school gardens as important and necessary learning spaces (Gaylie, 2011).

Research on climate change and a shifting cultural awareness towards nutritional food in the mid1990’s was reflected in the vibrant local food movement in Berkeley, California. In 1971, Alice Waters, a well-known celebrity chef, founded Chez Panisse (an iconic local food restaurant), and in 1995, with the help of the Center for Ecoliteracy, Waters established the Edible Schoolyard at a public middle school also in Berkeley, California (Waters, 2008). The Edible Schoolyard integrates all academic subjects through food and garden education and has served as a model program throughout the United States. To date, there are seven Edible Schoolyard projects in the U.S. that receive funding through the Chez Panisse Foundation (ESY,
The Edible Schoolyard also manages an extensive (and growing) online network of exemplary school garden projects in an effort to “build and share a national food curriculum” (ESY, accessed August 22, 2012). These projects exemplify the well-integrated initiatives of select school gardens and teaching kitchens that many public schools in the U.S. are working towards.

Alice Waters’ celebrity status and the growing online network of schools offering food and garden education has prompted a growing public awareness and appreciation for school gardens. The momentum for this school garden movement has also been supported by U.S. First Lady, Michelle Obama, who in 2009, re-established a large vegetable garden on the White House lawn and founded her Let’s Move! campaign as part of a national effort to teach school children about local food and healthy lifestyles (Gaylie, 2011). In summary, the recent local food movement and a growing concern around childhood obesity currently buoy the school garden movement in the United States.

**School Gardens in Canada**

I found far less literature on the Canadian history of school gardens although what I did review parallels the U.S. in many ways. Agriculture was a major component in schools during the end of the 18th century and by 1899 agriculture was incorporated in most Canadian teacher training courses (Gaylie, 2011). By the end of WWI, all Canadian provinces promoted school gardens, which became Victory Gardens to relieve war time and post war food shortages (Gaylie, 2011). During this time period, urban school gardens honed the skills of potential future farmers, with the gardening focus remaining almost exclusively utilitarian and economically motivated until the end of the 20th century (Gaylie, 2011).
This narrowly pragmatic focus on school gardens has recently expanded to support a more dynamic role in Canadian Environmental Education. For example, the Ministries of Education in the provinces of Ontario and British Columbia have both developed comprehensive curriculum guides to integrate the natural environment in daily learning experiences with emphases on ecosystems, place, aboriginal and critical perspectives, social action, and interdisciplinary approaches (Gaylie, 2011). As in the U.S., Canada experienced an increased interest in school gardens during the mid1990’s. This interest continues today with the cities of Vancouver and Toronto taking the lead on implementing school gardens with the assistance and support of Evergreen (a Canadian environmental non-profit based in these two cities).

Many organizations and publications addressing urban food issues, Environmental Education and school gardens have recently emerged in both the U.S. and Canada including: Food Secure Canada, Roots of Change, City Farmer, Green Teacher, LifeLab, FoodCorps, Center for Ecoliteracy, Growing Gardens, Edible Schoolyard Project, San Francisco Green Schoolyard Alliance, Slow Food, Evergreen, Tilth, and the Center for Urban Education on Sustainable Agriculture. However, there remains a substantial gap between the public interest in school gardens and the necessary resources, funding, trained personnel, and research to support these initiatives. This is a complex situation. While it is important to emphasize that we are currently experiencing a renaissance of the need for humans to reconnect to our food systems and local natural places (which can be accomplished through school garden experiences), as North Americans, we have yet to enjoy the stable infrastructure that is required to sustain these educational objectives.
School Garden Research

This thesis is situated in a Vancouver public school garden, and so it is necessary to map the research that has been conducted within public school gardens. As I explore the pedagogies and methodologies most appropriate for this study, it is also important to illuminate the type of learning that happens within school gardens. Garden-based learning is defined as “an instructional strategy that utilizes a garden as a teaching tool. The pedagogy is based on experiential education applied in the living laboratory of the garden” (Desmond et al., 2004, p. 20).

While the overall research on school gardens is budding but not substantial, there are currently two main areas of research focused on school gardens and garden-based learning: 1)
academic achievement in all subject areas, and 2) nutritional and physical education. Although some research exists in each area, the research has been compartmentalized and exists mainly in the U.S. With the exceptions of Laurie Thorp’s *The Pull of the Earth: Participatory Ethnography in the School Garden* (2006) and Veronica Gaylie’s *Roots and Research in Urban School Gardens* (2011), this research is also largely quantitative and fails to include the voices and perspectives of the children in these studies.

**An American Case Study**

Thorp’s (2006) study, conducted in a Michigan school garden over the course of four years provides an in-depth account of children’s and teacher’s experiences and struggles within their classroom and school garden. In this study, the school garden becomes central to the school identity as well as a source of pride and sustenance for a low-income community. Thorp’s sensitivity to the context and participants allowed for multiple interpretations and rich meaning-making. Thorp explicitly identified as a participant in this research, while giving it breadth and life through the inclusion of chapters authored by teachers, photographs of the children in the garden, children’s drawings, recipes, and personal notes in the final document.

Thorp (2006) includes the photographs, poetry, sketches, journal entries, multiple voices and fonts to “purposefully complicate the read” (p. 3). She attempts to convey the place and voice of the garden itself: “the sun on your back, the rich smell of earth, muddy shoes, children’s giggles, tears, and groans” (p. 3). She declares visual artifacts, such as photographs, as honouring diverse ways of knowing. Thorp describes the many joys and frustrations so prevalent in a school garden and claims that her central responsibility was to “turn up the volume on the glorious chorus of voices from the garden” (p. 4). Thorp (2006) gives the disclaimer that
this dissertation is a “messy text” and that she is experimenting with writing as a feminist practice, citing academic texts as being “ruthlessly linear, logocentric [and] masculine” (p. 3). Her voice is clear and dominant (while retaining a playful, emotional, and whimsical cadence); so are the voices of her students and colleagues.

In her ethnography, Thorp (2006) did not set out to prove anything. She tells her personal story, and the story of one school garden in Michigan. I find Thorp’s (2006) ethnography to be complicated, mundane, heart-breaking, and subjective as she openly discusses the challenges as well as importance of sustaining a school garden in a resource-deprived school. Thorp writes of children in this study for whom the garden provides hope and inspiration in an otherwise bleak daily life of transience and extreme poverty. She describes the small details of weeding, planting seeds, holding insects, and caring for these children, in an experimental text where validity and uncluttered findings are not the end goals. Instead Thorp cites Lincoln (2001) on the importance of prompting readers to engage and feel resonance in the writing, trusting the authenticity of the work as the ultimate validity. Thorp’s (2006) dissertation is comprehensive and provocative. Her perspectives, research process, and writing style significantly influenced my choice of methods and narrative voice in this study.
…new holistic interpretations of garden learning bring the need for multi-faceted, multi-sectoral approaches to the complex problems facing the earth; such a purpose requires a blend of research, practice, philosophy, pedagogy and recognition of historical practices…today’s gardens invite a multitude of new methods to teaching, learning and research.

Gaylie, 2011, p. 12

A Canadian Case Study

Gaylie’s (2011) *Roots and Research in Urban School Gardens*) represents one of the few Canadian studies on school gardens, and the only one I encountered that explicitly considered
“what was learned in the garden [and] how it was learned” (p. 14). Her work primarily draws upon empirical studies citing the benefits of garden-based learning as well as the historical and contemporary contexts of school gardens. Gaylie selected four geographical areas (all on the North American west coast) for her research on school gardens: Southern California, Northern California, Seattle and Portland, and Vancouver, British Columbia. She chose small, urban school gardens, highlighting the voices of educators and students involved in these sites.

Gaylie (2011) briefly visited three schools east of Los Angeles (one elementary school and two middle schools), two elementary schools in Northern California; a middle school in Portland, Oregon; an elementary school in Seattle, Washington; and an elementary school in Vancouver, British Columbia. At each school, Gaylie conducted informal interviews with teachers and students, and at the Vancouver school, Gaylie also engaged the children in writing creative poems about the garden. Interviewees were asked questions about the history and design of each garden, and the unique context of each site, as well as the ways in which each garden influenced teaching and learning.

In her findings and summary, Gaylie (2011) writes of an appreciation for the context (cultural and geographical) of each garden and school community while noting that although all of the teachers in this study highly valued school gardens, they did not believe that school gardens should be a mandatory or enforced educational initiative. The teachers considered the first-hand experience of gardening to be potentially transformative for teachers and students and acknowledged that the awareness of this potential “must be invited and arrives gradually through experience” (p. 162). The students in Gaylie’s (2011) case-studies discussed and wrote about their connections to land while exhibiting a grounded understanding of agricultural practices and environmental stewardship. Gaylie interprets the student’s responses as demonstrating pride in
their garden work as well as finding value in the more-than-human ecosystems with whom they interact.

Gaylie is an obvious, if not explicitly self-identified, champion of school gardens. I find her writing to be both inspiring and convincing. Also, her research is overwhelmingly positive, and while she claims her intention is to offer a more subtle understanding of school gardens, in my reading of this research, the universal benefits of school gardens take centre stage. I find that the conversation lacks a discussion about the complexity, challenges, and nuances of school garden research that I feel would benefit this field. I recognize the need for school gardens to overcome their marginalization through empirical studies with positive findings. In my own research, I wanted to explore a myriad of methods that might expand the conversation and embrace the diverse, and possibly contradictory perspectives of children engaged in school gardens. I wanted to learn from my mistakes and from my child co-researchers and include these reflections in this text.

Thorp’s (2006) and Gaylie’s (2011) studies on school gardens were the most comprehensive and influential I encountered in this literature review, and both studies contributed to this thesis. Gaylie’s (2011) work provided me with a foundational understanding of the history of school gardens and related research in the field, while Thorp’s (2006) creative writing voice, critical perspectives, and inclusion of the children’s voices in her study were most inspirational as I embarked on this study. Equally important, although in terms of methodological considerations peripheral to this thesis, are empirical studies on school gardens in the areas of academic achievement, nutritional education, and Environmental Education. I will now review the relevant literature in these areas.
Academic Benefits of School Gardens

While some teachers may perceive school gardens as peripheral to classroom learning and as tangential to the standards they are required to teach, there is a growing body of research illustrating an improvement in academic performance and test scores, especially in math and science, when gardens are used as outdoor classrooms (Bell, 2001; Klemmer, Waliczek, & Zajecek, 2005; Smith & Motsenbocke, 2005). Several progressive educators are also beginning to recognize the cross-curricular benefits of teaching in gardens. In 1997 a Florida study conducted surveys at 35 elementary schools including 71 teachers, to document the ways that school gardens were being used as teaching tools. The study found that although the majority of teachers were using the gardens less than 10% of the time, 84.3% of teachers exposed to school
gardens thought that gardens helped their students learn more effectively (Skelly & Bradley, 2000).

In 1998 a nationwide (U.S.) study was conducted across 40 schools (K-12) in 13 states to analyze the academic and behavioural effects of using the environment as an integrated context for learning (Lieberman & Hood, 1998). The researchers in this broad-reaching study interviewed teachers, principals, and students, conducted observations of classes, and examined curricular material as well as student work. This study was the first of this scope and remains a seminal document on the resounding success of schools using the environment (but not exclusively school gardens) as an integrated context in learning. The findings showed 92% student academic improvement in all subject areas (math, science, social studies, and language arts), as well as 100% improvement in student behavior, attendance and attitudes, as compared with traditional non-environment-based schools. According to this study, the hands-on practice of using the environment as an integrated learning context resulted in reduced classroom management and discipline problems, increased attention and enthusiasm for learning, and greater pride and ownership of accomplishments.

The Lieberman and Hood report (1998) stands as a substantial beacon of both qualitative and quantitative findings in the U.S. in support of integrating the environment in formal education. However, this study explored multiple environmental contexts and did not exclusively focus on school gardens. As well, the broad scope of this research cannot articulate the particular, and diverse, experiences of the children engaged in this type of learning. This report focused on academic benefits as the main goal of using the environment as an integrated context for learning, and while the results are extremely encouraging, the holistic and complex experiences of garden-based learning may become ancillary.
Learning to Eat Healthy

Although there is substantial public interest in the U.S. and Canada for school gardens and healthy school food programs, relative to other research within academia, the body of research on the topic of food and food politics is limited due to various reasons including a reluctance by academics to consider something as “animalistic as eating” worthy of research (Weaver-Hightower, 2011, p. 16). This reluctance is beginning to shift as we enter a paradoxical era of both escalating childhood obesity alongside increasing issues of hunger in all parts of the world. While several nutritional researchers are investigating the potential for school gardens to provide the missing vegetable supplement in many urban children’s diets, the research is limited
as the majority of studies neglect the many cultural and socioeconomic variables that contribute to obesity and hunger (Thorp, 2006).

The research I reviewed for this study was primarily concerned with effecting measurable and long-lasting behavioural changes on children’s eating habits by increasing their fruit and vegetable consumption (Blair, 2009; Graham et al., 2005; Morris et al., 2000, 2002; Morris et al., 2001;). In the study *School-based gardens can teach kids healthier eating habits* (Morris et al, 2000), Grade 1 students were found to be more likely to try unfamiliar vegetables they had grown themselves. This study’s findings also indicate that nutrition programs that lack a garden component frequently failed to show long-term success in children’s healthy eating habits (2000). These findings suggest that children’s preferences for healthy eating is, in part, contingent upon their everyday exposure to and engagement with the place where the food was grown. In effect, this study found that vegetable gardens on school grounds provided the necessary support for healthy eating habits.

A later study by Morris et al. in 2002 reported similar conclusions on the nutritional benefits of school gardens and demonstrated even more reliable results from older children in Grade 4. Both studies focused primarily on the nutritional outcomes of school gardens and did not include holistic discussions of garden-based learning. In my view, these studies often portray the school gardens as clinical laboratories and the participating children as one-dimensional research subjects rather than distinct people and places with multiple meanings, histories, and experiences. At the end of this chapter, I will explore the theoretical perspectives within Ecological Place-based Education and how these perspectives can offer grounding and contextualization to places of learning and school garden research.
Human(/)Nature

While edible school gardens and a focus on food dominate the school garden movement, there is also a growing awareness of the need for urban children to engage with their natural environment to support healthy emotional and cognitive development. Naturalists, educators, psychologists, and environmental theorists have chronicled the physical, psychological and emotional benefits of humans engaged in nature (Gaylie, 2009a; Heerwagen & Gordon, 2002; Houghton, 2003; Kaplan, 1992; Kellert, 2002; Kuo & Sullivan, 2001; Louv, 2008; Nabhan & Trimble, 1994; Pollan, 1991 and 2002; Thorp, 2006; Verbeek & deWall, 2002). Beginning with E.O. Wilson’s (1984) theory of Biophilia which states that humans instinctively prefer and gravitate towards other living organisms (e.g. plants and animals), it is widely accepted that humans flourish when surrounded by Nature and will seek opportunities to be near and engage with natural elements, especially when faced with stressful situations (Verbeek et al., 2002).

Psychologists and therapists have documented both the therapeutic and educational benefits of gardening activities for children with learning disabilities such as Attention Deficit Disorder (ADD), as well as for those with English as an Additional Language (EAL) (Kuo & Sullivan, 2001; Thorp, 2006). The act of gardening can also be psychologically therapeutic for children in challenging family situations facing poverty, neglect and abuse (Thorp, 2006). While many researchers and practitioners agree on the theoretical benefits of gardens, the initiative to consistently provide children with hands-on engagement with Nature in educational settings is lacking (Blair, 2009).

Environmental Education and Ecological Literacy

While Environmental Education may be taught in school gardens, it is important to note that school gardens have largely come about through historical and contemporary concerns
around food issues and shortages (Gaylie, 2011); Environmental Education has evolved through a commitment to nature study and conservation education (Disinger, 2001). School gardens provide one context for Environmental Education although the content and process will look different in every school and garden. As David Orr (1992) makes clear, “all education is environmental education”. In other words, all places of learning, whether they be fluorescent-lit classrooms or sky-bright school gardens, must teach values, histories, and meanings. As an educator, I believe we are frequently unconscious or implicit in understanding the influence of our environment on the quality of learning.

Environmental Education is inherently interdisciplinary and frequently difficult to define (Hart, Jickling, & Kool, 1999). As well, the fluid and evolving nature of Environmental Education, and related environmental research, is regarded by some scholars as a strength rather than a weakness (Hart et al., 1999). Hart et al. (1999), recognizing that Environmental Education is an emerging field, discuss the difficulty and potential disservice of prescriptively defining this type of education. However, the authors do offer some guiding words published in a B.C. Ministry of Education (1995) curriculum document: “Environmental education is a way of understanding environments, and how humans are part of, and influence, environments” (Hart et al., p. 109). Desmond et al. (2004) link their understanding of ecological literacy to Hart et al.’s Environmental Education. The authors describe ecological literacy as a holistic variation of Environmental Education defined as the “understanding of the principles of organization that ecosystems have developed to sustain the web of life along with the skills to act on that understanding in one’s daily life to ensure sustainable communities that support all forms of life” (Desmond et al., 2004, p. 23).
Cultivating ecological literacy involves several shifts of perception in educational objectives (Berry, 2005; Chapra, 2005b). Some of these paradigmatic shifts include: a) holistic learning rather than a compartmentalization of subject areas, b) regarding relationships rather than objects, c) valuing contextual knowledge over objective knowledge, d) emphasizing quality over quantity, e) examining systems processes rather than fixed structures, and f) emphasizing patterns over content (Berry, 2005; Chapra, 2005b). David Orr (2005) writes that the goal of ecological literacy “is not just mastery of subject matter but making connections between head, hand, heart, and cultivation of the capacity to discern systems” (p. xi). While these objectives are commendable, I would add: valuing the traditional knowledges of Indigenous cultures and encouraging contemporary multicultural perspectives as a move to embrace diverse school populations and avoid perpetuating Western ways of knowing and learning (i.e. focusing exclusively on European culture and history at the expense of multicultural perspectives and practices) (Friedel, 2011; Marker, 2009). In this context ‘knowing’ can be defined as ways of interpreting and understanding the world (Bruner, 1985). In my view, Environmental Education and the teaching of ecological literacy cannot afford to dismiss the complexity of cultural practices that might influence these ways of knowing.

Chapra (2005) discusses the difference between teaching ‘sustainability education’ (in his opinion, an overused, didactic, and generic term) and fostering ‘ecological literacies’ (a holistic understanding of the interconnectedness of Nature) through direct experiences with the natural world. The outdoor classrooms of school gardens can be ideal places in which to foster ecological literacy as they connect children to the fundamentals of food systems while integrating virtually every activity at school (Chapra, 2005). Children learn that the garden as a whole is “embedded in larger systems that are again living networks with their own cycles” (p.
Chapra (2005) describes the pedagogies that might encourage ecological literacy as being “experiential, participatory, and multidisciplinary” (p. xiv) and rooted in a profound respect for living Nature. He notes that school gardens are dynamic outdoor classrooms with the capacity to engage children in the ecological cycles of Nature, encourage ecological literacy, develop an awareness for the “web of life”, and give us a “sense of place” (Chapra, 2005, p. xiv). Chapra’s (2005) words illustrate some educators’ commitment to cultivate an appreciation for biodiversity and place, as well as an intellectual and emotional understanding of interconnected systems, patterns, and cycles. First and foremost, environmental educators must foster an ethic of care and respect for all living things (Chapra, 2005).

The pedagogies of Environmental Education vary greatly with each context. As Hart et al. (1999) acknowledge, while we may strive to identify the ‘best ways’ of teaching Environmental Education, as educators, we should address complex and controversial environmental issues and philosophies and do our best to avoid indoctrinating students into any singular world-view. Hart et al. (1999) suggest a framework (while urging others to interpret and expand as needed) for evaluating the quality of Environmental Education by posing questions that might encourage reflection and dialogue on the part of educators and students.

Hart et al.’s (1999) guiding framework for quality in Environmental Education aligns with many of my educational philosophies and research objectives as it encourages diverse ways of knowing and learning, hands-on experience, an emphasis on self-study and self-inquiry, creative and critical thinking, and an understanding of and appreciation for complex systems. In line with this thinking, by focusing on children’s holistic school garden experiences and perspectives, this thesis is largely situated within Environmental Education, rather than the
majority of school garden literature reviewed for this study that focuses on nutritional education or academic achievement.

Figure 11 Photo by Ms. Kiwi (Gr. 5 student)

**Children’s Environmental Knowing and Ecological Identities**

In conducting this literature review, I encountered two Canadian studies on children’s environmental knowing (Scott, 2007) and ecological identities (Ostertag, 2009). Although these studies are not conducted within school gardens, they do offer insight into the multiple ways children engage with the natural world and develop feelings of ecological connectedness, caring,
and responsibility. I chose to explore these two studies to enrich my understanding of researching with children and the natural environment.

Scott’s (2007) case study investigated how children’s (n=55) experiences during an environmental education programme (Grades 4-7) at the Vancouver Aquarium fostered environmental knowing and feelings of connectedness and empathy for the marine animals being studied. Scott (2007) was also interested in “how children understand and interpret their experiences” (p. ii) and included in-depth explorations of four participating children’s experiences and their emerging ‘environmental knowing’. Scott (2007) defines environmental knowing as “a way of understanding and interpreting the world that encompasses environmental knowledge, an ethic of environmental care, and environmental advocacy and action” (p. 7). Scott’s research methods included observations, semi-structured interviews, researcher logs, student work, and contextual conversations to glean a holistic understanding of the experiences and perspectives of the children participating in this environmental education programme. The study’s findings revealed that learners develop environmental knowing during in-depth place-based experiences that foster environmental knowledge, connection, care, advocacy, and ultimately lead to informed and responsible action.

Ostertag (2009) presented a case study of five children engaged in an environmental education programme at the University of British Columbia (UBC) Farm where she volunteered as a ‘Farm Friend’ (an adult volunteer who commits to weekly visits and mentoring of a small group of children, Grades 3-7) over the course of an academic year. Ostertag (2009) explored the multiple ways children developed and enacted their ecological identities (defined as the ways in which “…we extend our sense of self in relationship to nature” (Thomashow, 1995, p. 3). Ostertag found that these children’s ecological identities were co-constructed through an
interplay between their sense of agency, family contexts, and their experiences at the UBC Farm (Ostertag, 2009). Both Scott (2007) and Ostertag (2009) found that hands-on engagement with the natural world (whether it be an aquarium or a farm) cultivated “an ethic of care- or feelings of love, empathy, and responsibility for nature” (Ostertag, 2009, p. 133). While these studies were not situated in school gardens, I want to acknowledge them for presenting empirical evidence on the benefits and influence of time spent in/with nature and the children’s subsequent feelings of ecological caring, connectedness, and responsibility.

Figure 12 Photo by Kale (Gr. 4 student)
Theoretical Perspectives

This study is inspired by the theoretical perspectives outlined in Gruenewald’s (2003) work on Ecological Place-based Education which emphasizes the central importance and influence of familiar and natural places on children’s environmental knowledge and experiences. Ecological Place-based Education is a branch of Place-based Education which is defined by Stokely (2004) as facilitating multiple learning objectives such as enhancing education, connecting subject areas, community building, social justice, and fostering ecological connectedness by using nearby, familiar places as the context for learning. Place-based Education rejects generic educational experiences by acknowledging that distinct geographical locales can guide both content and pedagogy (Gruenewald, 2003). There is a focus on local histories and cultures through exercises such as mapmaking, drawing, and storytelling (Stokely, 2004). Similarly, the theoretical perspectives embedded within Ecological Place-based Education state that children need to feel connected to familiar, natural places to develop ecological literacy, relationships, and values of stewardship (Gruenewald, 2003; Sobel, 1996). I will draw upon this theoretical framework to explore both the contextual experiences and diverse perspectives of the children in this case study while emphasizing the importance and influence of this specific place, the school garden.

The notable conservationist Aldo Leopold (1949) wrote: “It is inconceivable to me that an ethical relationship to land can exist without love, respect, and admiration for the land…” (, p. 223). Leopold promoted the idea that stewardship depends on an appreciation for biodiversity that recognizes humans as “equal participants in a wider web of connection” (Goralnik & Nelson, 2011). Following this reasoning, Carson’s (1956) seminal work, *The Sense of Wonder*, cautions against the didactic and moralistic tendencies of some forms of Environmental
Education, and instead encourages us to cultivate a sense of wonder for the small and particular beauties of our immediate environment to instill an appreciation for nature and a love of lifelong learning; she writes, “…it is not half so important to know as to feel” (p. 45).

David Sobel (1996) extends Carson’s philosophy in his essay, *Beyond Ecophobia: Reclaiming the Heart in Nature Education*. He puts forth the theory that love, familiarity, and a sense of wonder are the primary qualities that must be nurtured in children if they are to become stewards of the land: “if we want children to flourish, to become truly empowered, then let us allow them to love the earth before we ask them to save it” (Sobel, 1996, p. 39). Sobel (1996) and Louv (2008) suggest that if children are only presented with ecological tragedies occurring in far-away places (such as melting glaciers in the Arctic and deforestation in the Amazon), they will not only be ill-equipped to remedy these disasters but will actually further retreat from engaging with Nature. Alternatively, Gruenewald (2003), Sobel (1996), and Louv (2008) put forth the theory that consistent, hands-on experiences with nearby Nature will lead to age-appropriate inquiry, knowledge, and stewardship of the environment (Gruenewald, 2003), as well as promote a deep loyalty to community (Thorpe, 2006), and a genuine sense of wonder, appreciation and curiosity for Nature (Carson, 1956).

School gardens are recognized as an ideal context for “fostering empathy for the familiar” (Gruenewald, 2003, p. 8) while developing knowledge and pride in local flora and fauna. School gardens offer a place to introduce children to the joys and processes of growing plants, learning about food, fostering intergenerational connections, developing pride in community as well as ecological knowledge, and providing the needed outdoor exposure that many urban children crave (Thorpe, 2006).
Not all school garden projects explicitly focus on Environmental Education but all are, to some degree, ecological, place-based examples of being in an environment. The geography, culture and demographics of each school garden contribute to the unique, contextual learning happening within. For this study, the garden played an essential role as the site for conducting interviews, as the subject for most of the children’s photography, and as the place where the class gathered on a weekly basis to plant, compost, water, weed, and explore. The triangular, fenced garden with two wooden benches, raised garden beds, ladybugs, butterflies, worms, and large spruce trees, became our meeting place. Food was grown, games were played, and many conversations were had. These specific experiences simply could not have happened anywhere else- the particulars of this site, these children, and myself as the researcher, were essential to this research.

The complex objectives of fostering ecological literacy and ecological connectedness are not always aligned with the compartmentalized model of most mainstream educational systems. As such, garden-based learning is difficult to measure or quantify (Thorp, 2006). For academic researchers familiar with conducting specialized research in isolated subject areas, assessing garden experiences presents a challenge. The rhythms and experiences in a garden cannot be “segmented, fragmented, or dissociated” (Thorp, 2006, p. 5); the research of these spaces should also reflect this complexity and interconnectedness. McKenzie, Hart, Bai, and Jickling (2009) describe this holistic approach to Environmental Education as adding “flesh and life to bones polished bare by analytical thought” (p. 5). As noted in my introduction to this thesis, employing the appropriate research methodologies and methods to explore children’s gardening experiences requires time, creativity, and openness to an emergent research design. In Chapter Three, I will outline my choice of research methodologies and methods as well as my rationale for involving
the children throughout this research process (e.g. inviting the children to write interview questions).

Figure 13 Photo by Nichelle (Gr. 5 student)

Chapter Summary

In the process of conducting this literature review I recognized the following key ideas that inform the direction of this thesis:

1. Although school gardens are not a recent phenomenon, school garden research is an emerging field and in need of creative approaches that reflect the multidisciplinary, and sometimes immeasurable, garden-based learning many educators now seek to provide. This study addresses this gap in the literature by providing an empirical example of
holistic school garden research comprised of diverse, multidisciplinary methods (such as reflective journals, focus groups, and photography), as an effort to enrich the field of school garden research.

2. The budding field of school garden research supports the academic, nutritional, and therapeutic benefits as well as ecological connectedness that can come about through garden-based learning. However, the methods used in current school garden research do not foreground progressive sociological understandings of children as social actors with agency; their voices are frequently silenced in the research process. This thesis values and highlights the participating children’s voices as I endeavor to involve the children as co-researchers throughout the research process. By inviting the children to create their own pseudonyms, write interview questions, take photographs, and select the research methods of their choice, I made an effort to honour and include the children in this study.

3. School gardens are ideal spaces wherein Ecological Place-based Education can occur. The perspectives of Ecological Place-based Education presented by Gruenewald (2003) and Stokley (2005) provide a theoretical foundation for this study. I selected these frameworks as the authors emphasize the importance and influence of familiar, natural places (e.g. school gardens) on children’s evolving ecological experiences and perspectives. Throughout this study the children were involved in hands-on engagement with the school garden through garden work, journal writing, focus group interviews, and photography. These methods were focused on and occurred within the children’s familiar, natural place- their school garden, as an effort to include and highlight the potential importance of the garden itself.
With this case study, I hope to offer one example of holistic school garden research situated within the theoretical perspectives of Ecological Place-based Education by describing the particulars of this school garden and foregrounding the perspectives of the children as well as my voice as the researcher. Chapter Three will detail my selected methodologies and methods as supported by progressive sociological understandings of children as well as an appreciation for voice, transparency, and narrative. The discursive nature of most of this study’s methods came about through a commitment to listening to the children with intention, including my voice as the researcher, and being open to an emergent research design.

Figure 14 Photo by Alejandro (Gr. 5 student)
CHAPTER THREE: POLLINATION

Figure 15 Photo by Violet (Gr. 5 student)

Discursive Methodologies and Methods

This chapter borrows the metaphor of pollination to describe the methodologies and methods that I employed to understand, describe, and interpret the school garden discourses in which the children and I engaged. In the life of a plant, pollination refers to the various ways pollen is transported and exchanged among flowers via insects, animals, wind, and water, to deliver pollen grains to the flower’s ovary, become fertilized, swell into a protective fruit, and produce a seed; thus ensuring the propagation of that plant species. In this thesis, I consider the
various discursive methods I employed to be a metaphorical pollination and exchange of ideas, attitudes, and reflections on school garden experiences. This chapter will present how I came to this study, my role as the researcher, how participants were selected, and the methodologies, methods, and research context chosen for this thesis. This chapter will also discuss my approach to recording, documenting, and synthesizing the data, research ethics, and study limitations.

**How I Came to this Study…**

Through the process of self-reflection, I realized that the impetus for this research commenced long before I began my Masters thesis, potentially through my early work of teaching three-year-olds in gardens, scribbling in my notebook, and instructing children how to use my camera. But I also know that my research began when I was three years old collecting berries and petals, noting the rhythm of raindrops, and studying the consistency of mud. I have always understood human beings in the context of plants. For example, I was recently sitting on a bus, looking at a baby’s feathery hair in front of me and understood her soft, new hair as the first leaves on a pea sprout. That same day I was walking behind an elderly gentleman who was bent with age and was instantly reminded of the windswept trees in Hawaii. I synesthetically interpret variations, imperfections, and brilliance in our species based on my understanding of plants and the natural world.

This personal realization made me curious about the relationships between people and plants, and especially how these relationships and perspectives are explored and possibly formed during childhood. Based on my personal experiences, I knew that school gardens could facilitate formative experiences with plants and the natural world. Hence, I wanted to join a class of students engaged in a school garden project to explore children’s experiences and perspectives of
Nature and their school garden. As a researcher I am privileged to be a co-participant (Woodhead & Faulkner, 2000) alongside the children in this study and have continued to reflect upon my own experiences, assumptions, perspectives, and influence throughout the research process. As a researcher I wanted to find a balance between being a graduate student with an explicit research agenda (to complete and write a Masters thesis) and a fellow human with much to learn from and with (rather than about) these children. Throughout this thesis I refer to this collaborative effort as ‘withness’ inspired by Marker’s (2009) emphasis on transparency of researcher positioning and the power dynamics between researchers and participants.

The design of this study was flexible and emergent and evolved collaboratively through consultation with the participating students and their teacher. The children in this study are extremely knowledgeable about plants and gardens possibly due to familial influences as well as their experiences in the school garden and at the UBC Farm. They expressed sophisticated and nuanced perspectives about the school garden and their relationships with the natural world. In many ways these children became my teachers, further positioning me as a learner rather than an expert (Marker, 2009).

**Methodologies**

This thesis is a qualitative case study (Merriam, 1988; Yin, 2003), complemented by elements of phenomenology (Van Manen, 1990) and narrative inquiry (Clandinin, Pushor, & Murray Orr, 2007), which details children’s (Grade 4/5) experiences and perspectives during an academic year spent in their school garden. Yin (2003) suggests case studies embrace a pluralistic approach to methodologies that borrow and incorporate multiple perspectives and utilize exploratory, descriptive, and explanatory methods. To complement and guide this case study, phenomenology and narrative inquiry were selected as methodologies that support storied,
lived experience by welcoming subjective perspectives through rich, descriptive text (Briod & Danaher, 2005; Clandinin et al., 2007; Jardine, 1998; Van Manen, 1990).

**Phenomenology: Researching Lived Experience**

...phenomenological research has, as its ultimate aim, the fulfillment of our human nature: to become more fully who we are. (Van Manen, 1990, p. 12)

This case study is complemented by phenomenological and narrative methods. Phenomenology is the study of lived experiences presented through thick (Geertz, 1973), rich descriptions (Jardine, 1998; Van Manen, 1990). Phenomenology is scientific in nature in that it is a “systematic, explicit, self-critical, and intersubjective study of its subject matter, our lived experience” (Van Manen, 1990, p. 11); there is also a spaciousness and thoughtfulness to this methodology that welcomes reflection, stories, and a poetic element in the telling of these experiences. Van Manen (1990) describes the reflexive and thoughtful pedagogy, as well as the care and even love, that are central to phenomenological research by asserting that we must first care for something or someone in order to understand it/them. As will be shown in Chapter Four, this element of care and intimacy was essential to this study.

Although this is not a purely phenomenological thesis, I am largely influenced and inspired by the philosophical and pedagogical perspectives in phenomenological work that seek to present “the full complexity of our lives, with all their hidden assumptions, interpretations and hopes…” (Jardine, 1998, p. 21). Phenomenological work seeks to explore, describe, and interpret the world (phenomena), as it exists, resisting a grasping at empirical facts, or the need to prove anything. The world of causality is placed in “phenomenological suspension (set aside) as merely contingent” (Danaher & Briod, 2005, p. 22). By moving beyond a binary realm of cause and effect, phenomenology aims to describe the nuanced and often messy world of lived
experiences. In this thesis, the phenomena explored are the children’s (and my own) school garden experiences and perspectives as expressed through school garden discourses. I endeavor to present these phenomena through thick, rich descriptions and intentionally include contradictions and complexity throughout this writing.

**Considering Language and the ‘Whole’ Experience**

Van Manen (1990) asserts that much of educational research tends to “pulverize life into minute abstracted fragments and particles that are of little use to practitioners” (p. 7). While the pedagogy of phenomenology requires an attention to detail, it also honours an appreciation for the ‘whole’ experience, resisting categorization and strict analysis. This case study is written with the intent to accurately present the participating children’s experiences and perspectives while also providing insight and provoking questions for educational practitioners working in the field of garden-based education. In this thesis the process and the findings are interconnected and reflexive. Throughout the writing process, I frequently found myself struggling with ‘where do I begin?’ and perceived this challenge as representative of the difficulty and also potential elegance of phenomenologically-inspired research. The ‘whole’ experience that Van Manen (1990) discusses is best shared in narrative or poetic forms, and, as in poetry, phenomenological work resists summaries, punch lines, and tidy conclusions.

Phenomenology is primarily concerned with insightful descriptions of lived experiences (phenomena) and the meaning-making of those experiences extending beyond classification or abstraction (Van Manen, 1990). The rich descriptions that emerge through phenomenological work should be presented in a language reflective of the persons and context explored. As I write this thesis, I am conscious of the challenge of interweaving academic language with text
that reflects the complex and very personal contributions of children sharing their perspectives and experiences. I strive to employ some of the “artistic, philosophic, communal, mimetic and poetic languages” (Van Manen, 1990, p. 9) that distinguish us as humans and are the trademark of phenomenological research.

Thorp (2006) notes that constructivist/phenomenological methodologies require a certain “spaciousness of thinking that allows for things to emerge on their own terms” and describes her methodology (also inspired by phenomenology and ethnography) as one of “letting go, getting lost, and finding my way” (p. 117). She encourages us to be present, pay attention, and resist the urge to impose order too soon. This ‘letting go’ and trusting ‘things’ which emerge organically can be difficult for those educators who adhere to prescriptive classroom management techniques and teacher-centered pedagogies. ‘Letting go’ can also prove challenging for researchers intent on producing tidy findings at the end of a study. Personally, I found that my professional dance training in structured improvisation offered great wisdom in this research process by establishing an intentional structure to the research design while simultaneously inviting the children’s contributions, ideas, and influence. In all of my interactions with the children, in the research design, and in the writing and synthesis of this thesis, I endeavored to surrender to and celebrate that which emerges, evolves, and speaks.
Narrative Inquiry: The Importance of Stories

“We tell stories with each other, and against each other in order to speak to each other.” (Cronin, 1992, cited in Thorp, 2006, p. 133)

Narration is “one of the primary sense-making activities of the human experience” (Bruner, 1991, cited in Thorp, 2006, p. 123) as narrative allows identity and meaning to emerge organically. Most of us tell stories as a way of (re)constructing our identities and realities and connecting to others. In school landscapes, stories are a central medium through which educators and learners make sense of experiences (Clandinin et al., 2007). Through the practices of sharing and listening we come to understand ourselves and those around us. Clandinin et al.
(2007) remind us that narrative inquiry is much more than simply telling stories it is “the study of experience as story” (p. 23, emphasis added). Narrative inquiry is a relatively new field and may appeal to many educators and educational researchers as they perceive it as comforting and even ‘easy’ (ibid, p. 23). In response to this perception of narrative research being ‘easy’, Clandinin et al. (2007) have established a framework requiring “particular kinds of wakefulness” (p. 21) to ensure this methodology retains discipline, integrity and thoroughness.

According to Clandinin et al. (2007), three ‘commonplaces’ or specific dimensions are required to frame a narrative inquiry: 1. Temporality (foregrounding the fluid passage of time-noting that we are always in process), 2. Sociality (making explicit the relationships between participants and the inquirer- noting that we can never “subtract ourselves from relationship” pp. 24) and, 3. Place (acknowledging that the specific and contextual details of each place of inquiry has bearing on the narrative). For this thesis sociality (my relationships with the children and they with each other) and place (our ‘food circles’ and the school garden) are foregrounded in the discourses in which we engaged.

As in phenomenological work, Cresswell (2008) notes that narrative researchers frequently establish a close bond with the research participants and also attend to the particulars of each context. Narrative researchers frequently seek some degree of collaboration with participants and situate the story within its place or setting (Clandinin et al., 2007; Cresswell, 2008). These were all important elements that emerged naturally in this study, without my pursuing a pure narrative research design. My relationships and collaboration with the teacher and children in this study came about of their own accord and will be documented in Chapter Four.
This thesis is a case study inspired by narrative inquiry and employs narrative methods such as reflective journals and recorded and transcribed conversations and interviews to document phenomenological experiences of engaging in school garden discourses. By interweaving the children’s photography, quotes, and journal pages throughout this text, I hope to add dimensionality and polyvocality to these narratives. Additionally, this thesis is also explicitly written in a first-person, narrative voice as an effort to bring life and subjectivity to an academic work and to highlight my role as a participant researcher.
Reflexivity, Self-Study, and a “Tentative Voice”

...we begin our study with our own experience since other experiences can be intelligible only in these terms.
- (James, 1890 cited in Greene & Hill, 2005, pp. 7)

Many social science scholars point out the need for social science researchers to explicitly articulate our researcher subjectivities and to see ourselves as always in relationship with others and as active participants in the research process (Christensen & Prout, 2005; Cresswell, 200; Danaher & Briod, 2005; Emond, 2005; Greene & Hill, 2005; Jardine, 1998; Woodhead & Faulkner, 2000). Several scholars in the fields of phenomenology and narrative inquiry support the process of self-inquiry, reflexivity, and situatedness as a way of contributing transparency, trustworthiness, and richness to qualitative research (Cresswell, 2008; Danaher & Briod, 2005; Jardine, 1998; Thorp, 2006; Van Manen, 1990).

This philosophy is in line with Bruner’s (1990) thinking on the Self as socially constructed, fluid, and “dialogue dependent” (p. 101). Bruner (1990) describes the Self as a “storytelling being” (p. 114) with the capacity for critical self-analysis while engaging in research with others. Jardine (1998) considers self-understanding and self-reflection as paramount in attempting to understand others. Danaher and Briod (2005) assert that social science researchers cannot and should not try to “avoid their own intentionalities. The phenomenon chosen, the questions asked, and the subjects approached, are all intentional acts” (Danaher & Briod, 2005, p. 223).

I recognize that in this thesis I am both enabled and burdened by my subjectivities and worldviews. This study would look completely different if a colleague (steeped in their personal experiences and perspectives) replaced me. While my identity(ies) and voice within this thesis are shaped by and in relationship with the children who share this work, I must acknowledge the
inevitable impact and influence I had on the production and interpretation of the data in this thesis.

As an educated, American white woman, new to Vancouver and with adult-centric perspectives specific to my life experiences, I was culturally an outsider to the Canadian children, largely of Southeast Asian descent, with whom I engaged. However, as a passionate gardener and teacher, I am familiar with the generic cultures of classrooms, children, and school gardens. The specifics of these children and this school garden became familiar to me only over the course of the seven months of this study and our collaborative work. Extended time was required for us to build trusting relationships, for the children to feel like co-researchers, and for me to feel like a co-participant in this study.

Our life experiences met, collided and sometimes forged when, for example, the children and I realized we shared certain food cultures (such as Japanese nori and mochi) due to my childhood spent in Hawaii where Asian foods abound. As well, my everyday attire of pink Converse sneakers, jeans, hooded sweatshirt and hoop earrings were not so different from the 10-year-old’s in this study; the children frequently complemented my choice of dress and noted when five of us wore Converse sneakers on the same day (Field Notes, May 11, 2012). Alternatively, I lived in an affluent, white neighbourhood on the west side of Vancouver that sharply contrasted the grocery stores, restaurants, and demographics of the children’s neighbourhood on the east side of the city.

I was also an insider to the research process as from the beginning of my time with these children I situated myself as a fellow learner and asked for their help in exploring and documenting this journey. I consider myself a participant in this study because I explored and documented my personal reflections alongside the children in this study. I consider the children
to be co-researchers because although I initiated this study and maintained a degree of authority throughout the research process, the children helped to guide the direction of this thesis and made significant contributions through their selected methods such as photography and writing interview questions.

**Voice and Writing**

I am inspired by the feminist writing practices of progressive social science researchers who advocate for a “tentative voice” (Lather, 2001, cited in Thorp, 2006, p. 125) that welcomes interpretations, contradictions, and even ambiguity (Jardine, 1998; Mazzei, 2009). Lather (2009) asks us to embrace a learning that can “tolerate its own failure of knowledge and the detour of not understanding” (p. 17) as a means of de-centering the authority of the researcher and inviting the collaboration of the participants. While a challenge, I sought to embody this ‘tentative voice’ in the process of working with the children and also throughout the writing of this thesis.

I see the practice of writing as a way to “document becoming” (Richardson & St. Pierre, 2008, p. 483) and wish to celebrate and make explicit my reflective experiences, small failures and personal growth as a researcher becoming the learner (Marker, 2009). Borrowing Trinh’s (1989) words: “I write to show myself showing people who show me my own showing” (cited in Chaudry, 2009, p. 140), and consider these months of reviewing data and writing this thesis as a seminal learning experience.

**New Sociology of Childhood**

The pedagogical, philosophical, and methodological approaches in this study emerged through a practice of intentional listening and reflection and are supported by the core perspectives within the New Sociology of Childhood (Christensen & Prout, 2005; Greene & Hill,
The sociological perspectives in this progressive framework value children as intelligent participants in society rather than as immature adults (Christensen & Prout, 2005). Based on declarations made during the United Nations Convention on the Rights of the Child (1989), the New Sociology of Childhood argues that there is no generic child and that we have all experienced childhood as unique and idiosyncratic depending on the dominant discourses within our culture (Greene & Hill, 2005; Hill, 2005). Following this train of thought, it can be understood that each study involving children needs to consider the distinct circumstances, context and cultures of those particular children before employing research methods.

Additionally, Greene & Hill (2005) point out that much of the research on children is initiated, designed, analysed and presented by adults who neglect to include the children in the research process. The New Sociology of Childhood is critical of traditional research methods that ignore or even silence children in the inquiry process. Veale (2005) emphasizes the need for research to embrace creative and diverse methods that give children an opportunity to articulate their experiences. This view also considers the many ways power dynamics between adults and children may constrain children’s ability to express their perspectives. Similar to Marker’s (2009) position on the researcher becoming the learner, Veale (2005) makes an argument for “non-hierarchical relationships and reciprocal learning between participants and researchers” (p. 253) to be a priority when conducting research with children.

**Collaboration and an Emergent Research Design**

Over the course of this thesis there were many instances where the children performed a sense of *withness* (my term for the collaborative nature of this study) and also independence in the research process: reminding me when I forgot my notebook for writing field notes; testing my audio recorder; reminding me when it was their turn to use the camera; selecting photographs...
to be printed; refusing to take photographs even when their classmates encouraged them; requesting culturally-specific foods to be shared with their class; asking to join the interviews after initially declining; telling me they felt guilty for *not* wanting to be interviewed; writing interview questions and actively inquiring about *my* perspectives on Nature; engaging their classmates in challenging discussions about the role of humans in Nature; and, confronting me about what this research was *for*; *what was the point*?

In turn, I reconsidered and adapted elements of my research design. I cancelled my initially proposed interviews with the children in the fall. I decided to wait until the spring when we had established a relationship. Based on my initial conversation with the children, I chose to facilitate focus groups rather than individual interviews. I invited the children to contribute their own questions to the focus groups in the spring. We dedicated two weeks during which children created personal pseudonyms and reflected upon their selections through journal writing. Based on the classroom teacher’s suggestion of bringing something to taste and smell each visit, we established a ritualized weekly ‘Food Circle’. To begin each of my visits, we sat in a circle, tasted fruits and vegetables, and discussed the plans and progress of this study. Also, based on the children’s overwhelming interest and expertise, they became the core photographers for this study.
Research Context and Participants

Based on studies, well as my previous teaching experience, which indicated that middle elementary students are curious, open, and mature thinkers and are therefore an ideal age to participate in discursive research on school gardens (Morris et al., 2001; Ostertag, 2009), I chose to work with Grade 4/5 students for this study. I was also seeking a teacher and a class that valued exploration, reflection, and collaboration. For this case study I sought a school that met the following criteria: 1) a Vancouver public elementary school engaged in a school garden project on school grounds, 2) a diverse student population to provide rich and varied cultural perspectives, 3) a relatively small student body with only one class in each grade (to prevent issues of exclusion), and 4) an interest in participating in this year-long study with an
appreciation for a collaborative and emergent research design. I approached two other schools before discovering ‘Kale Blossom Elementary School’ and ‘Dragonfly’s’ Grade 4/5 class that met all of the above criteria for this study.

**Settling In…**

Kale Blossom is a small, public elementary (Kindergarten to Grade 7) school located on the east side of Vancouver, British Columbia (B.C.) with approximately 230 students enrolled. Kale Blossom is situated in a multicultural, working-class neighbourhood with tree-lined streets and authentic Asian grocery stores. The families are largely comprised of new immigrants from Southeast Asian, Middle Eastern, and South American countries, and some students are also from First Nations communities. English is spoken as an additional language in many of Kale Blossom students’ homes.

While there is a focus on technology (Kale Blossom recently acquired Smart Boards for all classrooms) there is also a deep appreciation for the natural and cultural environment as evidenced by Kale Blossom’s recent installation of a peace garden inspired by the Aboriginal Medicine Wheel, their school vegetable garden, and a variety newly planted fruit trees on the school grounds. Kale Blossom is also one of the first schools in the Vancouver School District to participate in the Farm to School Program which provides locally-sourced salad bars featured each Wednesday and Thursday. Also, for the last seven years many Kale Blossom classes have participated in an award-winning educational farm programme at the UBC Farm. Kale Blossom exuded warmth and a welcoming climate from the moment I encountered the bright botanical murals located at the school entrance. Being a small school compared to others in the district,
Kale Blossom is not overflowing with resources or funding, but the committed teachers are supported by a dedicated administration and caring families. I immediately felt at home.

![Image](image-url)

*Figure 19 Photo by Kaley (Gr. 4 student)*

**Participants**

The Grade 4/5 teacher, ‘Dragonfly’, and I had an initial phone conversation in which I described my ideas for a collaborative research design, and he subsequently invited me to join his class of 28 students the following week. After a preliminary visit in November 2011 where I observed a lesson and was briefly introduced, I returned a week later and was surprised when several children remembered my name and enthusiastically greeted me. On this visit I brought the children a gift of two plants, a blooming kalanchoe and a succulent jade, as visual inspiration.
during the gray winter months before we began planning and planting the garden. The children sat in a circle on the carpet and shyly told me their names and ages. On this first visit I awkwardly hovered above them in a metal chair; for all following visits I joined the children cross-legged on the floor, and this became our ritualized way of beginning our work.

The classroom bookshelves were filled with garden-inspired books, and the walls were covered with the children’s vibrant works of poetry and art. The school garden (now in its fourth year) was Dragonfly’s initiative and inspired by his class’s experiences at the UBC Farm. When I first arrived in November 2011, the garden was overgrown with herbs and the remains of a late fall harvest; mint and sunchokes invaded the garden beds that were without signage and in need of a good mulch. To date, Dragonfly’s class is the only class at Kale Blossom Elementary to regularly engage with the school garden. Although, with my assistance and donated materials over the course of this study, the Social Development (special needs) class adopted two small garden beds and planted a butterfly garden.

**A Master Teacher**

Dragonfly has been teaching elementary school for nearly as long as I have been alive. On one occasion I arrived for my weekly visit on a Thursday rather than the usual Friday (hoping Dragonfly had remembered the schedule change); the children were confused but also excited as they were not expecting me. I felt badly about the miscommunication and considered leaving just as Dragonfly entered the room. Without skipping a beat, he rewrote the schedule on the blackboard and told the children “Djamila’s here! O.k., we’re going to garden” (even though they had already spent the morning in the garden). He reassured me that my presence was important and that “we would simply do math and P.E. in the garden rather than in the
classroom” (Field Notes, April 12, 2012). I was relieved and impressed by his flexibility and commitment to the garden and to this thesis.

Due to the challenging family situations of some of his students, I witnessed Dragonfly embodying the father and grandfather that he also represents outside of the classroom. Hence his teacher role also included: following up with social workers, engaging in emotional conversations with individual children, and giving hugs when most needed. As one of the few male elementary teachers in the school and district, he is, in my view, and based on my observations, also to his colleagues and administration, a treasure and a mentor. From my first visit to my last, Dragonfly remained open-minded and supportive of my ideas, the children’s participation in this study, and the ever-evolving direction of this thesis; his openness set the tone for all of my interactions with his students. Although I was not exploring Dragonfly’s school garden experiences or perspectives, Dragonfly was a participant in this study by making himself available for consultation and assisting in research decisions such as selecting groups for the interviews, suggesting the inclusion of food in this study, helping to explain to the children the process of self-selected pseudonyms, and, supporting the overarching objectives of this study.

**Relationships, Care, and Emotion**

The aspects of attentiveness and intimacy within phenomenology became central for me as I enthusiastically anticipated my weekly Friday visits with the children. The numerous emails and phone calls to Dragonfly, the sweet hugs and the stories the children offered of their pets, siblings, food cultures, and family vacations, and our farewell exchanges on June 5, 2012 (my final visit) illustrated the care and intimacy that bloomed through this research process.
On my farewell visit, I brought the children basil shortbread cookies, lavender flowers, and strawberries. Dragonfly gave me a yellow chrysanthemum plant and a hand-written card of thanks. The children recited a group poem and presented me with a poster signed by all of the students as well as a heartfelt ‘memory book’ wherein each child composed a thank you and articulated their favourite aspects of the study through text and drawings. This detailed ‘memory book’ serendipitously became part of my data and has been added to my personal library of treasures.

On this last visit several children asked when I would return, and if they would see me in the fall. When I did return the following week to collect their reflective journals, several of them immediately embraced me. Many of the children asked if they would be able to read this thesis. I promised to bring a hard copy to Dragonfly upon the completion of this writing. The children were most excited at the prospect of seeing their photographs published in a thesis at UBC, a university many of them expressed an interest in attending in the future (Field Notes, June 5, 2012).
Partnership: Research Ethics with Children

According to the ethical requirements established by the UBC Behavioural Research Ethics Board as well as the Vancouver School Board (both approval certificates are included in the addendum of this thesis), I acquired written parental consent from all families (consent forms also included in the addendum). I chose to spend seven months with the children to establish a climate of trust and familiarity as well as to encourage an understanding of the research objectives and my role as the researcher. For this study I wanted to have ample time to witness the children’s experiences and perspectives and to allow time to plan, plant and watch the garden grow.
I presented the children with a written explanation (in child-friendly language) of the research goals and methods during a preliminary discussion of this study (these assent forms also included in the addendum of this thesis). I explained to the children that their participation was entirely voluntary, and they would be able to participate in all school garden activities even if they chose not to participate in the study’s data collection. I also explained to the children that they could select the methods they were most comfortable with and did not have to participate in every method. As an agreement to participate, all 28 children chose to sign written assent forms. Based on my field notes from this first day of signing papers, the children were excited to practice their ‘autographs’ and many checked with me to make sure their signature “look[ed] o.k.” (Field Notes, January 12, 2012). There was a tone of respect and seriousness as the children committed to this study.

During this discussion I explained, as transparently as possible, my research agenda and objectives and my intention for the children to become ‘co-researchers’ with me. One child offered her understanding of ‘co’ as meaning a “kind of partner” and several children seemed interested in the prospect of taking photographs and writing interview questions (Conversations in the Food Circle, January 12, 2012). However, during this conversation some of the children appeared bored and distracted, and I struggled with how to approach this subject with children. How to be transparent and interesting, concise, thorough and ethical in a conversation with children about something so seemingly abstract as ‘research’? Especially when I inhabit a complex middle space as an adult who is neither their teacher nor their parent, and when the children know their participation is voluntary and their contributions will not be evaluated through grades.
When I asked the children if they had ever been interviewed, many children nodded and Miss Sunshine (a Grade 4 girl) explained: “It was last year, and I don’t know who it was, but they were talking about planting and stuff. And that lady came and they took you just one by one in that little classroom”. There seemed to be some trepidation about this experience (not to mention a seemingly lack of relationship with the researcher), and so I explained to the children that they would be able to select the methods they were most comfortable with: “You don’t have to be involved with everything…but you can be involved with everything if you want to” (Conversations in the Food Circle, January 12, 2012). At this point I hoped that all the children would participate in the journals and photography and anticipated that many might not choose to be interviewed.

During this discussion Jasmine (a Grade 4 girl) suggested that she did not want to be interviewed but would like to take photographs. Ultimately, Jasmine chose to participate in every method which included creating a pseudonym, responding to prompts in her reflective journal, actively engaging in a focus-group interview and recorded conversations in the ‘Food Circle’, photography of the garden, and gardening and art projects that I documented through my own photography and field notes. Not all children participated in all methods, but all children engaged in some way.

**Methods: Exploring ‘Withness’ and Independence through Discourse**

The Mosaic Approach (Clark and Moss, 2001) is a multi-method process that is comprised of multiple ‘listening tools’ that incorporate verbal and visual contributions from children such as photography by the children, map-making and drawings, interviews, discussing the meaning of child-produced documents, and theatrical role-playing to explore the perspectives
and attitudes of children (Grieg, Taylor, & MacKay, 2007). The Mosaic Approach is based on participatory rural appraisal methods that were developed to access the views and empower those who live in impoverished, rural communities. This approach has been adapted for social services research, health education research, and mental health research and draws from traditional and new techniques that acknowledge both the “context and the child as a co-constructor of meaning” (Grieg et al., 2007, p. 159). The guiding philosophies of the Mosaic Approach align with the New Sociology of Childhood and the pedagogies of the Reggio Emilia teaching philosophy by supporting children as capable and intelligent participants. My research process is inspired and guided by the multi-faceted and child-centered approaches of these three frameworks as an effort to honour both withness (working collaboratively and learning reciprocally) and independence (making space for contradictions, personal choice, and individual voices).

Based on my experiences with Reggio Emilia-inspired pedagogical philosophies (Edwards et al., 1995), I recognize that each child has unique preferences as to how they experience their environment and express their ideas and perspectives related to these experiences. With this thesis, it was my intention to offer multiple and varied entry points (methods) with the hope that each child felt invited to contribute their unique perspectives in the manner they were most comfortable with. In this way, my thesis is situated within the Mosaic Approach as well as the Reggio Emilia teaching methods and the guiding philosophies of the New Sociology of Childhood. The methods in this thesis include:

- Student photography
- Recorded and transcribed focus groups and informal group conversations
- Student journals, including student-selected pseudonyms
- Informal conversations in the garden and classroom
• My observations (through the use of photography and field notes) of the children’s garden and artwork

For the student photography, the children learned how to use my professional digital camera and I kept a meticulous record of each of their photographs. These photographs were examined and discussed during the focus groups and informal conversations at the end of the year where each child selected their favourite photograph to be printed and mounted on their classroom wall. The three focus groups were audio recorded and transcribed verbatim. In the reflective journals the children were encouraged to respond to five writing prompts as well as select their own pseudonyms \(^1\); all of the children created a pseudonym, but not all of them completed the journal prompts. The children’s journal entries were photographed to accurately document their words and drawings. I kept a notebook and audio recorder with me at all times and wrote field notes in the garden as well as recorded conversations during our circles on the carpet where we discussed plans for the day, tasted fruits and vegetables, and reflected on previous visits.

I will describe the focus group interviews in greater depth when I present the data in Chapter Four. For now it is important for me to give an overview of how the children were invited to participate in these interviews. After deciding to postpone my initially planned interviews at the beginning of the year and asking the children if they preferred group interviews (most of them said ‘yes’), I had a discussion with the children in the spring where I invited them to help me write interview questions. Initially only five children expressed interest but the following week nine more children approached me and asked to be interviewed. As for the

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\(^1\) The process of the children creating their own pseudonyms will be detailed in Chapter Four, but for now it is important to note that in the literature I reviewed, I did not encounter an explicit
make-up of the groups, I consulted their teacher, Dragonfly, as to the best mix of children (a balance of mixed genders and personalities)- in hindsight, I wonder how the conversations may have changed had the children chosen their groups.

The participating children selected the locations for the interviews- the first focus group chose a grassy slope overlooking the garden where they had ample room to lounge on the grass, chase butterflies, and pull dandelions. The second focus group decided not to be near the garden due to a far-reaching sprinkler, instead they initially chose a large cedar tree on the east side of the schoolyard but then decided to relocate to a grove of birch trees on the west side where it was more secluded and quiet. The third focus group began in the garden but was chased inside by the rain (although two of the children wanted to stay outside)- we finished the conversation in a stuffy office adjacent to their classroom. In my view, the locations, or place, of these interviews supported and influenced the children’s conversations. The first two interviews were held outdoors which made it easy and convenient for the children to literally gesture to the garden and explain their ideas using blades of grass, birch twigs, and dandelion stems as talking points.

For the interview protocol, I established the ground rules for respectful listening and told the children I would be asking them a combination of my interview questions as well as the ones they had written. The first two focus groups outside could have gone longer but I had to bring them to a close (after 45 minutes) out of respect for Dragonfly’s class schedule. The participating children ended the third focus group (held inside) when they realized it was nearing the end of the day. I mention these details as an example of the ongoing collaborative process and negotiation that occurred between the children and I throughout this study.
**Crystallization and My Approach to Synthesis**

My decision to employ multiple research methods in this thesis was not based primarily on triangulation (which seeks to use multiple research methods, theories, and investigators to corroborate findings) (Mathison, 1988). Rather, this decision evolved as an attempt to invite each child to engage in the research in ways that were meaningful and accessible to them and to support the diverse voices within the classroom and garden. Richardson (1994) troubles the idea of triangulation as a doctrine that assumes that the more data sources there are the closer one can come to a singular fixed reality. Alternatively, Richardson (2000) offers the image of crystals, rather than triangles, as “prisms that reflect externalities and refract within themselves, creating different colors, patterns, arrays, casting off in different directions” (p. 934, cited in Denzin & Lincoln, 2008, p. 7). As such, I interpret Richardson’s (2000) understanding of triangulation as potentially one-dimensional and restrictive, whereas her suggestion of crystals encourages multidimensionality, complexity, and varied interpretations.

Richardson’s concept of employing ‘crystallization’ rather than triangulation can expand our understanding of how multiple (and sometimes contradictory) data sources can represent, reflect, and even refract patterns and themes in multiple directions without being limited to a singular conclusion. For me, Richardson’s (2000) approach to crystallization works in concert with the methodologies, methods, and philosophical frameworks (Ecological Place-Based Education, New Sociology of Childhood, Reggio Emilia Teaching Philosophy, and the Mosaic Approach) I have selected for this study. I see these complimentary approaches as contributing to a prism of lenses to holistically guide this work and emphasize the multiplicity of voices and perspectives in this study.
The etymology of *analysis* is rooted in the practice of separating or breaking apart of a whole (Neufeldt & Guralnik, 1996). To me, this represents the pulverization and fragmentation that Van Manen (1990) is critical of in standardized educational research. I am deeply uncomfortable with dissecting, analyzing, and categorizing the children’s perspectives in this study. Instead of this kind of strict analysis which I find limiting and constrictive, I am inspired by the process of *synthesis*, which refers to a ‘putting together’ of ideas and information (Neufeldt & Guralnik, 1996). Denzin and Lincoln (2008) describe this approach as the researcher becoming a person who makes meaning from experience, a “*bricoleur*, a maker of quilts, or as in filmmaking, a person who assembles images into montages” (p. 5). For me, the holistic images of a mosaic or a quilt of voices and images is appropriate for this study. My voice, although dominant in this writing, is but one piece of this bricolage.

**Identifying Themes**

Chapter Five will present my interpretations and synthesis of the data presented in Chapter Four. As suggested by Denzin and Lincoln (2008) I have sorted these data into themes to guide the synthesis process. I have chosen an intuitive, organic approach and organize the data into loose themes that speak to me. The themes that will be discussed in Chapter Five include:

- Sensuality and the Sharing of Food
- Ecological Identities, Relationships, and Literacies
- Participation through Multiple Discursive Methods

My synthesis in Chapter Five will detail and give examples of the data that support and exemplify these themes. It is important to note that I came to these themes through a process of
intentional listening to the children and reflecting on multiple aspects of this study, including the pedagogy of collaborative research with children and my role as a co-participant in this study. The emergent design of this study facilitated an ongoing synthesis for me as I reflected on and refined the study based on the children’s contributions, interests, and feedback. For example, the unexpected and centrally important role that food played in this study came about after I shared my favourite childhood snacks- *mochi* and *nori*, with the children. The children loved these familiar treats and began requesting foods that were important to their families and cultures facilitating cultural exchange and rich discussion, while cultivating a familial weekly ritual that, I believe, supported all of the other methods in this study. In this way, the sharing of food became an unexpected and emergent theme that became central to this study.

I identified my second theme, ‘Ecological Identities, Relationships, and Literacies’ by listening closely to the children’s responses during the focus group interviews and by carefully examining their journal entries. For example:

- “I am not in the picture [of Nature] because I don’t think of humans as nature. I find them to be nature killing machines.” (Hummingbird, Gr. 5 girl)
- “Yes I’m in the picture becaues (sic) we are part of nature” (Chef Worm, Gr. 5 girl)
- “If I were an insect in the garden I would be a bee because I can eat honey and pollenate (sic) and produce food." (Steve, Gr. 5 boy)
- “Scientists said… everything’s connected. It’s supposed to mean all the planets were broken off from the sun or the moon- or the moon broke off from the earth. That’s what they say.” (Miss Sunshine, Gr. 4 girl)
I identified my third theme, ‘Participation through Multiple Discursive Methods’ by paying close attention to the number of children who selected each method and the degree of interest and participation they exhibited. By giving the children a choice as to which methods they engaged with I was able to glean authentic data from various methods that appealed to them—many of these children wrote about their favourite methods in the memory book at the end of the year which became unexpected data for me. Some of the children were extremely vocal while others were nearly silent throughout the research process; all of the children engaged in some way and offered me thoughtful perspectives. I am by no means the final authority on this synthesis. I offer my interpretations based on my experiences and observations as a co-participant in this study.

Study Limitations

I acknowledge that in my researcher role, I made choices as to what data to collect, include, ignore, and interpret through my own lens. While I did my best to include the children as co-researchers as much as possible in this study, I was not able to review the data (their contributions) with them and consult the children on their approach to synthesis. This omission is largely due to the constraints of the public school calendar that does not align with the growing season of a garden and the time it takes to establish a research relationship with children. By the time the garden began growing and we conducted our focus groups, the end of the school year was upon us.

I also need to acknowledge that the children most likely were influenced by the knowledge that their teacher, Dragonfly, and I are both advocates of garden-based learning and school gardens. While I firmly believe that the children expressed their own views, I must
acknowledge that their perspectives were formed in the presence of two adults who consider gardening important and enjoyable.

Lastly, over the course of this study, the children were also involved in an educational farm programme at the UBC Farm where they worked closely with adult volunteers to plan, plant, and tend small garden plots. Based on conversations with the children, these relationships and learning experiences at the farm seemed to support and inform their knowledge and experiences in their school garden. Because this thesis did not employ an experimental research design concerned with control and causality, I do not consider these outside experiences to be a limitation, but want to acknowledge them as elements that possibly influenced the data. While I was and am aware of these limitations and my biases, I did my best to remain receptive and impartial to the children’s experiences and perspectives during this study.

The following chapter presents overviews and highlights of each method in this study-following phenomenological and narrative writing styles. The data are woven throughout the description of each method as I found they were interdependent and complementary. The intention is to highlight the children’s experiences and perspectives and to also provide critical reflection on how the methods were received and regarded by the children. In each section I note the number of children who chose to engage with each method and to what degree. Throughout the writing, I also include my personal reflections and learning experiences to highlight my role as a co-participant in this study.
 CHAPTER FOUR: BEARING FRUIT

Presenting Data

Once pollinated and fertilized, the ovary of a flower begins to swell into a protective fruit encasing the seed(s). In this thesis I am presenting the data as the metaphorical ‘fruit’ of this study, the result of a fertilization of ideas and discourse. The data that emerged cannot be separated from the methods that cultivated them; as well, each method informs the other. In this chapter I detail what I saw, heard, and experienced alongside the children in this study. Through recorded focus groups, group discussions, and informal conversations I was able to document the children’s voices. My field notes and photography detail what I saw and
experienced through my own eyes. I was also able to ‘see’ through the children’s eyes via their photography to better understand their meaningful moments of beauty, humour, curiosity, and importance. The children’s journal entries offered rich responses (text and drawings) to five journal prompts related to my research questions. By presenting the data as embedded within descriptions of each method I hope to highlight the various ways the children chose to engage with this study.

**A Day in the Garden at Kale Blossom**

I begin this chapter with a detailed account of an early spring day in the garden with the children as I wish to provide an in-depth and rich account of the sounds, sights, smells, textures and flavour of the children’s and my shared garden experiences. It was our first day of planting, March 30, 2012.

I was finding it difficult to juggle the large plates of steamed asparagus, a bucket of daffodils, my backpack and umbrella as I locked my car and walked towards the school. The rain was just beginning to let up. I had spent the morning frantically brainstorming indoor alternatives to our planned gardening activities in case the rain stubbornly continued, but we were already behind schedule due to the teacher’s job action\(^2\) and two week spring break. We desperately needed to plant our peas, lettuce, and potatoes or we would not have a harvest before the end of the year. Miraculously, just as I opened the school’s heavy front door, the clouds began to part!

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\(^2\) The B.C. Teachers Federation job action in 2012 included a three-day strike as well as a withdrawal from extracurricular activities such as after-school commitments and writing report cards.
This was the third visit that I had brought ‘something to taste and smell’, and the children excitedly gathered around me as soon as I entered the classroom, wildly guessing what was hidden in the foil-covered plates. Many remembered the rosemary and cucumbers from my visit the previous week. As the children quickly gathered in a circle on the carpet, Spider (a Grade 4 boy) assumed his usual spot next to my right knee. As I peeled away the foil from a bunch of asparagus, he groaned, “asparagus smells like rotten eggs”. I was nervous as I thought the children would hate the asparagus, especially after Spider’s introduction. I told them it was important to try new things (over half of the children said they had never tried asparagus before). As the plate went around the circle I was relieved to see every child try the asparagus; some were enthusiastic and some hesitant. Cucumber (a Grade 4 girl) was the only one who politely asked if she could spit it out. Ms. Kiwi (a Grade 4 girl) said it tasted “like something from the Philippines”, and several of the boys asked if they could have second helpings. Within three minutes, all the plates were cleaned.

To stimulate our sense of smell, I passed a small bucket of yellow daffodils around the circle and invited each child to take one. There were excited squeals as Summer (a Grade 4 girl) announced, “I found the pollen!” which was smeared across her cheek. After we discussed the plan for the day, that included scavenger hunts and planting, we divided into two groups. I took 13 children outside to begin a spring scavenger hunt while Dragonfly (the teacher) led the planting of peas in the garden with the remaining children.

I created the scavenger hunt to encourage detailed exploration of plants and habitats in the schoolyard. I began by asking the children to find and identify a leaf and flower bud, a recently ‘germinated seed’, an animal or insect home, and an animal that ‘seems to enjoy the spring’, as well as any other signs of spring the children noticed. I asked the children to record
their findings through drawings and text. Most of the children worked in pairs and were thoughtful in their responses. Many of them needed help with terminology such as ‘germinated’ and ‘leaf bud’; to explain this vocabulary I asked several of the children who were familiar with these terms to demonstrate to those who were having difficulty. I also brought a small group of children to a wet patch of ground to show them tiny weeds that had just sprouted or ‘germinated’ and invited them to touch tightly rolled forsythia flower buds as well as leaf buds and asked them to tell me the difference between the two.

Several children had trouble finding an animal ‘enjoying spring’ until Violet (a Grade 5 girl) asked if she could list ‘humans’, “because we are animals!” Miss Sunshine (a Grade 4 girl) nodded enthusiastically and agreed, “yeah, we are mammals.” Violet added, giggling, “we evolved from monkeys.” Jasmine (a Grade 4 girl) adamantly disagreed: “I didn’t come from a monkey.” I reminded them that it was o.k. to disagree, and that we needed to respect each other’s beliefs and perspectives. Secretly, I was proud of Violet for her epiphany and creative response to the scavenger hunt question.

Acorn (a grade 5 boy) had a different response to the assignment of finding an animal enjoying the spring. He chose to draw a picture of a bird that he assumed was high in the cedar tree because, as Acorn explained, “I heard chirping, and last year there were dead baby birds right here [hinting they had fallen from the nest].” The cedar tree became a favourite spot for many of the children, especially Violet and Summer, who continued to try to climb the furrowed trunk and snuggle into the arm-like branches. Their interest in the cedar tree may also have been a tactic to avoid completing the scavenger hunt, which some children were actively engaged in while others rushed through in order to get to the garden and dig in the soil. I was pleasantly surprised at the care and attention to detail that Lime (a Grade 4 boy) devoted to his scavenger
hunt. He repeatedly checked with me to make sure he understood the directions, and he included meticulous details in his illustrations. Several children described the flowers they found as smelling “sweet” and “fresh” and like “freshly mown grass”, although Lime wrote that the daffodils he found smelled like “rotten eggs”.

Figure 22 My photograph of Strawgrin (Gr. 4 girl) completing her scavenger hunt

This was also the first day the children began taking photographs. Using two of my digital cameras (for all following visits I provided only one camera as it proved difficult to track the children with two cameras), I asked each child to take five photographs. I found that five photographs allowed the children enough time to explore the garden, capturing diverse images that interested them but also allowed enough time for at least four children to take turns with the camera during each of my visits. I recorded the photographs in my journal. Miss Sunshine and
Ms. Kiwi (both Grade 4 girls) refused to use my ‘point and shoot’ automatic camera. They preferred my professional single-lens-reflex camera “because it’s high tech”. I told the children they could take pictures of anything in the garden, including people, plants, insects, animals, and special places. I also asked the children not to take close-ups of their classmate’s faces as these photos could not be used for privacy reasons. Most of the children photographed budding flowers, although Chef Worm’s (a Grade 5 girl) photographs (figures 1 and 22) were all of her classmates digging in the garden. At the end of each child’s turn with the camera, I asked the children to review their photographs and delete any they did not like.

Figure 23 Photo by Chef Worm (Gr. 5 student)
While I monitored the scavenger hunt, Dragonfly (the teacher) led the other group of children in various gardening projects such as clearing the garden beds of mulch, organizing the compost bin, and planting peas. I felt badly that I could not be in two places at once, and it immediately became clear to me how important it is to work with small groups of children in the garden. Dragonfly was visibly enjoying himself but also seemed flustered and overwhelmed with all of the enthusiastic children wielding shovels and peppering him with questions. The children who chose to garden were quickly covered in mud, and from afar I noticed a few children who were especially keen to complete as many garden tasks as possible. Sunflower (a Grade 4 boy) moved backwards across the soil (trampling it in his wake) as he eagerly dropped peas into small holes he had measured with his hand.

After what seemed like only twenty minutes (but was in reality an hour), it was time to clean up and go inside for dismissal. The rain held off until 2:45pm, just as we began to put our tools away and return to the classroom. As we were about to enter the school, Alejandro (a Grade 5 girl), bent down to the sidewalk, scooped up a tiny caterpillar, and asked if she could bring it inside. I told her the caterpillar would be much happier outside. She returned the caterpillar to the sidewalk, kneeling as she put a small maple leaf next to it for food. Spider (a Grade 4 boy) was watching her and shook his head, “You need to put a food leaf, like something to cook. It won’t eat that.” But Spider was quickly distracted by a millipede scurrying next to the caterpillar, which he tried to scrape into a beaker, and promptly squished into the pavement. Dismayed, he slapped his forehead with the heel of his hand.

I hurried the children inside as the rain came down, and I anticipated the bell to ring at any moment. Once inside, the children were rowdy and sweaty, leaving muddy shoe prints stamped across the carpet. Dragonfly suggested we return to the circle for a quick wrap-up (we
had six minutes before the end of the day). The children reluctantly sat in a circle, and some
shared what they had enjoyed, learned or were curious about from our afternoon outside:

Hummingbird (a Grade 5 girl): “The camera was really cool”

Miss Sunshine (a Grade 4 girl): “I just liked gardening… ooh, and having a worm crawl
up my arm!” [Dragonfly briefly noted worm life cycles, the multiple insect pupae and
larvae, and the importance of studying insects in the garden]

Mangolissa (a Grade 4 girl): “I learned what a flower bud is”

Apple Pie Juice (a Grade 5 boy): “I learned how to plant peas”

Mangosteen (a Grade 5 boy): “I liked raking”

Steve (a Grade 5 boy): “Raking”

Rylan Rain (a Grade 5 boy): “Shoveling”

Sunflower (a Grade 4 boy): “Planting, hoeing, raking, digging. I planted peas up to the
first knuckle.”

Lime (a Grade 4 boy): “I liked taking pictures of daffodils”

Nichelle (a Grade 5 girl): “I liked doing anything having to do with digging in the dirt!”

Alejandro (a Grade 5 girl): “I found a caterpillar and it was cute but then I dropped it.”

Hibiscus Flower (a Grade 5 girl): “I found spoons in the compost”

Dragonfly chimed in: “[Hibiscus Flower] was a rock out there. I was afraid I’d have to
deal with the compost all by myself but she wasn’t squeamish at all. The salad bar
people had put all these biodegradable spoons in there and we had to pull them out.

[Hibiscus Flower] just put her hand right in there.”

Djamila: “That means [Hibiscus Flower]’s a real gardener, huh?”
Dragonfly: “Absolutely.” *Hibiscus Flower seemed pleased and embarrassed as she buried her face in her lap.*

Cucumber (a Grade 4 girl): “Raking”

Violet (a Grade 5 girl): “I liked the scavenger hunt”

Ms. Kiwi (a Grade 4 girl): “Taking pictures of a daffodil”

Not all children chose to share their final thoughts in the circle, but those who did gave me great insight into their diverse interests and preferences. I made a note in my journal to continue this process of offering multiple activities (some hands-on gardening, and some explorations that didn’t require the children to get dirty) to accommodate the children’s affinities and also encourage them to expand their comfort zones. As the bell rang, several children (Miss Sunshine, Mangosteen, Acorn, Hummingbird, Kale, and Lime) rushed up to me and asked if they could take a second daffodil home. There were just enough flowers left for each of them to have an extra bloom. I smiled as I watched the children carefully wrap the flower stems in wet paper towels and proudly carry them out the door.

As I packed my bags and attempted to sweep the clods of dirt from the carpet, Dragonfly showed me several corn and bean seeds he was soaking as he planned to teach the children about monocots and dicots the following week. Dragonfly also showed me a beautiful classroom book, *A Seed is Sleepy*, that he loves and uses to teach his class about the intricacies of seeds, (I purchased the book online as soon as I got home). We briefly discussed how surprising it was to both of us that the kids were so open to trying asparagus. Dragonfly said, “the kids used to be much more reticent, but now they’re getting used to trying green things.”
Dragonfly and I briefly chatted about our plans for the following week and the change in schedule. It was decided that I would come on a Thursday rather than a Friday. I compiled a list of materials to procure for my next visit that included hand misters, newspaper pot makers, and *Red Runner* beans to plant. I also made a note to myself that Acorn and Guava wanted to draw their germinating bean seeds in the cups on the windowsill, and several children did not complete their scavenger hunt. In planning our next visit, Dragonfly and I discussed planting greens, radishes and carrots and noted that we needed seed markers.

As had become my routine, I sat in my car with the rain thumping against the roof as I looked over my field notes and photographs, circling and highlighting items of importance such as Violet’s comment about humans being “animals”, Miss Sunshine agreeing with Violet, and Jasmine strongly disagreeing on this evolutionary perspective. I also noted which children were enthusiastic about the scavenger hunt and which ones were only interested in the hands-on
garden work. I then waved to Dragonfly as he hurried to his car. I reflected on the difficulty of coordinating a class of 28 children in the school garden, and wrote of my relief that even after three weeks apart (due to spring break and the teacher’s job action) the children and I seemed to be getting comfortable with each other. Although I still struggled to remember all of their names (and chastised myself for this), I could tell there was a mutual respect blooming between us. I felt lucky to be working with such intelligent, sweet, and open-minded children.

Figure 25 Photograph by Nichelle (Gr. 5 student)

Conversations in the Food Circle: Describing the Classroom Culture

On March 2, 2012 after a two-week trip home to visit my family in Hawaii, I brought the children two of my favourite childhood snacks; nori (Japanese dried seaweed) and mochi (a
Japanese dessert made with sweet rice and coconut milk). I shared these foods tentatively, as I was not sure if they would be received as ‘gross’ or ‘weird’. Several children immediately squealed when I opened the nori, “did you get that in China Town?”, “ooh! I love mochi!”, and “can we grow seaweed in our garden?” After tasting these foods Sunflower (a Grade 4 boy) spit out the mochi and said, “it tastes like throw up in my mouth” just as Chef Worm (a Grade 5 girl) exclaimed “this is the best thing I’ve ever eaten! Can I have seconds?” (Field Notes, March 2, 2012)

Chef Worm asked for the mochi recipe, and so I printed a copy for her and the rest of the class the following week. Kaley (a Grade 4 girl) told me my mochi recipe was very different from the way her Japanese mother prepared it. Instantly, there were conversations about culture, traditions, and family. Dragonfly and I decided to establish this routine of beginning each of my visits sitting in a circle on the floor, sharing foods I had brought, laid out on tin blue and white plates. In the beginning of this practice, I set out with the well-intentioned educational initiative to ‘teach’ the children about local foods that were growing or would be planted in the children’s school garden. It took me several months to realize that this limited perspective excluded the food cultures of the very children with whom I was working.

For our first day of garden planning, I brought plates piled high with cucumbers (a huge hit) and rosemary (not a huge hit with the children!). On this day, March 9, 2012, the children worked in small groups to select the crops to be grown in their garden, and chose two of their favourite fruits and vegetables to write about in their journals. As I walked around the room it was easy to feel inspired by their conversations and excitement about these plants. However, as we regrouped as a class and Dragonfly asked the children to share their plant choices, all eyes dropped to the floor.
After several minutes of unsuccessful urging, Dragonfly slowly walked to his desk and pulled out a big ring of keys. Suddenly all of the children’s eyes lit up and before Dragonfly had even unlocked the desk drawer, most of the children raised their hands to share their crop choices. Dragonfly extracted from the drawer a huge, plastic container of blue gummy worms. My heart sank, “ugh”, I thought, “we have to bribe the kids to share their thoughts?”, and, “next week I’ll bring some organic dried apricots to replace the gummy worms”, (Researcher Journal, March 9, 2012).

Upon later reflection (in my journal) I realized how righteous and limiting this thinking is. Yes, the children were initially hesitant to share reasons for selecting their favourite vegetables to grow, and yes, the blue gummy worms coaxed them out of their shells. But their reasons for choosing their favourite crops remained thoughtful and inspiring: “I like carrots because they’re crunchy and they’re good for your eyes” (Mangosteen, Grade 5 boy), “Peas because I want to try something new” (Strawgrin, Grade 4 girl), “I chose potatoes because I planted potatoes in China with my grandpa” (Lime, Grade 4 boy) (Field Notes, March 9, 2012). I tried to restrain judgment about the gummy worms; I never spoke to Dragonfly about my feelings, and I continued to bring fruits and vegetables, hoping the kids would eat them as eagerly as they did the gummy worms; surprisingly, they did.

On a visit in early April I brought juicy, fuchsia beets, and sprigs of mint. The children had begun to assume their regular seats in the circle with Sunflower or Spider (both Grade 4 boys) frequently snuggling up to my right side, and Hummingbird (a Grade 5 girl) or Miss Sunshine (a Grade 4 girl) on my left. The circle was almost perfectly divided in half by gender (completely self-selected) with girls on the left, boys on the right. As one plate of beets went around the girl’s side of the circle, many girls politely declined, and by the end the plate
remained piled high with the magenta-coloured roots. In stark contrast, the plate on the boy’s side was empty within seconds as the boys’ excitedly shoved chunks of beets into their mouths; Sunflower (a Grade 4 boy) nearly puked from the effort. The boys also eagerly consumed the second plate of beets that the girls had turned down.

I was curious about the boys’ zealous appetites and asked Chef Worm (a Grade 5 girl) what was happening. She rolled her eyes and said, “they’re trying to make their pee red.” Indeed, Acorn (a Grade 5 boy) confirmed that the boy’s side of the circle was engaged in a competition to see who could eat the most beets for just this reason. I received an hourly report and then an update the following week from several boys on how well the beets performed (*Field Notes, April 5, 2012*). For the next two months I continued to bring local spring vegetables, herbs, and flowers such as: radishes, dill, kale chips (another food the children requested the recipe for), grape-hyacinth flowers, rainbow carrots, fragrant lilacs, lemon balm (a favourite perennial herb in the school garden), and native green onions and kale blossoms (the children ate these raw and many continued to pick them each time we visited the garden).

**Expanding My Perspectives on Local Food**

On the first day of our focus group interviews, I brought bok choi and lily of the valley. It was a very exciting day as the children had engaged in a hip-hop performance in the gym that afternoon, and they came bounding in from recess costumed in neckties and black sunglasses. Several children asked if I would stay for the performance and were excited when I said yes. As I unwrapped the plates of bok choi, Mangosteen’s (a Grade 5 boy) eyes lit up as he announced to the class “bok choi!” Spider groaned and told me his mom made him eat it every day. Many of the children seemed familiar with the vegetable, and some were less excited to try it. However,
as the plates were passed around the circle all of the children tried the bok choi. Only Apple Pie Juice (a Grade 5 boy) spit his out in his napkin while proudly announcing, “I tried it, Djamila.” Spider (a Grade 4 boy) told me that I had prepared the bok choi better than his mother (I told him not to tell her that), and Chef Worm (a Grade 5 girl) asked for the recipe. She told me nearly every day that she is going to be a chef when she grows up, and that she is collecting recipes (Field Notes, May 11, 2012). Strago (a Grade 4 boy) later told me he had prepared the bok choi at home with his mother according to the recipe I gave the class and that his family loved it.

Guava (a Grade 4 boy) and Mangosteen (a Grade 5 boy) asked me to bring their favourite fruits, guava and mangosteen (this was the initial impetus for their pseudonyms) for my next visit. I told these boys I did not know where to find these fruits as they were not sold in my grocery stores on the west side of the city. Almost in unison both boys shouted “Chong Lee!” (Field Notes, May 11, 2012). The following week I looked up the location of this grocery store, drove across town, and bought mangosteen fruits. As I explored the Asian grocery store, I was the only white person shopping. I felt awkwardly tall and foreign as I foraged through the produce section. I asked two women how to prepare lotus root, daikon radish, and hairy melon. I could not find guava, but I did buy papaya that I sprinkled with lime juice. I also brought ruffly purple iris flowers along with the mangosteen to the food circle the following Friday. This trip to the children’s neighbourhood grocery store was a learning experience for me as well as a nostalgic reminder of the Asian food influence from my Hawaiian childhood. I realized how narrow-minded I had been in only bringing fruits and vegetables grown in Vancouver and ignoring the tropical produce that represented many of the children’s home food-cultures (Researcher Journal, May 20, 2012).
For my last two visits I tried to make up for this oversight by bringing lychee, guava, basil, and mangoes (along with strawberries, lavender, and shortbread cookies on the very last day). The children rushed up to me each time I arrived, eyeing the foil-covered blue and white plates squealing “what did you bring?!”, wildly guessing and making suggestions for my future visits. Spider hopefully asked for bok choi each time I came to his classroom, and on my very last day he said disappointedly, “You forgot bok choi…” (Field Notes, June 7, 2012). I tried to explain to him that I was bringing something different for each visit, and that I was trying to accommodate other student’s suggestions. When I asked for ideas as to what I should bring on my last day, the class erupted with requests “Apples! Cucumbers! Bok choi! Kale chips! Pears! Watermelon! Cherries! Potatoes! Jackfruit!”

When I asked the children what my reason might be for bringing fruits and vegetables each visit, Violet (a Grade 5 girl) replied, “So we can try new things?” (Field Notes, April 20, 2012). I nodded, and we briefly discussed how we do not only use our eyes, ears, and brains to learn but also our noses, fingertips and tongues. Dragonfly commented on how proud he was of the children being open to new experiences and asked them if they were surprised by the foods they had tried- almost all of the children raised their hands to say ‘yes’. When, at the end of the year, I asked the children to write in their journals about what they learned in the garden this year, Apple Pie Juice (a Grade 5 boy) drew a picture of himself eating asparagus and seaweed (figure 26). He wrote: “This year in the garden I learned that trying new foods is important, more important than ever.” (Reflective journals, June 7, 2012)
On my very last day as I gathered the stack of 28 reflective journals and was walking out the door, Pauline (Grade 4), a shy Filipino girl new to the class and who had remained on the periphery throughout this thesis, tapped me on the shoulder. “My potato grew!” she said excitedly (Field Notes, June 7, 2012). I barely remembered giving several children the leftover seed potatoes back in April after we planted ours in the school garden. Pauline told me she had planted them with her mother and, using her hands, she gestured that the plants were now as tall as her hips. She smiled when I told her they should be almost ready to harvest.

Food became a primary point of connection between the children and I as we gathered in a circle, sitting side by side, sharing foods both familiar and strange. This routine became the
way we began our work and conversations, made plans for the day, expanded our palates, discussed our families, travels and cultures, and appreciated plants. I also considered the practice of sharing food as establishing a rhythm and realm of trust to support the discursive work that followed.

Figure 27 Photo by Hibiscus Flower (Gr. 5 student)

Self-selected Pseudonyms

This section describes the process of the children selecting their own pseudonyms, and my rationale for including this as data. The evolution of this process was fluid but also inspired by Gaylie’s *Roots and Research in Urban School Gardens* (2011) where the children in her
Vancouver case study selected their pseudonyms, although Gaylie did not explicitly describe the selection process. Motivated by the philosophies in the New Sociology of Childhood (Christensen & Prout, 2005), I wanted to include the children as much as possible in the generation of data; I consider their pseudonyms to be powerful indicators of their identities and feelings on nature, gardens, and their relationships with adults.

Mid-way through my research process, we gathered on the carpet, and I asked if anyone remembered what I was researching and writing about. Hummingbird (a Grade 5 girl) raised her hand: “You’re trying to write something about our class, like for a project for your university?” I nodded and replied, “So basically I’m writing about all your experiences in the garden and there’s something that I’d like you to think about. As I write this up, I’m not going to use your real names. There’s a reason for that. I’m actually not allowed to use your real names because you guys are under 18 and there needs to be a way to protect your privacy…” I asked them if they knew what ‘anonymous’ meant, and when no one offered an explanation, I told them that it “means that you have a different name and someone won’t be able to identify you”. I also told them that in many studies the adult researchers select pseudonyms for the children, but that I was uncomfortable with this. Miss Sunshine (a Grade 4 girl) raised her hand, “So we get to choose our own?!” I nodded yes, and many children’s eyes lit up as they whispered excitedly. I told the children their ‘made-up names’ did not have to relate to the garden, but if they wanted inspiration I offered a list of garden words (e.g. ‘tomato’, ‘slug’, ‘worm’, ‘daffodil’, ‘plum’) (Conversations in the Food Circle, April 27, 2012).

Some children chose their garden names immediately, raising their hands to share their choice with the group. Other children were hesitant and shy. As we went around the circle for those who wanted to share, I was surprised at some of their name choices: ‘Kim Kardashian’,
‘Mrs. Bieber’ (two girls wanted to be married to the teen rockstar, Justin Bieber), ‘Obama Jr.’, ‘Meghan Fox’, and ‘Strangle!’ to name a few (Conversations in the Food Circle, April 27, 2012). The pop culture influence was significant. I struggled with how to respond to this just as I had previously struggled with the blue gummy worms being used as an incentive by their teacher. I was surprised and slightly disappointed that the children did not offer more garden-inspired names. However, I wanted to honour the children’s selections without judgment so I then asked them to write in their reflective journals their reasons for selecting these names. At the end of this visit the teacher, Dragonfly, approached me and said that he would discuss their name choices further with the class as he wanted them “to think about their connections to the garden” (Field notes, April 27, 2012).

When I returned the following Friday most children had changed their names to something pertaining to the garden, and all but two children had written their rationale in their journals. The teacher explained to me that he inspired the children by selecting his own pseudonym: ‘Dragonfly’ (earlier in the year he was reluctant to do this, but now he saw this as an opportunity to set an example). Dragonfly explained that he loved seeing the first dragonflies in the late spring and early summer during his evening runs. It was not until listening to my recording of this conversation about the children’s pseudonyms that I heard Spider (a Grade 4 boy) mutter grudgingly, “[Dragonfly] made us do garden names” (Conversations in the Food Circle, May 4, 2012). Spider’s initial pseudonym (of which he was very attached to) was ‘Obama Jr.’

In the end, many of the children did choose plants, animals, insects or elements of nature for their pseudonyms (Reflective journals, June 7, 2012). I continue to wonder if these selections
were of their own choosing or because they felt pressure to comply with the theme of my research … :

1. **Acorn** (Grade 5 boy): “My garden name is Acorn because I remember one day when I tried to eat an acorn.”
2. **Apple Pie Juice** (Grade 5 boy): “My garden name is Apple Pie Juice. The reason I chose this name is because I like pie and apple juice at the same time.”
3. **Chef Worm** (Grade 5 girl): “The reason I chose this name is because I want to be a chef when I grow up and I like worm because they help the plants and soil.”
4. **Cucumber** (Grade 4 girl): “I choose this name because it’s my favourite velgeble. (sic)”
5. **Guava** (Grade 4 boy): “I choose this name because my parents told me try guava then I fell in love with it.”
6. **Hibiscus flower** (Grade 5 boy): “I chose this name because Hibiscus flowers grow in Hawaii. I like going to Hawaii every year with my family.”
7. **Hummingbird** (Grade 5 girl): “The reason I chose this name is I think hummingbirds are cute and I had a science project about them so I know a lot about them.”
8. **Jasmine** (Grade 4 girl): “The reason I chose this name is because Jasmines are pretty and I like the scent.”
9. **Kale** (Grade 4 boy): “I chose this name because I like to eat kale.”
10. **Kaley** (Grade 4 girl): “I chose this name because… kale + y = Kaley. I ate lots of kale at the UBC Farm and I like kale.”
11. **Killer Bee** (Grade 4 boy): “I chose this name because it sounds cool.”
12. **Lime** (Grade 4 boy): [no reason given]
13. **Mangolissa** (Grade 4 girl): “The reason I chose this name is because I love eating mangoes when their fresh or when their dry.”
14. **Mangosteen** (Grade 5 boy): “The reason I chose this name because I like to eat mangosteen and because it’s white.”
15. **Miss Sunshine** (Grade 4 girl): [no reason given]
16. **Ms. Kiwi** (Grade 4 girl): “I chose this name because I like kiwi’s a lot and sometimes they itch the back of my ‘tongues’.”
17. **Rylan Rain** (Grade 5 boy): “I choose this name cause I like to water the garden.”
18. **Spider** (Grade 4 boy): “The reason I chose this name because I find them very dangerous and interesting bug’s. I jes(sic) love watching them hunt ther pre and making ther web out of silke (sic).”
19. **Strago** (Grade 4 boy): “My garden name is Strago because I love strawberry and mango so I mixed it together and my garden name is Strago.”
20. **Strawgrin** (Grade 4 girl): “I chose this name because it is a mix of strawberrys and mangrin. I like throughs (sic) kinds of fruits.”
21. **Summer** (Grade 5 girl): “My garden name is Summer. The reason I chose this name is because summer time is when flowers start to grow.”
22. **Sunflower** (Grade 4 boy): “I choosed (sic) Sunflowers because sunflower are buetiful (sic) and there verey big flowers, just like me.”
23. **Sunshine** (Grade 4 girl): “The reason I chose this name is because sunshine is my favourite thing because it helps all the pretty plants grow.”

24. **Violet** (Grade 5 girl): “My garden name is Violet because I love the smell of violets and how they smell sweet.”

Four children chose names unrelated to the garden and provided reasons for their selections that related to their families or friends:

1. **Alejandro** (Grade 5 girl): “I chose this name because whenever this song comes on everyone comes up to me and calls me Alejandro and because it reminds me of my friends.”

2. **Nichelle** (Grade 5 girl): “I chose this name because my friend Michelle and I played a game where you change the first letter in your name. I also chose it because it’s soothing and soft like my dream of what I want to be when I grow up.”

3. **Pauline** (Grade 4 girl): “My garden name is Pauline. I chose this name because my mom like it and I like it too.”

4. **Steve** (Grade 5 boy): “I chose this name because S is the letter of spring which is one of my favourite seasons.”

Two girls wrote separate entries in their journals claiming two different pseudonyms. Summer (Grade 5) had drawn a line below her first explanation and wrote, “My garden name is Ms. Bieber. The reason I chose this name is because I love Justin Bieber a lot, and I want to be his wife” (Reflective journal, June 7, 2012). In follow-up conversations, she referred to herself only as Summer. Nichelle (Grade 5) had also drawn a line under her first pseudonym explanation and written “[‘Dragonfly’] version: The reason I chose the name ‘Winter’ is because it’s really cold and the cold to me represents cold hearted. The plants die in the winter except for the evergreen, and I love how the green really stands out”. Nichelle had crossed out this second entry (the version she thought her teacher would approve of) with a dark pen. In subsequent conversations she referred to herself only as Nichelle (Reflective journal, June 7, 2012).

To me, both Summer’s and Nichelle’s process of creating their pseudonyms are interesting examples of the fluid and evolving nature of identity construction and the ongoing power negotiations between children and adults (Christensen & Prout, 2005; Greene & Hill,
2005). I, an adult, asked the children to create their own pseudonyms and choose any name they wanted. Yet the children seemed to know that as adults, the teacher and I would prefer a name related to the garden that was consistent with my research agenda. Ultimately, I see Nichelle’s crossed out second entry as an expression of her autonomy even though she seemed to understand that it might be more desirable to her teacher and myself to select a name with ties to the garden. I appreciate this divergence and wonder if any other children felt coerced into choosing pseudonyms related to the garden but did not exercise the same independence as Nichelle...

During our last focus-group interview Strago (a Grade 4 boy) asked about their ‘garden names’: “why are we naming it?” At first I did not understand what he meant until another child, Hummingbird (a Grade 5 girl), spoke up and said, “Oh! Your garden name is just like for her report… Because we’re under like… 19” (Focus group interview, June 1, 2012). Strago joined the class at the end of the year, and I had not explained my research to him including the pseudonym’s significance. I was glad to see that Hummingbird could explain it to her classmate while also demonstrating that she understood. I am still unsure whether Strago fully comprehended the necessity of a pseudonym although his journal entries appeared to indicate that he enjoyed being creative about his selection (figure 28).
“My Garden name is Strago because I love strawberry and mango so I mixed it together and my garden name is strago”

While writing this thesis I realized that I had failed to ask the children to come up with a pseudonym for their school. If I could go back, I would ask them to contribute ideas and vote on the different selections. In their absence, I chose ‘Kale Blossom Elementary School’ as kale blossom became one of their favourite early spring snacks in the garden and is an excellent bee forage plant; many of the children became very fond of bees as evidenced by their journal entries.
Student Reflective Journals

Along with their self-selected pseudonyms, I invited the children to explore five journal prompts through text and drawings:

1. “If I were an insect/plant/animal in the garden I would be ______________ because…”
2. Draw a picture of ‘Nature’ - are you in the picture? Why or why not?
3. What is your favourite plant in the garden? Why?
4. “My favorite/ least favourite memory of being in the garden is __________ because…”
5. “What I know/ What I’d like to know/ What I learned this year” (about gardening)

I created these prompts to encourage the children to reflect upon their relationships with nature and to get a sense of how they felt about their school garden experiences. The first prompt came about after a conversation in the garden where I overheard many of the children discussing what they would like to pretend to be. The second prompt was inspired by Ostertag’s (2009) study where she asked children to draw a picture of the ‘environment’ and consider whether they should be in the picture. Using my research questions as guides, I wanted to encourage the children to be reflective of their experiences and give them a chance to be creative with their responses. I encouraged the use of drawing to help illustrate their thoughts and feelings and made it clear that there was no right or wrong answer. One prompt was introduced each week in the above order. Dragonfly helped to explain the journal prompts to the children and encouraged all the children to complete their journals.

On each of my visits the children were divided into self-selected groups to either complete these journal prompts (individually) or engage in hands-on garden work and outdoor activities such as scavenger hunts, plant-part collages, or focus group interviews. I kept a record of which methods each child engaged in to rotate the groups and invite each child to engage in all the activities. As will be shown, the children continued to select the methods of most interest to them.
Apple Pie Juice, (a Grade 5 boy), completed all of the journal prompts in just two visits and asked for more. He enthusiastically showed me his drawings and writing at the end of each of my visits where he expressed pride and enjoyment in his work. Apple Pie Juice declined to be interviewed and was usually quiet and reserved during our food circle conversations. Conversely, Miss Sunshine (a Grade 4 girl) was very vocal in the recorded conversations. She was outgoing, confident and gregarious in the interviews and gardening work but chose not to do any of the journal prompts. When I asked her about it on the last day, she shrugged her shoulders and said, “I didn’t really get to do anything because I was always in the garden.” However, Acorn (a Grade 5 boy) and Hummingbird (a Grade 5 girl) were also very vocal and participated in all methods. They engaged in the garden work and also completed all of the journal prompts. The fact that Miss Sunshine did not complete her journal suggests to me that this method was potentially less interesting to her, and that she chose to exercise her options by selecting other methods to engage with.

All of these children are examples of powerful voices in this thesis, though through very different mediums. Out of the 28 students in the class, 27 children completed at least one journal prompt (Miss Sunshine was the only one who did not), and six children completed all five journal prompts. Two of the prompts that were the most interesting to me also became the prompts that most of the children chose to respond to: 1) “If I were an insect/plant/animal in the garden I would be ______ because…” and 2) “Draw a picture of ‘Nature’- are you in the picture? Why or why not?” In the following section I include examples from these two journal prompts to illustrate the diverse (and sophisticated) perspectives of these children.
Journal Prompt #1: Imagining the ‘More-Than-Human’

The first journal prompt (“If I were an insect/plant/animal in the garden, I would be because…”) was manifested through a self-selected group of children who helped me write interview questions (to be expanded on in a further section). During this discussion, several children seemed curious and intrigued by the idea of becoming something other than themselves in the garden. Alternatively, for this journal prompt, Jasmine (a Grade 4 girl) (figure 28), wrote that she would like to be “me- a human” and seemed uncomfortable with the idea of being anything other than a human. The following photographs (figures 29-38) depict selected pages from some of the children’s journals to demonstrate the multiplicity of ideas and feelings around this topic.

Figure 29 Page from Jasmine’s (Gr. 4 student) journal

“If I were an insect plant or anything to gardens I would be me because (I like being me a human)- [continued on following page in journal].”
“I would be Rain because Rain helps all plants grow.”

“I would like to be… sun because it helps the plants grow.”

“If I were an insect in the garden I would be a bee because I can eat honey and pollenate (sic) and produce food.”
“If I was any etc. from the garden- why? Sunshine. Why because I will shine on everyone and everything. Even grow beautiful plants.”
“If I were a Insect/plant/animal/rainy/sun ect (sic)... in the garden I would be The Sun because I like to help plants.”

“If I could choose to be anything in the garden I would want to be a sun because sun always makes people happy and makes flowers, fruits and vegetables grow.”

“If I were an insect/plant/animal/soil/rainy sun etc... in the garden I would be a butterfly because I fly graceful! ME AS A BUTTERFLY”
Journal Prompt #2: Humans (and) Nature

As a warm-up for this second journal prompt, I asked the children to brainstorm all the images that came to mind when I said the word ‘Nature’. The children seemed excited to share. Their immediate vocal responses were diverse but included mostly typical images of nature, e.g. “rivers, streams, trees, leaves, bunnies, sky, flowers, fruits and vegetables”, but Acorn also included “my mom”, and Mangosteen offered “people” (Conversations in the Food Circle, May}
There were several disagreements, some consensus, and many giggles as we discussed what ‘Nature’ meant to each of us and whether we thought humans were a part of Nature. This topic will also be further explored in the section on focus-group interviews as this was a contentious issue between several children.

This was also the first day we spent writing interview questions together and so when a new boy, Strago, asked me “What do you feel when someone says ‘Nature’?” I asked him if that was a question he wanted to include in the interviews. Strago said, “no, I’m asking you.” Strago had just moved from Dubai, and we met for the first time on my previous visit. I was taken aback by his confidence and had to think about my reply: “forests and water, but then I also think of people too” (Conversations in the Food Circle, May 4, 2012). Strago seemed satisfied with this and nodded with a serious expression on his face.

The children’s illustrative responses to this journal prompt, ‘Draw a picture of Nature, are you in the picture? Why/why not?’ included many drawings of trees and water, and some insects, animals, and people. The written responses elicited a wide range of perspectives from the children. I loosely organized their responses as comprising two basic categories: ‘in the picture/not in the picture’ (which is also how I introduced the prompt). Although I recognize that the children’s viewpoints on this issue may not be binary but rather fluid, I include some of the extreme examples to illustrate the continuum of the children’s perspectives regarding their perceived individual place within or against Nature and their feelings about the larger human/nature relationship. The following photographs (figures 39-48) depict the children’s diverse perspectives on this topic.
Examples of Being ‘In the Picture’/ Feeling a Part of Nature

“I’m in the picture because I like the sounds of birds.”

“Are you in the picture? Yes because people are important to nature too.”
“Yes I’m in the picture because (sic) we are part of nature”
Figure 43 Page from Lime’s (Gr. 4 student) journal

“What I think of nature. I’m in the picture because I’m a human.”
Examples of Seeing Humans as Separate From or Even Destroyers of Nature (‘Not in the Picture’)

Figure 44 Page from Acorn’s (Gr. 5 student) journal

“Am I in the picture of nature? No, because I think humans destroy nature.”

Figure 45 Page from Hummingbird’s (Gr. 5 student) journal

“I am not in the picture because I don’t think of humans as nature. I find them to be nature killing machines.”
Figure 46 Page from Strago’s (Gr. 4 student) journal

“I am not in the picture because when I think of nature I think plain nature.”

Figure 47 Page from Kale’s (Gr. 4 Student) journal

“I am not in the picture because trees and plants are cool.”
Throughout the journal writing and especially in this prompt, Dragonfly (the teacher) commented on how valuable the use of drawing as the primary mode of expression was; he was surprised and impressed when several children, such as Sunflower (a Grade 4 boy), spent nearly 45 minutes on their drawings for this prompt and included minute details and colour, and poignant written statements. Although not all children chose to complete these journal prompts, those that did, seemed able to express themselves through writing and drawing in elegant and creative ways that were sometimes difficult for them in other mediums. The combination of text and drawings offers rich insight into these children’s perspectives on the role(s) that humans serve within, alongside or against the natural world.

Figure 48 Page from Sunflower’s (Gr. 4 student) journal

“My reason I’m not in the picture is because it’s beatiful (sic) without me.”
Student Photography

I chose to invite the children to become photographers for this study based on previous experiences where my former students thoroughly enjoyed documenting their experiences through photographic images. This choice is also supported by the literature describing the creative and engaging experience that photography can provide for children in educational research (Greig, Gaylor, & MacKay, 2007; Harper, 2000; Veale, 2005). Although I did not initially intend to have the children become the main photographers, my camera was frequently in use (as 24 out of 28 children chose to photograph), and I was very happy to relinquish this documentation effort to the children. I provided the children with my professional, digital, single-lens-reflex camera and gave each child a quick tutorial before handing it over. I asked each interested child to take only five pictures so I could maintain a record of their photographs. The children deleted any unwanted photographs on site and, during the focus-group interviews and conversations at the end of the year they reviewed and selected their favourite images for printing. We began the photography in March when the plum trees and daffodils were just beginning to bloom, and continued into June when the beans and peas had sprouted and caterpillars were everywhere; these photographs document not only the changing seasons but also the diverse perspectives of the children behind the camera.

During one of our food circles in May 2012, Sunflower, who previously told me he had no interest in taking photographs, asked “Wait, I have a question, so you just take pictures of random things?” I asked if anyone wanted to describe the subjects of their photographs for Sunflower (a Grade 4 boy). Nichelle (a Grade 5 girl) said, “I took photos of people because it was fun”. Chef Worm (a Grade 5 girl) said “People working.” Summer (a Grade 4 girl) said, “Flowers.” I added that most children had photographed plants and insects rather than humans
(with the exceptions of Guava, Ms. Kiwi, Steve, Chef Worm, and Strago) and many of the children agreed. Sunflower listened to his classmates and then said “Nah- I don’t want to take a picture anymore. I just lost interest” (*Conversations in the Food Circle, May 4, 2012*). And he stood by this; Sunflower was one of the four students who repeatedly declined to use my camera.

Acorn (Grade 5) was another boy who was initially uninterested in photography. It was not until we were in the garden during our focus-group interview in May when the children discovered a caterpillar inching its way across the asphalt and Miss Sunshine (a Grade 4 girl) shouted “someone take a picture!” Acorn shyly asked, “can I?” (*Focus-group Interview #1, May 11, 2012*). I handed him my camera, and this is the one photograph Acorn contributed to this study (figure 49):

![Caterpillar on asphalt](image)

*Figure 49 Photo by Acorn (Gr. 5 student)*
Alternatively, another child, Hummingbird (a Grade 5 girl), thoroughly enjoyed taking photographs and proudly told me in the group interview that she intends to become a nature photographer when she grows up. She also made a point of telling me that she did not take any photographs of people (she is also the student who labeled humans as “nature-killing machines” in her journal), and that when she’s a nature photographer she will photograph “like maybe plants and a little bit of animals- but mostly plants” (Focus-group Interview #3, June 1, 2012). Hummingbird wanted to take more than five photographs but unfortunately I did not have enough time to let her have a second turn. Here is the photograph she selected for printing (figure 50):

![Figure 50 Photo by Hummingbird (Gr. 5 student)](image-url)
Some children, such as Hummingbird, were very comfortable and confident with the camera. Many of the children enjoyed zooming in on small details in the garden, using the camera as a way to frame the small beauties and processes they discovered. Miss Sunshine (a Grade 4 girl) frequently lay on her belly for many of her photographs to get as close to the ground as possible. Here is her photograph (figure 51) of an orange-centered daffodil that her classmate, Jasmine (a Grade 4 girl), initially proclaimed “ugly” because it was different from the surrounding yellow daffodils (*Field Notes, April 5, 2012*):

![Daffodil](image1)

*Figure 51 Photo by Miss Sunshine (Gr. 4 student)*

Some children seemed less confident with the camera but still chose to photograph and appeared pleased with their results (figure 52):
All of the children who chose to photograph were asked to select their favourite picture to
be printed. I gave them one copy to take home to their family and one copy for their classroom
bulletin board. For the children who chose to be interviewed, these photograph selections took
place during our recorded conversations. Rylan Rain (a Grade 5 boy) is one child who was most
explicit about his reasons (aesthetic and philosophical) for taking this picture (figure 53):

Figure 52 Photo by Apple Pie Juice (Gr. 5 student)
Another student, Killer Bee (a Grade 4 boy), did not want to be interviewed but did enjoy the photography and primarily took pictures of his classmates as they engaged in garden-work. He chose the following photograph (figure 54) to print, and when I asked him why he liked this picture, Killer Bee shrugged his shoulders, seemed uncomfortable, and said, “I’m not good at those questions.” And he quickly stood up and walked away (Field Notes, June 1, 2012).
In reflecting on this awkward interaction with Killer Bee, I realize how, like the drawings in the journals, photography provided an important non-verbal and non-text medium through which the children could express their thoughts and feelings. While I appreciate the articulate nature of Rylan Rain’s response to his photograph, I learned more from Killer Bee’s budding self-awareness and refusal to elaborate; his photo stands its ground and in his eyes did not need to (or could not) be explained.

Figure 54 Photo by Killer Bee (Gr. 4 student)
Focus Group Interviews

Killer Bee (a Grade 4 boy) was one of the 13 children who did not want to be interviewed. Instead, his voice manifested in the form of photographs, drawings, and beautifully illustrated text in his journal work. Being a novice interviewer, I conducted only one interview prior to this study. Also, I was nervous about the interviews and unsure about how to proceed as on the first day of explaining my research there were mixed responses from the children. Many seemed uncertain about participating in interviews while a few very outgoing children, such as Miss Sunshine (a Grade 4 girl), relished the chance to verbally share their thoughts and said they would be happy to be interviewed individually or as a group.

Hennessey and Heary (2005) define a focus-group interview as a “discussion involving a small group of participants, led by a moderator, which seeks to gain an insight into the participants’ experiences, attitudes and/or perceptions” (p. 236). Focus-group interviews are recommended for children over the age of eight, and in groups of five to eight children to generate rich conversation with diverse opinions, rather than consensus (Cresswell, 2008; Gibson, 2007; Hennessey & Heary, 2005). The advantages of focus-group interviews with children are that they provide peer support, encourage dialogue, reflect familiar classroom settings of working in small groups, and potentially reduce the stress or intimidation of one-on-one interviews with adults (Hennessey & Heary, 2005). Focus-group interviews also save time when working with an entire classroom of 28 children. In addition, due to the limitations of an academic schedule, I would have been unable to interview each child individually.

There are also some challenges with this choice of method in that focus-group interviews can be drastically swayed by the group dynamics and setting (especially if there is one individual who dominates the conversation) and require a skilled moderator who encourages everyone’s
voice to be heard (Gibson, 2007; Hennessey & Heary, 2005). It is also difficult to transcribe focus-group interviews as there are multiple voices being recorded, and unless the researcher is familiar with the participant’s voices, it can be challenging to follow (Hennessey & Heary, 2005). I chose this method for all of these reasons (both the advantages and challenges) and found that the interviews were only successful because I spent so many months with the children. Thus, I was able to discern their voices on the recording and was familiar with their personalities which helped me support the shy as well as the gregarious children.

In my thesis proposal, I intended to conduct pre and post interviews with the children to glean an understanding of how their perspectives evolved over the course of their gardening experiences. However, based on the mixed-feelings I perceived during my initial conversation with the children and a growing understanding of the need to establish an environment of trust before embarking on interviews, I decided to cancel the first round of interviews in the winter and wait until May and June. I chose to conduct three focus-group interviews (one each week) with five children in each group. Working with the children who expressed an interest in being interviewed, Dragonfly assisted me in creating groups with a mix of boys and girls in both Grade Four and Five with diverse personalities and opinions. Because the children had been classmates and some of them had become friends over the school year, there was a significant level of familiarity and comfort between them that I believe supported the interview process.

**Writing Interview Questions with Children**

Through reading the philosophies of the New Sociology of Childhood (Christensen & Prout, 2005), I came to appreciate the importance of incorporating the children in the interview process.
question-writing process. I wanted to encourage in them a feeling of ownership and investment in the interviews and to minimize my adult-centric (and potentially boring or intimidating) questions. When I initially proposed this collaboration there were only five children (Miss Sunshine, Acorn, Jasmine, Hibiscus Flower, and Hummingbird) who expressed interest in writing the questions and being interviewed. However, when I returned the following week on May 4, 2012 to begin the question-writing process, eight more children asked if they could join our group. At this point, Violet (a Grade 5 girl) wanted to write the questions but did not want to be interviewed. By the end of the year a total of fifteen children (including Violet) chose to be interviewed and contributed a question.

I was initially nervous when a professor of mine expressed concern that the children might contribute inane and unrelated (to my central research questions) questions; she asked me how I would handle this possibility if I wanted to support the children’s contributions and involvement while maintaining my research focus. Thorp’s (2006) methodology of ‘letting go’ and trusting my instinct (and the children I had become familiar with) proved to be wonderfully affirming as the children’s questions (with very little guidance from me) demonstrated their sensitivity and intellectual capabilities. I introduced the idea of writing interview questions by simply asking them “if you were to interview your classmates about the garden, what kinds of things would you want to know about and ask them?” (Field Notes, May 4, 2012). With this initial prompt, the children contributed the following interview questions:

- Mangosteen (Grade 5 boy): “What would you do if you were a fruit and being eaten?”
- Violet (Grade 5 girl): “If you were in the wilderness, what would you eat?”
- Guava (Grade 4 boy): “What’s your favorite food? If you were a plant what would you be?”
• Rylan Rain (Grade 5 boy): “If you were a plant how would you like to be treated?”
• Summer (Grade 5 girl): “What do you like to grow in the garden and why?”
• Ms. Kiwi (Grade 4 girl): “What is your fav garden animal? What is your fav season?”
• Hummingbird (Grade 5 girl): “If you were a plant what would you be?”
• Hibiscus Flower (Grade 5 girl): “If you were a plant, would you be edible or not edible and why?”
• Jasmine (Grade 4 girl): “What’s your favourite fruit and vegetable?”
• Acorn (Grade 5 boy): “What is your favourite food?”
• Miss Sunshine (Grade 4 girl): “If you could make your own plant what would it be called (sic)?”
• Strago (Grade 4 boy): “If you were a plant what would you be and why?”
• Spider (Grade 4 boy): “What will you do if someone is picking you?”
• Nichelle (Grade 5 girl): “If you were a plant, what kind of soil would you want to grow in?”

- (Reflective Journals, June 7, 2012)

I was surprised and pleased with how eager these children were to write these questions and share them with the group. I had anticipated needing to provide much more explicit guidance on how to write interview questions but when I asked the children if they knew what an open-ended questions was, Hummingbird (a Grade 5 girl) quickly replied “it makes you think more” (Field Notes, May 4, 2012). And indeed, the questions that were contributed by the children truly made us all ‘think more’ during the conversations that followed. The children’s open-ended interview questions contributed unexpected data to this study and provided crucial insight on the children’s interests about food and nature, and their imaginative ideas about the experiences of plants. Many of my original interview questions seemed one-dimensional in comparison to the questions the children contributed.
In the remainder of this section, I will present an excerpt from each of the three focus-group interviews. The first excerpt (from the second focus-group interview held on May 25, 2012) is chosen to illustrate the power dynamics of adults interviewing children and the challenges I encountered in trying to honour the children’s active participation and budding independence. The second excerpt (from the first focus-group interview held on May 11, 2012) provides a comprehensive example of the diverse perspectives of these children and the ways that school garden discourses encouraged the articulation of these views. The third interview excerpt (from the third focus-group interview held on June 1, 2012) explores the ways that an indoor setting might constrain the conversation about school garden experiences (emphasizing the importance of place and context in school garden research) and reinforce the adult researcher’s role as the ultimate authority.

**The Power Dynamics of Working with Children**

Although there were a few children who were open to being interviewed individually, I assumed they would all be comfortable in a focus group, which was my preferred method due to logistics and time constraints. I had failed to explain to the children my rationale for selecting focus groups. I was confronted with this oversight during the second focus-group interview (May 25, 2012) when Guava (a Grade 4 boy) almost pulled out of the interview process entirely because he wanted to be interviewed individually and did not understand why I had put him in a group. The following is an excerpt from this interview in which Guava tried to understand my motives but also explored the limits of his independence and my authority as the researcher.

Guava: Um, Djamila- I have a question. How come we’re not doing interviews one by one?
Jasmine: Other people will get bored.

Violet: Yeah- it’s hard to wait. [implying that we would do it individually but everyone would wait in our proximity]

Djamila: Well, one reason is that sometimes there’s a lot of pressure for that one person to answer every single question-

Guava: I’ll take that pressure-

Djamila: You would rather do one by one? [surprised and caught off guard]

Mangosteen: Scary. [he shudders dramatically]

Violet: I’d rather do all together.

Jasmine: Yeah.

Nichelle: Yeah.

Djamila: Well… What do you think is the best solution, [Guava]?... If you’d really rather do one by one? [I’m stumped by this as in the past Guava has always requested a partner to accompany him in activities- I don’t know how to resolve this moment with all the other children ready to be interviewed as a group]

Guava: Uh… I…

Violet: He doesn’t want anyone to hear. [whispering]

Djamila: Do you think next week- would you want to do it just with me and you? [I don’t think we’ll have time next week, but I want to reach a solution that Guava feels good about]

Mangosteen: No, man! Don’t! [Mangosteen has said he won’t be interviewed if he’s the only boy]

Guava: No, I’ll just do it because [Mangosteen’s] here.

At this point Guava seemed confused and frustrated, and I felt terrible for being unable to reach a mutually agreed upon solution. I was unsure whether Guava was concerned about
confidentiality and if maybe he had something to share that he did not want his classmates to hear. I tried to reassure him, which only made it worse:

Djamila: Because a lot of times I think it’s actually a little bit more fun to have people around you and to know that all of your questions or ideas, thoughts- they’re not gonna be shared with everybody else, it’s basically for me- for my report- [thinking Guava was concerned about confidentiality]

Violet: Your report?

Djamila: Because, remember I’m a student, right? And I have to write a report-

Violet: Oh yeah.

Guava: So, right now, we’re just a project? [he says this with a sneer and raised eyebrows]

Djamila: Just a project…? [I’m stalling, unsure how to answer]

Mangosteen [to Guava]: That’s harsh.

Djamila: A project for me?

Mangosteen: I think he means like you’re using him.

Violet: Yeah- you’re using us! [Lots of giggling. I’m very uncomfortable and aware that this is all being recorded]

Djamila: That’s a really… good…- it’s a good thing that you raise [Guava]-

Mangosteen: No, but she’s paying us! She’s paying us food. [my heart sinks and Mangosteen smiles]

Djamila: No, I’m not paying you. But, [Guava] it’s a really good question. So what I’ve done is coming into your classroom, from the beginning… is saying this is a project I’m doing- yes, it is a project for me- it’s an assignment…but I was hoping is that as I come into the classroom and I ask you- ‘o.k., here’s the different things you can do: you can take pictures, you can be interviewed, you can write in your journal, you can garden- [I’m floundering as I try to explain my research again]

Guava: - so you just want to know what we like for gardening and stuff?
Djamila: Right- *but* what I’m hoping is that because you’ve said ‘yes! I want to be interviewed’, that you might find… you might learn something about yourself in the process. So, *yes*, it is for me and it is for my project-

Guava: - so you *are* using us? [*my heart sinks again as the conversation spirals*]

This conversation was one of the most difficult I have encountered in this study and in all of my experiences working with children. Guava is a highly intelligent and confident 10-year-old boy who was seemingly confused about this interview and my research and wanted to challenge me. The other children appeared uncomfortable but highly fascinated as they watched me squirm under Guava’s confrontation. I managed to get through this conversation with a shallow plea that if Guava chose to conduct research himself one day maybe he would be inspired by this first interview experience. To this, he asked me if I planned on “taking my doctorate” and told me that if I did not, my masters degree would be a waste of time. He also continued to ask what this “project was *for*” and even as I tried to explain that Guava would be helping me tell a story about his experiences, I was at a total loss; I felt like the rug had been pulled from under me, and I suggested we call off the whole interview.

After a quiet pause Guava chose to stay with the group and “get it over with”. I told him several times that we could make a new plan for the following week, and that I certainly did not want him to be interviewed if he felt like I was only using him for my benefit. Guava chose to stay and was very vocal and playful throughout the remainder of the interview although the group seemed noticeably shaken by this initial face-off, and it was difficult to maintain a focused conversation (*Focus-group Interview #2, May 25, 2012*).

I was confused and disheartened by this experience, but when at the end of the day I spoke to Guava’s teacher, Dragonfly, he told me he was actually proud of Guava. Dragonfly encouraged critical thinking, and he considered Guava’s interrogating me as a healthy sign of
Guava’s respect for me and that he was not afraid to ask me difficult questions. I felt that I handled this situation poorly; it was extremely painful to later hear and transcribe my stuttering recorded responses. I must admit, I was relieved, when, on the last day of this study, Guava approached me with wide eyes full of emotion, shook my hand and said “Djamila, thanks for everything you’ve done” (Conversations in the Food Circle, June 5, 2012). It seemed we had reached a truce, and I will be forever grateful for Guava’s genuine questions that forced me to consider the essence of power dynamics between researcher and participants, adults and children.

**Children can be Natural Philosophers**

The challenging interview with Guava’s group was the second round of focus-group interviews. The first group of children (Miss Sunshine, Acorn, Rylan Rain, Hibiscus Flower, and Spider) gathered in the grass on the edge of the school garden on the sunny morning of May 11, 2012. The dynamics of this first group could not be more opposite from Guava’s group. As with all three focus-groups, at the beginning of each interview, I discussed the necessary ground rules for respect and good listening, regardless of how different our perspectives might be. This first group acknowledged the importance of diverse ideas and warmly encouraged each other throughout the 40 minute in-depth discussion wherein the children laid on the grass, studied small white butterflies and a meandering caterpillar, and towards the end of the discussion, formed a large “Converse Star” with all of us sitting on the sidewalk, connecting the tips of our matching sneakers, creating a star-shape with our denim-clad legs (mine included).
During this focus group, Rylan Rain’s interview question: “if you were a plant, how would you want to be treated?” and my overarching questions: “are gardens important? Are you important to the garden?” stimulated rich conversation about the lives (and deaths) of humans and plants. All of the children in this group agreed that gardens were important and expressed varying ideas about why gardens and plants were important to humans. A debate between Miss Sunshine and Acorn about whether *humans* were, in turn, important to gardens became a central theme in this focus-group interview. Here is an excerpt of this conversation:

Djamila: So, what I wanted to ask you guys is, do you think gardens are important? [Everyone but Spider replies “yes”. Spider announces “Oh! I found the seed!” (he is distracted as he pulls apart a dandelion)]. Why do you think gardens are important?
Acorn: So we can eat our vegetables.

Miss Sunshine: Because without plants we’d be dead- because they breathe in oxygen and we give them carbon dioxide [Hibiscus Flower corrects her, “they give us oxygen”]

Acorn: And we eat them!

Rylan Rain: Because if everything was destroyed there would still be a little plant growing.

Miss Sunshine: Yeah- if we weren’t here, they’d be dead. If they weren’t here, we’d be dead.

Djamila: Huh. O.k.- so do you think that you’re important to the garden too?

Miss Sunshine: Yeah.

Acorn: Sometimes.

Djamila: Sometimes?

Miss Sunshine [to Acorn]: Yeah we are.

Acorn: Sometimes it grows by itself.

Miss Sunshine: Yeah- because we breathe out carbon dioxide which we don’t like so the plants like it so they breathe it in.

Acorn: Yeah, but we’re still animals. [Everyone is excited and talking over each other- hard to sort out voices…]

Djamila: So it’s like we give them something and they give us something?

Miss Sunshine: Yep.

Acorn: There’s like plants from a long time ago… and we weren’t here yet- so they can survive without us.

Djamila: Ah! So that’s interesting. So [Miss Sunshine]’s saying that we give off carbon dioxide and take in oxygen so we have this sharing relationship… but [Acorn]’s also pointing out that there were plants before there were animals- is that what you were saying?

Acorn: No, there’s plants before us.
Dj: Before *humans*?

Miss Sunshine: Yeah, of course. There’s a lot of things before us.

Acorn [to Miss Sunshine]: Then how’d it [the plants] survive?

Miss Sunshine: Dinosaurs!

Rylan Rain: I *love* dinosaurs. *[Smiling]*

This circuitous and very philosophical conversation is, to me, indicative of the diverse ecological knowledge and perspectives of these children. Miss Sunshine and Acorn also engaged in a debate about whether dog manure was helpful or harmful to their garden, and Miss Sunshine asked me if I thought “*animals* were important to the garden” to which Acorn repeated, “aren’t *we* animals?”, and Miss Sunshine responded “yeah, we’re animals”. Rylan Rain added to this conversation by pointing out that some things in nature may not be important to humans, but still played an important ecological role in the food web:

Rylan Rain: Do you know how some things are just… *made*…? But, they actually do something bad to you but they’re actually helping the world by feeding *other* animals?

Djamila [to Rylan Rain]: So, what do you mean by that?

Rylan Rain: So, let’s say like we *hate* raccoons, um… you know how we hate them? because like they eat our trash… but like other animals might eat *them*, but they’re not helpful to *us*- they’re just helpful to the other animals.

Miss Sunshine: Eagles can eat them.

Djamila: Yeah- so, [Rylan Rain], maybe what you’re saying is that there are some things that are important to *humans*, but some things that- {Interrupted by Spider who wants to show everyone the seeds he’s discovered in the dandelion}

Rylan Rain: What I’m trying to say is that everything is made for a *reason*. Like God didn’t make something just for… it hurting us.

Djamila: *For* no reason?
Miss Sunshine: Scientists said… everything’s connected. It’s supposed to mean all the planets were broken off from the sun or the moon- or the moon broke off from the earth. That’s what they say.

Rylan Rain’s initial question about the utilitarian roles of animals in ecosystems inspired Miss Sunshine’s point that “everything’s connected”, to which the rest of the group agreed. This train of thought led to a lengthy esoteric and scientific conversation among the children about “black holes”, “atoms”, “galaxies”, “cells”, and even “aliens”, as the group discussed the smallest and biggest elements of our universe and how they/we are all connected even when we do not understand them or they are invisible. Spider also suggested that it might be impossible for Earth to be the only planet with life, and Acorn questioned the anthropocentric (human-centered) view of humans as the center of the universe:

Spider: Like there’s so much galaxy out there! We can’t be the only planet with life!

Miss Sunshine: Yeah, I know. I agree with [Spider].

Acorn: *This* planet has life… We’re *aliens* to aliens.

The group seemed to share this constructivist and existential ontology, even while Rylan Rain interjected faith-based comments about “God”, “up there”, and “where we go when we die”. Furthermore, Rylan Rain’s interview question, “If you were a plant, how would you want to be treated?” engaged the group in fertile conversation about morality, equality, and “fairness” as they discussed the interactions between plants and humans and acknowledged that humans do kill plants for food. Spider’s question “What would you do if you were being picked?” elicited creative ideas about how plants respond to being picked and the humane responsibilities that we have in picking plants respectfully. Rylan Rain explained the way he would prefer to be picked if he were a plant and also how plants are similar to humans:
Rylan Rain: “So if they [humans] do it brutally, then I would just die. But if they pick it right way, they pick the fruit… and then they could just plant- it, when they finish the fruit- they could just cut more, like cut the fruit and get the seed and plant it again. It’s like what humans do, they have a baby, the baby grows up, and they have another baby, and stuff like that…” [He gestured with his hands to demonstrate a pregnant woman]

Hibiscus Flower explained that she would feel honoured to be picked (if she were a plant) because she would feel special and useful. Hibiscus Flower: “I would be happy that they picked me because I’m like one kind, and there’s so many others that they could pick…” Acorn and Rylan Rain agreed with Hibiscus Flower on the importance of feeling useful:

Acorn: I would want to be picked. Because you know plants just die- if they’re too long, right?

Djamila: Just like anything else…?

Acorn: So if they could be used… then die.

Djamila: So you’d want to know you had a purpose?

Acorn: Yeah.

Rylan Rain: Instead of just die.

To these points, Miss Sunshine added thoughts about how humans are important to plants by giving a “helping hand” as we replant seeds and provide water to ensure the continued growth of that plant. Rylan Rain added his thoughts about the interdependence of plants and humans but also the autonomy that plants are able to exercise:

Rylan Rain: “I always think that if you are taking care of the plant- they grow up to be beautiful fruit or a plant you can take care of. But if the plant hates you- it can just die.”

Life cycles, mortality, and (to my surprise) the explicit topic of death (both botanical and human) became central themes throughout this conversation. The children’s refined individual
perspectives on biology, cosmology and ecosystems as well as their ability to listen to and respect their classmate’s diverse views on these issues impressed me.

An Indoor Interview

On June 1, 2012 we planned to hold the third and final focus-group interview (with Hummingbird, Lime, Strago, Summer, and Ms. Kiwi) in the school garden. However, it was cold and threatening to rain and so after briefly exploring the garden, I asked the children to pick a small plant specimen to bring into the school as we needed to relocate due to the weather. We
conducted the interview in a stuffy, windowless office adjacent to their classroom. Without the
distraction and stimulation of the natural world the interview seemed suddenly (and awkwardly,
to me) formal and serious as we sat in metal chairs around a circular table. We began the
conversation with the children testing the microphone on my recorder so that they could hear
their voices and describe the small plant specimen they had chosen from the garden. In my view,
these flowers and leaves that had been hurriedly plucked as it began to rain, provided small bits
of beauty and visual stimulation as the children caressed and dissected the petals, leaves, and
stems throughout the interview. A remnant of Hummingbird’s small purple petal remains on the
edge of this computer where she placed it that day.

Because we lost time changing settings, this focus-group interview lasted only 25
minutes rather than the 40-45 minutes that the first two focus groups experienced. From the
moment we sat down around the table, Hummingbird (a Grade 5 girl) seemed to know we were
rushed, and that I could use some assistance. She asked to hold my recorder and pointed it
towards whoever was speaking, corrected my spelling of one of her classmate’s names,
explained to Strago the importance of a pseudonym, and at one point when the group lost focus
Hummingbird gently reigned us in: “Guys, we have to get on with the interview.” However, she
also playfully employed a British accent in several of her answers and connected the thoughts of
many of her classmates.

When I asked the group if they thought gardens were important, everyone said yes and
Hummingbird explained that gardens were necessary because they provided “…food and [made]
the world colourful”. Similar to Miss Sunshine’s statement in the first interview about
everything being related, Hummingbird explained that plants provided resources for everything
in our lives:
Hummingbird: “And like everything- if you do make something… like clothes and buildings… if you go back to when they first start building it- it all comes from plants, because there’s nothing else that you can build it from. So, if it’s built out of plastic then you can think back at plastic and then- it’s somehow all related to plants.”

Hummingbird’s strong statement about everything being ‘related to plants’ led to our discussion about whether humans were in turn important to gardens and plants. Most children in this group (Summer being the exception) agreed that humans were important to gardens and Hummingbird elaborated on the complexity of why, in an urban context, we were especially important to gardens:

Hummingbird: Well, like- before any human was born the plants were growing by themselves… but because of what humans made- like all the buildings… they need help {giggle} from people to… grow.

Djamila: Hm. So, you’re saying that- before there were any humans? Is that what you mean?

Hummingbird: Before… when people actually [didn’t] build big buildings that hurt the environment and stuff… ‘cause they [plants] can grow on their own before. The plants- that’s how they started saving seeds… ‘cause they could have grown just as well on their own- but because of all of the…

Summer: Buildings.

Hummingbird: Because of the buildings and stuff – then they [plants] need help…

Djamila: So, maybe, [Hummingbird], you’re saying that because we’ve changed the environment so much-

Hummingbird: -yeah.

Djamila: We’ve built all these buildings and roads and different things that are human… that now we actually have to help the plants grow-

Hummingbird: -yeah.
Hummingbird’s understanding of our urban and self-made situation offered insightful thinking on the dimension of time and how modern humans have made ourselves necessary to the survival of plants simply due to the ways we have constructed (and possibly depleted) our environment. During this discussion Hummingbird also whispered under her breath that she considers “humans [to be] nature-killing machines”; she also wrote these exact words in her journal when I asked her to consider whether she is a part of Nature.

Ms. Kiwi (a Grade 4 girl) was more reserved than Hummingbird adding that she felt “sorry for the plants… if we are not important to them” but when I asked her why she thought humans should be important to plants, she shrugged and said “I just think it”. Lime (a Grade 4 boy) considered this and asked: “Djamila- who, like from the very past…with no people- how did the seeds grow, because like, who actually gave the seeds?” Summer (a Grade 5 girl) quickly replied “Nature”, to which Hummingbird added, “That’s what I’m saying. At the very beginning, that’s why the plants don’t need us”.

Strago (a Grade 4 boy) remained quiet but attentive throughout this discussion that ended abruptly as Summer looked at the clock (which didn’t exist in the two previous interviews held outdoors) and announced “I have to clean my desk.” I tried to wrap up the conversation by asking, “Anyone have any last questions or last thoughts about how you feel about gardens?” to which Summer impatiently said, “No. No one does.” The other children immediately scraped their chairs back and pushed toward the office door as they realized it was the end of the school day. I thanked the children for their time and thoughts and they politely called “thank you Djamila!” as they hurried back to their classroom (Focus-group Interview #3, June 1, 2012).

Although we did not enjoy the relaxed luxury of the first interview in the grass with butterflies and caterpillars, the children in this focus-group interview expressed a range of
diverse attitudes about the relationships between plants and humans that were in line with the continuum of perspectives expressed by the other two focus-groups. By conducting three focus-group interviews on different days and in multiple settings, I was able to appreciate the influence not only of the interview setting and group dynamics, but also of the diverse personalities and perspectives of each child. In reflecting on these three interviews, I am thoroughly impressed by the children’s abilities to verbally express sophisticated ideas about their perceived place in the natural world while striving to understand the objectives of research and the dynamics of group discussion.

Figure 57 Photo by Strago (Gr. 4 student)
My Field Notes and Reflective Journal

Researcher observations in the form of field notes contribute important insight to other methods. While it is impossible (and possibly not desirable) to extricate oneself from the inevitable interpretation that occurs while writing field notes, the aim is to be as objective as possible (Cresswell, 2008). In my field notes I documented the children’s language, behaviour, and ways of engaging in the multiple research methods I offered (photography, journals, focus-group interviews, hands-on gardening, group discussions, and art projects).

In the beginning of this study, I kept a notebook with me at all times, but often I found it difficult (and intrusive) to write field notes in the children’s presence. However, during one of our group discussions where I had forgotten my notebook, Apple Pie Juice asked me, “aren’t you going to write?” (Field Notes, April 12, 2012), and I realized that some of the children had come to expect my note-taking. Nevertheless, I found it most useful to audio record our conversations and write my notes at the end of the day with the help of these audio recordings.

In addition to these observational field notes, I also kept a personal reflective journal where I contemplated my daily experiences with the children (successful and challenging), and continued to consider the influence of my role as an adult researcher. The combination of these field notes and my reflective journal give depth to the research methods detailed in prior sections. While it is impossible to summarize my field notes or reflect on each child (there were 28 children in the class), I have chosen several examples of my field notes documenting moments and responses that illustrate 1) the diverse preferences and comfort levels of the children engaged in hands-on garden work, 2) their curiosity, affinity for, or disinterest in soil, insects and plants, and 3) the evolving relationships between the children and myself.
Soil Might be “Dirty”

Jasmine is a girl in Grade Four whose family is from the country of Jordan. I joined her class in the school garden on November 17, 2011 to help the children and Dragonfly mulch their garden beds in preparation for the winter months. We spread rotting leaves and sheets of cardboard over the rectangular beds, and as I handled these materials with bare hands, Jasmine exclaimed:

“Wow! You are really brave- getting your hands dirty. I don’t like getting my hands dirty. I’m the one that doesn’t like to eat vegetables. Well, maybe some. I do like carrots, cucumbers, potatoes and lettuce too. But that’s it. And watermelon.”

I was intrigued by Jasmine’s self-awareness and also reluctance to get her hands anywhere near the soil. As she watched me work alongside her classmates she added, “and I don’t really like plants- just flowers. They’re prettier.” To this I asked: “So you like flowering plants?” and Jasmine replied, “No. Just flowers.” Although she did not touch the mulch or the soil, Jasmine washed her hands when we went inside (Field Notes, November 17, 2011).
In the spring we began planting the garden, and the children took turns photographing the quickly changing environment. As usual, Jasmine stayed close by my side whenever we went outside. But on April 5, 2012 she scampered through the beds of spring blooming bulbs and came running back to me, wanting to show me an orange daffodil. “Isn’t it ugly?” Jasmine asked. Her classmate, Miss Sunshine (a Grade 4 girl) was laying flat on her belly to photograph this unusual daffodil and seemed absorbed in the experience. I told Jasmine I thought the orange daffodil was beautiful, and she suddenly agreed, “oh yes, it’s beautiful!” I suggested maybe she smell it and compare its scent to the surrounding yellow blooms. “I’m scared of bees!” Jasmine protested, adding “and I don’t want to bend down” (Field Notes, April 5, 2012).
Later that day we were engaged in planting potatoes in the garden. Sunflower (a Grade 4 boy) was covered in mud and enthusiastically unearthing forgotten, sprouting potatoes from the previous year, exclaiming “Potato!!” with each discovery. It was a confusing process of planting new potatoes while trying to keep the old ones in the ground (Sunflower seemed intent on digging them all up). Acorn, Chef Worm, Mangosteen and Sunflower worked together to pull out the invasive mint, dig holes for the potatoes and plop in a variety of blue and Yukon gold tubers.

Jasmine found me in the midst of this group and asked if she could help plant potatoes. Although the others had already planted far more potatoes than the bed could accommodate, I was excited that Jasmine wanted to plant something; this was the first time she had expressed any interest in getting close to the soil. When I asked her if she wanted to dig the hole she vehemently shook her head and so I dug it for her. I handed her a small blue potato and she gingerly plopped it in the hole. I asked her to cover the potato with soil but she shook her head ‘no’. I covered it for her and she smiled, seeming pleased, and asked, “Can I plant another one?” On her third potato Jasmine nudged it into the hole with her foot and told me she was afraid of worms because “they might be dirty” (Field Notes, April 5, 2012). Throughout the year in all our outdoor experiences, Jasmine refrained from sitting on the grass or touching soil, compost or insects.

During this same early-spring day in the garden I could not help but notice many of Jasmine’s classmates eagerly exploring the garden, getting sweaty and dirty. Sunshine (a Grade 4 girl) gathered fresh herbs near our potato patch and rubbed lemon balm, fennel, and sage leaves between her muddy fingers, inhaling deeply, “Doesn’t this smell amazing?” Nearby, Strawgrin (a Grade 4 girl) watched the potato planting and weed pulling with uncertainty. She had been
hesitant to engage in the physical garden work and asked if I had a second scavenger hunt for her to complete (she had already done one the week before). When I told her no, she set off to explore the blooming muscari flowers lining the main path. Strawgrin returned with a fistful of tiny, waxy, blue blooms whispering, “Aren’t these beautiful?” and assured me “I didn’t pick them, they were on the ground”.

Strawgrin smiled and carefully handed me a few of her precious flowers and offered some to her friends who were completing scavenger hunts and using the camera. She came back to me and said, “Let’s do an experiment…”. Using her fingernail, Strawgrin opened the tiny bud and squealed, “look! It’s the seed!” She noticed that Miss Sunshine had a clipboard, and I had my notebook. She stood next to us and declared, “We’re all scientists”. Strawgrin and Miss Sunshine found a bare patch of soil and poked the muscari buds into the hard earth, marking the planting with a cedar twig. Strawgrin exclaimed excitedly, “look! It’s sprouting!” (Field Notes, April 5, 2012).

At the end of the day we had excess potatoes, and I offered them to interested children. Although Apple Pie Juice (a Grade 5 boy) said he did not have any outdoor space at home, he was excited about planting the potato in a bowl of shallow water to watch it sprout. When I asked if any other children wanted to take potatoes home, at least ten children raised their hands and eagerly accepted the muddy potatoes. When Violet (a Grade 5 girl) received hers she quickly dropped it and said “eew- never mind.” Acorn (a Grade 5 boy) happily took Violet’s rejected potato to plant at home.
Creating Visual Stories with Plants

On my next visit (April 12, 2012), I gathered a group of eight children in the garden to collect plant parts for interpretive collages. As an introduction, I showed the children my own plant collage (created from wild ginger leaves, wood violets, and periwinkle) symbolically depicting my family members on an island in Hawaii; I spoke of my love of water and encouraged the children to think of a guiding theme for their own plant collages:

Chef Worm: “Cooking. Something about food”
Summer: “A sunset maybe”
Steve: “The color red”
Kaley: “Sky”
Kale: “Family”
Acorn: “Just pretty things”
(Field Notes, April 12, 2012)

The children enthusiastically scoured the garden, collecting a vibrant assortment of flowers, leaves, vines, and twigs that were later arranged between sheets of waxed paper, pressed in heavy books, and glued into collages that were mounted on their classroom walls. This activity became a repeated favourite for many children, especially Alejandro, Miss Sunshine, Summer, Jasmine and Hummingbird. Unfortunately, the first round of pressed plants were covered in a furry mold when I returned the following week, repulsing all of the children, but not discouraging further efforts. To Dragonfly’s surprise (Spider was frequently reprimanded for being distracted, rude, and unfocused), Spider’s (a Grade 4 boy) detailed collage included a full moon created by tiny plum blossoms raining down on individual blades of grass and flowers (Figure 59):
Summer (a Grade 4 girl) was another student who seemed to cherish the small beauties of plant parts, creating multiple plant collages and even hand-made jewelry from twigs and vines. When I brought a heavy art book by Andy Goldsworthy to press the plants, Summer carefully flipped through the images of ephemeral ‘earth works’, absorbed in Goldsworthy’s photographs of frost shadows, leaf rivers, and ice bridges, whispering, “wow, that’s so beautiful. That must have taken him a really long time”. The following week Summer came in from recess wearing a crown, several bracelets, and a ring she had woven from vines on the playground. She placed these jewelry pieces on the Goldsworthy book and noted that they shared the same circular shape.
that was a favourite of Goldsworthy (figure 60). Later that afternoon Alejandro (a Grade 5 girl) found a tiny snail in her bag of plant parts and immediately gave it to Summer who gingerly placed the little creature on the end of her woven ring which she wore for the remainder of the day (Field Notes, April 12, 2012).

During the first day of creating plant collages, Miss Sunshine (a Grade 4 girl) squeezed her red tulip petals and rubbed the juice all over her hands squealing dramatically “I’m bleeding!” I found Lime (a Grade 4 boy) in a corner, uninterested in creating an image with his
plants, but bashing the centers of a tulip and a daffodil together (he had pulled off the petals to expose the pollen). When I asked him what he was doing Lime said, “I’m pollinating!”

Sunflower (a Grade 4 boy) collected far more plant specimens than he was able to use in his collage. When it was time to clean up I asked him if he would like to put the extra plant parts in the compost. Instead, he asked if he could bring the wilted, mashed petals and leaves home explaining, “I just like to play with them, like sometimes I’ll just sit on the couch and hold them”. *(Field Notes, April 12, 2012)*

Sunflower demonstrated his affinity for and tenderness towards flower petals on my last visit as well. I passed around a fully bloomed red rose from my home garden, and the children asked if they could each pluck a petal to keep. Sunflower gently rubbed his petal on his nose and then gave it to me. When Jasmine asked if she could have it, I handed it to her without thinking and Sunflower protested, “It was a gift for you.” Jasmine reluctantly gave it back to me, and Sunflower smiled.

**Memory Book**

On this farewell visit (June 5, 2012), to my surprise and honour, the children presented me with a most personal memento: a memory book with their class photo wherein each child wrote and illustrated individual thank-you’s describing their memorable times throughout the project (Dragonfly and the children gave me permission to share this memory book in this thesis). Four girls also recited a group poem as the rest of the class watched my reaction:

* Nichelle: Some people talk and talk and don’t say a thing…
* Ms. Kiwi: Some people look at you and birds begin to sing…
* Summer: Some people laugh and laugh but yet you want to cry
* Hummingbird: Some people touch your hand and music fills the sky
Below are selected pages from the memory book given to me that day, depicting examples of the children’s favourite memories (figures 61-66). Their playful and tender personalities can be felt in their handwriting, choice of words, and drawings. Equally important, to me, are the memories themselves, demonstrating the enjoyable and significant parts of this collaborative research.

Figure 61 Page from Memory Book: Sunflower, Gr. 4 student

“Dear Djamila thank you for showing me how to press plants and for sharing your Ideas (sic) with me. You are very nice and thoughtfull and helpful (sic). And thank you for sharing new foods with me. You are” - continued on following page of journal
“Dear Djamila, Thank you for spending a whole lot of time with us. The food that you use to bring was delicious like very delicious. I really liked the interview of the flowers, plants, and the photographs. It was fun. Fridays are the best days of the week and I also like it. Thank you for all the things you did. Love, [Strago]”

“Thank you for teaching me how wonderful gardening is! (Plus showing me that being a nature photographer’s awesome!”)
“Thank you Djamila for introducing me to new foods that I’ve never tried before”

“Djamila, Thank you for introducing me to all the tasty foods you brought us and for all the fun activities like taking pictures and looking at nature. I like you very much!”
As the children handed me their memory book and squeezed my waist with hugs, it was hard to ignore the emotionally romantic and sentimental lump blooming in my throat. I thought of Van Manen’s (1990) words about only being able to understand something for which we care, and while I do not presume to fully understand these children, I regard them as exceptionally intelligent and compassionate beings with whom I was honoured to spend the year learning and for whom I cared deeply.

It is impossible to include in this paper every detail of the research process and the data that emerged through my work with these children. It is my hope that by including contributions from each method and each child via photographs, quotes, journal pages, and observations, I
have presented a collage of school garden experiences, perspectives, and ecological literacies manifested as data. Through my voice as the researcher, the following chapter will intuitively synthesize these emergences as a holistic exercise at meaning-making.

Figure 67 Photo by Rylan Rain (Gr. 5 student)
CHAPTER FIVE: SORTING SEED

Synthesizing Experience

The Place Where We Are Right

From the place where we are right
Flowers will never grow
In the spring.

The place where we are right
Is hard and trampled
Like a yard.

But doubts and loves
Dig up the world
Like a mole, a plow.
And a whisper will be heard in the place
Where the ruined
House once stood.


Figure 68 Photo by Lime (Gr. 4 student)
A Love of Ambiguity and Multiplicity… and a Setting Aside of ‘Getting it Right’

In Chapter Four I presented the data of this thesis as this study’s metaphorical fruit. Botanically speaking, fruits are the protective vessels for seeds with seeds being both the beginning and culminating points in the lifecycle of a plant. This chapter adopts the metaphor of ‘sorting seed’ which I understand to be the human action of sifting through the metaphorical seeds, or emergences, of this study as a synthesizing and meaning-making process. I introduce this chapter with Amichai’s (2009) poem as a reminder that, as I intentionally synthesize, reflect on, and interpret these emergences, I am not aiming to be right. Instead, I am maintaining a ‘tentative voice’ (Lather, 2001) as an invitation for multiple understandings to sprout and grow and to stay open to the ‘lines of flight’ (Deleuze & Guattari, 1987) and multiple interpretations that are possible in this synthesis.

I chose to close Chapter Four with a photograph of apple blossoms taken by a Grade 5 boy, Rylan Rain (figure 67). I now chose to open this chapter with a photograph of the same young apple tree taken by Lime (a Grade 4 boy) (figure 68). Both boys were drawn to these ephemeral blossoms for what might be indescribable reasons. Without any direction from me, Lime and Rylan Rain chose to photograph this tree from different angles. The two photographs offer us a glimpse of their positions behind the camera where with their sneakered feet they stood on the muddy ground with the camera strap around their neck, standing very still as they focused the camera lens.

During our focus group interview on May 11, 2012, I asked Rylan Rain why he chose the apple blossom photo for printing:

Rylan Rain: It looks like art kind of. Like one big one and something surrounding it (he touched the screen and gestured at the arrangement of the apple blossoms in the photo)
Djamila: So, the composition- the way you chose to frame the apple blossom?
Rylan Rain: My auntie’s an artist, so yeah- I can… And she takes pictures of… *(Rylan Rain was distracted as he noticed my screen saver photograph of the full moon from the previous week)*

Rylan Rain *(referencing my screen saver picture)*: Is that a moonlight?

Djamila: It is. Did you guys see the full moon last week? It was the super moon, it was the closest-

Rylan Rain: Was it red?

Djamila: That was the color of it- it was the closest the moon comes to the earth all year. And it was really, really close, it was called the super moon-

Rylan Rain: In our area, it was white- big white. I’m surprised yours looks like that.

*Figure 69 My photograph of the ‘Super Moon’*
As Rylan Rain points out, we may all gaze at the same moon, but the moon may present itself in slightly different hues and luminance depending on our angle of repose and the time of night we happen to look up into the sky. Throughout this chapter, I want to emphasize that my understandings and meaning-making of this study are not the final authority. This process is not about getting it right; I believe it is about transparently situating ourselves as researchers with the power to interpret data. The emergences I choose to discuss and those I do not are informed by my experiences, observations, and positioning in this study. I see this process as an opportunity to move beyond tendencies to obsess over clarity, simple conclusions, and mastery (Jardine, 1998). Throughout this study, I consider myself a “bricoleur”, or one who holistically assembles images, ideas, and perspectives to tell a story (Denzin & Lincoln, 2008, p. 5). My goal in this chapter is to be receptive, reflective, and curious; to invite discussion as I sift through and pay close attention to the data that emerged.

My synthesis of this study’s data is informed by my commitment to listening with intention and paying close attention to the children and myself over the course of this study. This synthesis is also guided my life experiences, observations, and world-views; these will be inherently partial and imperfect. The beauty of this process is that it invites critical reflection, conversation, and understanding (Jardine, 1998). It is my hope that my synthesis will encourage dialogue on children’s school garden experiences and perspectives.

Validity and Insight

One of the goals of phenomenologically-inspired research is to provide insight while shedding light on particular experiences (Danaher & Briod, 2005). Danaher and Briod (2005)
discuss the one-dimensional fixation on validity and objectivity that many researchers endlessly pursue. Approaching the subject of validity from a different angle, Danaher and Briod (2005) discuss Polkinghorne’s (1983) guidelines for creating work that is intrinsically “true, beautiful, and good” (Kvale, 1996, cited in Danaher & Briod, 2005, p. 252):

such research must guarantee its own validity in its own language, in its: (a) vividness, describing the feeling of genuineness; (b) accuracy, making writing believable, enabling readers, also, to ‘see’ what it is like; (c) richness, the depth of description, the sensual-aesthetic dimension; (d) elegance, unifying the essential description in simple and economical expression (Polkinghorne, 1983 p. 46, cited in Danaher & Briod, 2005, p. 225).

As a co-participant in this study, true analysis, meaning-making, and synthesis happened for me on a daily basis over the course of my time with the children. At the end of each of my weekly visits with the children I reflected on the day in my researcher journal. These insights recalibrated my research process and continue to guide my synthesis. I offer the following thoughts not as an attempt to neatly wrap up this study, but to foreground reflection and insight as the researcher, and to gesture towards multiple possibilities of interpretation and understanding. I am borrowing Polkinghorne’s (1983) framework of striving for ‘vividness, accuracy, richness, and elegance’, to guide the synthesis and writing of this thesis.

In the following sections I will interpret and synthesize the data based on themes that intuitively emerged throughout the research process. These themes manifested through attentive listening to the children’s voices and observing their actions, as well as through my own researcher reflections.

These themes include:

1. Sensuality and the Sharing of Food
2. Ecological Identities, Relationships, and Literacies
3. Participation through Multiple Discursive Methods

Sensuality and the Sharing of Food

Because the school garden at Kale Blossom Elementary School is largely an edible garden, I felt it was important to consistently highlight and discuss food with the children- to include these conversations as an important element in the research process, and to embrace the cultural and sensual dimensions of food in this school setting. Throughout our tasting circles the children and I discussed the importance of trying new foods, having an open mind, and enjoying healthy food. We discussed the learning process as encompassing not only our eyes and our brain, but also our tongues, noses, and fingertips.

It was a privilege for me to sit in a circle with these children tasting small bits of raw green onions, steamed beets, mangosteen, bok choi, shortbread cookies, and ripe strawberries- discussing the flavours, textures and cultural significance of these foods. In the memory book the children gave me at the end of the year, 20 of the 28 children mentioned food as a memorable experience in this study:

- “…it has been a good experience to be with you to try new foods” (Ms. Kiwi, Gr. 4 girl)
- “…thank you for giving us all the things to taste and smell” (Summer, Gr. 4 girl)
- “Thank you Djamila for introducing me to new foods that I’ve never tried before.” (Steve, Gr. 5 boy)
- “Thank you for letting me try all kinds of different food” (Nichelle, Gr. 5 girl)
- “Thank you for introducing new fruit and vegetable to me” (Mangosteen, Gr. 5 boy)
- “Thank you Djamila for introducing us to new types of foods” (Guava, Gr. 4 boy)
• “Thank you for bringing awesome snacks. Now I have new things I like.” (Strawgrin, Gr. 4 girl)
• “Thank you for everything you brought for us to eat and smell.” (Cucumber, Gr. 4 girl)
• “Thanks Djamila for introducing me to new foods I never seen before.” (Kale, Gr. 4 boy)
• “Thank you for introducing me to new foods.” (Acorn, Gr. 5 boy)
• “Thank you for the healthy snacks you brought in.” (Pauline, Gr. 4 girl)
• “Thanks for sharing all the new foods.” (Sunflower, Gr. 4 boy)
• “The food that you use to bring was delicious like very delicious.” (Strago, Gr. 4 boy)
• “Thank you for the cool recipies (sic) bringing in new foods for us to try.” (Chef Worm, Gr. 5 girl)
• “Thank you for so many things like bring (sic) new foods that I tried.” (Apple Pie Juice, Gr. 5 boy)
• “Thank you for introducing me to all the tasty foods you brought us” (Sunshine, Gr. 4 girl)
• “Thank you for bringing lots of new and yummy foods” (Alejandro, Gr. 5 boy)
• “Thank you for sharing snacks and introducing me to lots of new foods. My favourite was bok choi!” (Spider, Gr. 5 boy)
• “Bok choi! Herbs! Cucumbers! Kale chips! We want seconds please!” (Violet, Gr. 5 girl)
• “Thanks for letting us taste foods I have never tasted.” (Killer Bee, Gr. 4 boy)
• “Thank you for introducing me to new foods” (Rylan Rain, Gr. 5 boy)

When I asked the children to write in their journals what they learned this year in the garden, several children mentioned learning about specific foods such as kale. Apple Pie Juice (a Gr. 5 boy) wrote “This year in the garden I learned that trying new foods is important more important than ever”.

We engaged in four months of sampling foods, and gradually the children became comfortable enough to request foods that were important to them and that they wanted their classmates to try. Because of the extended period of time I was able to consider and reflect
on the types of fruits and vegetables I chose to bring. I quickly realized that I needed to expand my understanding of local food to not only be geographical but also cultural. The majority of the children in this study are from Southeast Asian new-immigrant families. Although I grew up in Hawaii where Asian food cultures are prominent, as a white woman, I entered this study with an unconsciously Eurocentric agenda of teaching or at least exposing these children to the geographically local foods of Vancouver. I had unintentionally overlooked the fruits and vegetables these children ate at home. While many children told me they enjoyed tasting the foods I brought early in the study, I believe we crossed a threshold in the research process when the children began requesting foods that were part of and local to their families and cultures. It was at this point that I feel we really began the journey of co-researching and cultural exchange. I am extremely grateful to the two boys, Mangosteen (Grade 5) and Guava (Grade 4) who were the first children to request foods that were not geographically local to Vancouver but were meaningful to their families.

I perceived the children as inhabiting an elevated position in the sharing of foods when I surrendered my comfort zone of radishes and beets, and searched the children’s neighbourhood grocery stores for their requested lychee, mangosteen, guava, and papaya. The children were the experts on these foods and would stand up and demonstrate to the rest of the class how to peel a lychee, how to eat the flesh of a mangosteen, and sprinkle salt on guava.

Several researchers are beginning to emphasize the importance of food cultures (especially in learning environments) and the embodied experiences of tasting, smelling, and eating food. DeLind’s (2005) article, *Of Bodies, Place, and Culture: Re-situating Local Food*, makes a case for the need of all humans to feel connected to place (geographical and
otherwise) but also to be connected to our bodies and food-cultures. DeLind (2005) discusses the “reductionist rationality” (p. 126) that pervades much of the current local food movement and that I believe has influenced most of the research on food in school gardens. Similarly, Weaver-Hightower (2011) notes the reluctance of academics to deem something as “animalistic as eating” worthy of research (p. 16). In response to what DeLind (2005) and Weaver-Hightower (2011) perceive as obstacles in the current local food movement and the educational initiatives embedded within, DeLind (2005) encourages researchers, gardeners, farmers, educators, and eaters of all kinds to foreground the pleasures (rather than obligations) of eating good, local food, while Weaver-Hightower (2011) discusses the importance of including the multidimensionality of food in educational research.

As researchers, I think we frequently discount the importance of food cultures and explicit conversations about these exchanges. In Bringing Good Food to Others: Investigating the Subjects of Alternative Food Practice, Guthman (2008) problematizes the well-intentioned but often ‘proselytizing’ (and sometimes ‘racist’) tendencies of those of us in positions of power trying to educate ‘others’ on the importance of healthy food. Guthman (2008) discusses the disconnect and disappointment of these (largely white) activists and educators who may enter communities that are not their own with the well-intentioned goals of inspiring healthy eating and a love of “putting one’s hands in the soil” (p. 431) only to find a lack of resonance with these communities. I want to be cognizant of my own intentions, hopes, and naivetés as I discuss the conversations and revelations that were made possible through the sharing of food in this study.

Based on the notable excitement and receptivity of these children towards all of the foods that I brought as well as to the edible plants growing in the garden and the fact that the
children chose to write about these experiences in their journals and memory book and request culturally-specific fruits and vegetables, I believe that food played an important role in this research and in these children’s school garden experiences. I believe that in this case study, food acted as connector, provocateur, and translator for the children and myself while cultivating an environment of familiarity that supported the multiple research methods in which we engaged.

In addition to the sharing of food, I found the sensual aspects of smelling and touching plants, soil, and insects to be important to the children. During our ‘Conversations in the Food Circle’ we rubbed and smelled herbs such as basil, lemon balm, and rosemary. Many of the children would inhale these scents with what I perceived as unrestrained delight, rubbing the leaves on their wrists like perfume. For the plant part collage, there were many children for whom the experience of carefully exploring the garden, collecting tulip petals, plum blossoms, and ferns, seemed to bring great pleasure. As I watched the children compose their collages with great care and tenderness, I was surprised that this project seemed to appeal equally to the girls as well as the boys- with the boys exhibiting none of the stereotypical bravado that might be prevalent in a few short years. Spider, (a Grade 4 boy), surprised Dragonfly with his meticulously crafted plant collage of muscari flowers and fern leaflets to depict a full moon shining on blades of grass. Sunflower, (also a Grade 4 boy), asked me if he could bring home the extra petals from his project after it was complete. I asked him if he was going to give them to his mother, but Sunflower said, no-“sometimes I just like to sit on the couch and hold them”.

In March when I brought the children yellow daffodils, I was again surprised when a small group of children (mostly boys) asked if there were any extra flowers at the end of the
day. I watched them tenderly wrap the stems in wet paper towels before leaving with their extra daffodils. And on my last visit, June 5, 2012, I brought the children a red rose from my garden to smell. Several of them asked if they could pluck a petal as the rose was passed around the circle. Each child gently caressed their petal and the rose was eventually reduced to a green bulb with pollen-tipped anthers. Sunflower handed me the petal he had chosen. Jasmine asked if she could have it and I thoughtlessly handed it to her. Sunflower protested, “it was a gift for you!” and Jasmine reluctantly gave it back to me.

The seemingly small moments of the children closely examining seahorse-shaped calendula seeds, smearing daffodil pollen on their cheeks, giggling as earthworms writhed in their palms, mashing red tulip petals into a ‘fake blood’, and inhaling the candy-sweet scent of heliotrope blossoms, happened on a daily basis throughout this study. I interpret and understand the pleasure brought on by these embodied experiences as illustrating my first theme of Sensuality and the Sharing of Food, and as critically important to the children’s developing ecological literacies, and their care for the more-than-human world.
Ecological Identities, Relationships, and Literacies

My second theme of *Ecological Identities, Relationships, and Literacies* comprises my interpretation of the children’s developing understanding of and perspectives on their interconnected relationships with their school garden, Nature and the natural world, and the Earth as an ecological system. Thomashow (1995) defines ecological identities as the ways in which “…we extend our sense of self in relationship to nature” (p. 3). Clayton and Opotow (2003) describe identity as a fluid concept that “is not stable, but is layered, complex, and changing as it is negotiated in social interactions and conflicts” (p. 5). E.O. Wilson’s (1984) theory of *Biophilia* discusses what Wilson considers an innate human affinity with Nature and details our desire to engage with our natural environment (e.g. plants and animals), especially
when faced with stressful situations (Verbeek et al., 2002). Chapra (2005) describes ecological literacies as comprising a holistic understanding of and appreciation for interconnected ecological systems, or the “web of life” (p. xiv). I draw upon all of these definitions to illustrate and support my theme of *Ecological Identities, Relationships, and Literacies*.

Throughout this phenomenologically-inspired research, I attempted to foreground and encourage the curiosity, wonder, and pleasure that are *possible* (but not always inherent) in children’s gardening experiences. Not only as a means to an end (becoming ecologically and food literate) but primarily for the experiences themselves and to invite the children’s perspectives on these experiences. Although this thesis is not explicitly focused on ecological identities, nor ‘biophillic’ tendencies, over the course of this study, there were many instances that I observed, as well as statements and questions from the children that led me to be curious about their sense of ecological (dis)connection and positioning, as well as their ecological literacies (their understandings and knowledge of ecological systems, cycles, and patterns). Hence, through the discursive methods in this study, including informal conversations, journal writing, and focus group interviews, ecological identities became an emergent theme that complemented our focus on ecological literacies.

**Expressing Ecological Identities and Literacies through Journal Prompts**

In this study the two journal prompts that received the most responses were 1) “If I were an insect/animal/plant in the garden I would be _________ because…” and 2) “Draw a picture of Nature, Are you in the picture? Why or why not?” The responses to the first journal prompt were varied, with many children imagining themselves as sunshine, rain, birds, kale, and bees
while others had no interest in being anything other than human. I interpret many of the children’s responses as expressing a desire to embody important aspects of the garden such as the sun, rain or bees in order to ‘help plants grow’ (as many of the children gave this response as their rationale).

Additionally, I interpret several children’s responses as expanding on this perspective by describing their rationale for wanting to be the sun as helping both plants and humans as they include both in their drawings and text. I perceive their explanations for wanting to become these things as diverse but frequently borne of empathy, imagination, and a desire to support plant and human life. On the other hand, Jasmine (a Grade 4 girl) wrote, “I want to be me, a human” and seemed perfectly happy to remain herself within the garden and uncomfortable with the idea of being anything else. Additionally, one child, Strago (a Grade 4 boy), wrote of wanting to become a bird so he could see the “hole city” and seemed to entertain a curious desire to physically become a winged creature for the sole purpose of flying.

The responses to the second journal prompt, (“Draw a picture of Nature. Are you in the picture? Why or why not?”), were also varied but could be divided into main two groups- the children who considered themselves part of Nature and those who did not. Although I presented the journal prompt in this limiting binary, I appreciated that some of the children expanded on my dualistic prompt, contributing complexity and perspective.

Both Acorn (a Grade 5 boy) and Hummingbird (a Grade 5 girl) described humans as being “destroyers” of nature. Hummingbird did include a human in her drawing but this figure is engaged in the violent act of cutting down a tree with a chainsaw. Alongside this image, Hummingbird wrote, “I am not in the picture because I do not think of humans as nature. I find them to be nature killing machines”.
Acorn drew a picture of an apple tree and a dog and wrote “Am I in a picture of nature? No. Because I think humans destroy nature”. However, based on my observations, Acorn and Hummingbird were two of the most gentle and inquisitive children in the garden. I observed, and subsequently recorded in my field notes, that Acorn loved to get dirty, hold caterpillars and follow butterflies; Hummingbird carefully collected flower petals and eagerly studied the emerging seeds she planted. Both children spoke of their mother’s advocacy regarding a care for Nature and also demonstrated an awareness of the effect of their behaviours on their natural environment through composting and recycling in the garden and classroom.

I was surprised by Hummingbird’s and Acorn’s strong statements in their journals, especially when juxtaposed with their gentle and eager engagement with the garden. Because I was not focused on individual children in this study, I was unable to take the time to explore in depth the perspectives of these two children. My lingering questions are: did they see themselves as ‘destroyers of Nature’? Were they being intentionally provocative by using this language? What experiences led them to have these perspectives?

Strago, Sunflower, and Kale (all Grade 4 boys) also do not include humans in their drawings of Nature but, unlike Acorn and Hummingbird, they do not seem to consider humans as destructive. Their reasons for leaving themselves out of the picture of Nature seems to be borne of a love of non-human entities such as ‘trees and plants’; they seem to consider humans as being separate from this botanical world. Strago writes, “I am not in the picture because when I think of nature I think plain nature.” Kale writes, “I am not in the picture because trees and plants are cool.” Sunflower writes, “I am not in the picture because it is beatiful (sic) without me.” I am struck by the honesty of these boy’s words and especially by the haunting simplicity of Sunflower’s statement.
One of the last journal prompts that did not receive as many responses as the two above but provided critical data, was, “What did you learn in the garden this year?” Eleven children wrote and illustrated responses to this prompt, many of them offering rich insight as to their ecological literacies and affinities throughout the study:

- “I learned that bees only sting you if you make it mad.” (Spider, Gr. 4 boy)
- “I learned how to use garden tools and how to plant seeds inside some dirts (sic) and I learned what will seed look like when it germinate.” (Cucumber, Gr. 4 girl)
- “I learned about kale and how kale stems are sweet.” (Acorn, Gr. 5 boy)
- “I learned that there are different fruit that are really good and that you can’t put the seed to deep or to near and I learn that they different way to plant. I learned that plant need a lot of thing like water, air, warm dirt, and more. I learn that there different way to help the plant like compost tea. I learn that if there a lot of bug in your garden it’s good because the bug know it’s good soil.” (Chef Worm, Gr. 5 girl)
- “I learned that I want to be a nature photographer from using the camera to take photos of plants.” (Hummingbird, Gr. 5 girl)
- “This year in the garden I learned about new foods, like kale.” (Killer Bee, Gr. 4 boy)
- “This year I learned that female bees are worker bees.” (Strago, Gr. 4 boy)
- “This year in the garden I learned about planting and digging in the soil with friends and working together in a group.” (Steve, Gr. 5 boy)
- “This year in the garden I learned that trying new foods is important more important than ever.” (Apple Pie Juice, Gr. 5 boy)
- “I learned how to plant seeds.” (Rylan Rain, Gr. 5 boy)
- “This year in the garden I learned that kale is magically delicious.” (Kale, Gr. 4 boy)
The responses to this prompt are diverse. The children mention gardening techniques and terminology (such as ‘germinate’ and ‘compost tea’) and describe an understanding of bees and planting seeds. The children also describe a love of kale, learning to work in groups, and learning to use my camera. I interpret these statements as comprising the children’s diverse affinities for the varied gardening experiences and methods in this study. As well, I interpret their comments as evidence of the potential for school gardens to encourage children to be curious, brave, and creative while supporting their developing ecological literacies.

**Expressing Ecological Identities and Literacies through Focus Groups**

By involving the children in the process of writing interview questions and choosing pseudonyms, I encountered unexpected data regarding the children’s ecological relationships and perspectives. Although I am unsure how many of the children independently chose pseudonyms related to Nature, I do find it noteworthy that 24 of the 28 children selected or invented pseudonyms with ties to the garden. Additionally, I interpret the following children’s interview questions as encompassing a curiosity or desire to imagine and possibly embody the more-than-human experiences of plants:

- Mangosteen (Grade 5 boy): “What would you do if you were a fruit and being eaten?”
- Guava (Grade 4 boy): “If you were a plant what would you be?”
- Rylan Rain (Grade 5 boy): “If you were a plant how would you like to be treated?”
- Hummingbird (Grade 5 girl): “If you were a plant what would you be?”
- Hibiscus Flower (Grade 5 girl): “If you were a plant, would you be edible or not edible and why?”
- Strago (Grade 4 boy): “If you were a plant what would you be and why?”
• Spider (Grade 4 boy): “What will you do if someone is picking you?”
• Nichelle (Grade 5 girl): “If you were a plant, what kind of soil would you want to grow in?”

In addition to, and in response to, these interview questions, all three focus groups discussed the relationships between humans and plants, as well as our responsibility for and interdependence with the more-than-human world. Following are excerpts from each focus group highlighting these conversations.

➢ Focus Group #1:
- At the beginning of this interview Rylan Rain (Gr. 5 boy) squealed “I’m a worm! Help me get to the grass!” and wriggled across the asphalt to the edge of the grass. Spider (Gr. 4 boy) was excited by this and joined in, “I’m a worm! I’m frozen!” But Rylan Rain was quickly distracted by a dead bee he had found. He gently held the bee by one wing and handed it to Miss Sunshine (a Gr. 4 girl) who screamed.
- I asked the children about their journal entry regarding whether they drew themselves as part of Nature. Hibiscus Flower said ‘no’, and explained: “Because I just don’t feel ‘green’ and ‘natural’ and stuff.” I asked her if she would like to feel ‘green and natural’. Hibiscus Flower said “No.”
- When I asked the children if they thought gardens were important, all the children said ‘yes’. However, when I asked this group if they thought humans were in turn important to the garden, there were mixed feelings:
  Acorn: “Sometimes.”
  Djamila: “Sometimes?”
Miss Sunshine: “Yeah we are.”

Acorn: “Sometimes it grows by itself.”

Miss Sunshine: “Yeah- because we breathe out carbon dioxide which *we* don’t like so the plants like it so *they* breathe it in.”

- During this conversation Miss Sunshine and Rylan Rain both put forth the idea that everything is connected and that everything serves a purpose:

Miss Sunshine: “Scientists said… everything’s connected. It’s supposed to mean all the planets were broken off from the sun or the moon- or the moon broke off from the earth.

That’s what they say.”

Rylan Rain: “So, let’s say like we *hate* raccoons, um… you know how we hate them? Sometimes… because like they eat our trash… but like other animals might eat *them*, but they’re not helpful to *us*- they’re just helpful to the other animals… What I’m trying to say is that everything is made for a *reason.*”

➤ **Focus Group #2:**

- In this group Nichelle (Gr. 5 girl) discussed the oxygen cycle and the interdependence of plants and animals: “…the plant leaves at the bottom take in carbon dioxide and at the top they give out oxygen, right? And in the city we have lots of carbon dioxide and if no one’s gonna (sic) clean the air, the plants will do it. And plants need carbon dioxide to breathe and we need air- so we help each other!”

- This conversation became more complex as Jasmine, Violet, Mangosteen, and Guava added their thoughts:

Jasmine: “Yes- because without us… because we’re the ones who make the gardens.”

Violet: “Yeah- because we’re the ones who plant the seeds!”
Mangosteen: “No!”

Guava: “Because the earth could just make plants without humans- the wind.”

This debate continued as the children agreed with and contested each other’s thoughts about whether gardens need human input. Many of the children seemed to want to feel important to the garden- to know that they were needed by the plants, but several of them resolutely believed that the plants were self-sufficient.

- **Focus Group #3:**

I asked this focus group the same question, “Are humans important to gardens?” and Hummingbird provided a lengthy response:

Hummingbird: “… like before when any human was born the plants were growing by themselves… but because of what humans made- like all the buildings… they need help \{giggle\} from people to… grow. And like everything- if you do make something… like clothes and buildings… if you go back to when they first start building it- it all comes from plants, because there’s nothing else that you can build it from. So, if it’s built out of plastic then you can think back at plastic and then, there- it’s somehow all related to plants.”

The children’s voices presented above highlight my second theme of *Ecological Identities, Relationships, and Literacies.* As they discuss their garden experiences, the children reflect upon their relationships with Nature and make connections beyond their school garden to the human and “more-than-human world” (Abram, 1996). In the children’s responses, I interpret rich contemplation of these children’s relationships with and their perspectives on Nature. I
appreciate the multi-dimensionality of their responses that complicate my expectations of children’s feelings towards Nature. A singular summary of these children’s perspectives is not possible. Instead, I understand their responses to be indicative of their interest in the topic of ecological identities and literacies that comprise more than a universal desire to feel connected to Nature.

Figure 71 Photo by Hummingbird (Gr. 5 student)
Participation through Multiple Discursive Methods

My third theme of Participation through Multiple Discursive Methods is illustrated through the multi-modal ways the children interpreted and expressed their garden experiences. I will now highlight the individual voices of four children, Hummingbird, Killer Bee, Guava, and Pauline, as they articulate their diverse garden experiences and represent the broad continuum of perspectives, personalities, and interests of the 28 children in this class.

Hummingbird (a Grade 5 girl) actively participated in all of the methods in this study including photography, focus groups, journals, informal conversations, hands-on gardening and art projects. She was enthusiastic, verbal, creative, and critical- assuming a leadership role in many instances. During her focus group, Hummingbird told me that she planned on becoming a “nature photographer” and in the memory book she thanked me for “teaching me how wonderful gardening is… plus showing me that being a nature photographer is awesome!” In her journal Hummingbird wrote: “I learned that I want to be a nature photographer from using the camera to take photos of plants.” Hummingbird was very artistic, paid close attention to details, and seemed to have had experience with a professional camera. She was critical of her photos, enjoyed looking at other student’s photos, and was proud of the quality of some of her photographs. In my view, Hummingbird seemed to have discovered a medium through which she was able to express herself and feel successful.

Killer Bee (a Grade 4 boy) also seemed to enjoy photography evidenced by the way he carefully composed his shots as he bent low to the ground. Killer Bee also engaged with the journal prompts through text and detailed drawings (figure 72). However, Killer Bee was reserved and quiet during our group conversations; he declined to be interviewed and when I asked him to select a photograph to be printed, he did so silently. When I asked him why he
chose that photograph he quickly stood up from his chair, said, “I’m not good at those questions”, and walked away. I interpret Killer Bee’s response to be reflective of his quiet, shy personality. In my observations, Killer Bee preferred to communicate through written, illustrative, and photographic mediums and had difficulty expressing himself verbally. Possibly because of this, I did not develop as much of a relationship with Killer Bee as with some of the more outgoing children; however, I do believe that he enjoyed having the option to choose his research methods and I appreciate his silent contributions.

Figure 72 Page from Killer Bee's journal

“This year in the garden I learned about new foods like kale.”
As one of his journal entries, Guava (a Grade 4 boy) was the only student to complete a Family Food Interview with his mother. He did not complete all of the other journal prompts but did draw a picture of Nature (depicting a forest with lightning, omitting human figures and with no text to explain his rationale for this omission). Guava seemed to enjoy taking photographs of plants and people and selecting his photo for printing. In the memory book Guava thanked me for “introducing us to new types of foods”, and in the garden he was adventurous and physically engaged in tasting plants and hands-on garden work. He was very vocal during our group conversations and pivotal in my decision to bring foods that were local and familiar to these children’s home food-cultures; he requested I bring guava several times and explained to the class that, at home, his mother sprinkled salt on guava.

My conversation with Guava during his focus group where he challenged me on why I had not given him the choice to be interviewed individually, and interrogated me as to what this research was ‘for’, was uncomfortable and illuminating. I interpret Guava’s genuinely critical questioning of my research agenda as indicative of his self-confidence and the discursive relationship that developed between us over the study’s extended period of time. I do not think Guava would have raised the issue of his feeling a lack of power in the research process had we not spent so much time together and cultivated an open forum where the children felt they could voice their concerns. Guava forced me to consider the limitations of encouraging a ‘co-researcher’ relationship with children and the inherent power dynamics within this process.

Pauline (a Grade 4 girl) joined the class midway through the year and did not speak directly to me until the last week of school when she told me that her potatoes at home were growing. She declined to be interviewed, completed only two of the five journal prompts, remained nearly silent in all of our class conversations, and chose not to take any photographs.
Pauline seemed to enjoy the hands-on garden work and art projects, as she repeatedly collected flower petals for the pressed plants collage and tasted all of the foods in class. In the memory book Pauline wrote, “Thank you for being so nice to us and thank you for the healthy snacks you brought in”. Similar to Killer Bee, Pauline was exceptionally quiet and reserved, compared to many of the other children. Pauline joined the class halfway through the year and seemed to be building her confidence with speaking and writing in English (her family recently moved from the Philippines). I did not have an opportunity to get to know Pauline well, but as with Killer Bee, I want to acknowledge her quietly enthusiastic presence, quick smile, and openness to this study.

These four children’s voices portray my third theme Participation through Multiple Discursive Methods as collectively they represent the diversity of personalities, interests, skills, and affinities of the 28 children in Dragonfly’s class. It is difficult to fully discern the multiple influences (cultural, socioeconomic, peer influence, home dynamics, etc.) that might inform the children’s degree of participation in this study. Throughout this study, my goal was to honour the individuality of these children by offering multiple research methods (journaling through text and drawings, focus group interviews, photography, informal group conversations, and hands-on garden work and art projects) and allowing the children to select the methods they were most comfortable with and interested in. I trusted the children with my professional camera, and they in turn took great care with this tool. I involved the children in writing their own interview questions and pseudonyms; they responded by offering open-ended, sophisticated questions and creative pseudonyms for this study. Not all children engaged with every method in this study, but every child participated in some way.
Denzin and Lincoln’s (2008) recommendation to become a ‘bricoleur’, or quiltmaker, in the synthesis process complements my choice to employ the Mosaic Approach (Clark and Moss, 2001) of incorporating multiple research methods in the data collection stage of this study. The children’s multidimensional experiences and perspectives in this study would, I think, have been severely constrained had I required all students to participate in the same limited methods. My intention was to honour the children’s diverse modes of engagement and perspectives of their school garden experiences by offering the children a choice of research methods. Based on the diversity and richness of the data and the fact that all 28 children chose to participate in this study in some way, I consider choice of methods and discourse to be central in encouraging children to express their school garden perspectives.

**Presenting a Synthesis to the Children**

Although the children did not actively participate in the final synthesis of this study (due to time constraints), on June 1, 2012 I presented them with my overarching observations and asked for feedback. Below is the analysis as I read it to the children on that day:

06.01.12

- Most of you enjoy gardening.
- You have learned a lot of things about the ways that plants grow and also about being open to new experiences and new foods.
- Some of you enjoy imagining the ways that plants feel and also the ways that humans and plants interact (especially in the ways we exchange oxygen and carbon dioxide).
- Many of you have said that gardens are important, especially in city situations because they give us food and because we need clean air.
• Several of you have varied perspectives on whether humans are important to gardens, but for the most part, you agree that we do help sometimes - with watering and planting, but we also destroy gardens and pick the plants to eat.

• Your photographs have shown me that you think plants and flowers are beautiful and interesting, and that you also enjoy taking photographs of your friends and classmates in the garden.

• I look forward to reading your garden journals and seeing the artwork and other thoughts that have come out of the writing. I am very appreciative of your work and openness in working with me.

• You are helping me tell a story about your experiences, thoughts & ideas. The story I write about your classroom may be read by other teachers, researchers, or principals who may want to know more about how to teach kids in gardens and know what kinds of things you are interested in and how to give these learning opportunities to other kids.

After reading the children this list of my observations and interpretations, I asked them if I had omitted or misrepresented anything, and if they had any questions. The children were quiet and appeared thoughtful. When I asked if there was anything else I should tell people about this class, Hummingbird proudly raised her hand and said, “that we’re great kids!”

Returning to ‘Voice’: Whose story is this?

Like a small pebble turned over in my mouth, I continue to consider the complexity and challenges of ‘voice’ and participation in research:

- How do we make space for multiple narratives while creating a final presentation that is legible and comprehensive?
- In the pursuit of clarity, how do we ensure that as editors and collagists we are not reconfiguring the voices of others?
- What is silenced/erased in the process of writing our stories and representing others?
For me, these questions continue to hover at the periphery of this writing and my understandings of research and education. As an effort towards fostering an “intelligent and inclusive conversation” (Marker, 2009, p.32), I am not seeking to provide answers to these questions but rather to use these overarching queries as guides throughout the inquiry, synthesis, and writing process. Mazzei (2009) encourages researchers to take risks, be accountable, and remain open to the reflective process of synthesis as we engage in discourse-based research. Mazzei (2007) describes this reflexive process of “listening to ourselves listening” (p. 91) as one that honours silence as well as voice and acknowledges the impossibility (and even danger) of certainty in the representation of others voices. I do not want to privilege the bold voices of Hummingbird and Guava over the more subdued voices of Pauline or Killer Bee or any other children. As I ‘listen to myself listening’ I am attentive to the diversity and cadence in the children’s voices expressed through writings, drawings, detailed plant collages, focus group interviews, photography, and comments and facial expressions as we tasted plates of vegetables, harvested kale, and held caterpillars in the garden. I wish to be transparent about having the power to select which data I include and interpret and the ways I present this data. As I write this chapter, I need to acknowledge that in the future, I would approach the synthesis differently. I would somehow incorporate the children in the reflection and sorting through of the data rather than write the culminating chapters of a collaborative study entirely independently.
In Chapter Five I presented and discussed my three themes of *Sensuality and the Sharing Food; Ecological Identities, Relationships, and Literacies; and Participation through Multiple Discursive Methods*. The children’s collective voices articulated their pleasure and appreciation for the embodied experience of touching, smelling, and tasting plants, their understanding of the interconnected relationships within and beyond their school garden; and the multi-modal ways they interpreted and expressed their garden experiences. In my final chapter, ‘*Planting Seeds/Beginning Again*: Emergent Learning and Insights’, I will reflect on these themes in response to my guiding research questions outlined in Chapter One. I will also discuss my personal learning
experiences and reflections that emerged over the course of this study, and make suggestions for future studies and teaching practices in this field.
CHAPTER SIX: PLANTING SEEDS/ BEGINNING AGAIN

Emergent Learning and Insights

For me, the process of learning about and with children in their school garden has evolved in reflexive, circuitous, awkward, and elegant ways. As a co-participant in this study, my experiences have been complex, recursive, and nonlinear. This final chapter adopts the cyclical metaphor of ‘Planting Seeds/ Beginning Again’ as I revisit my guiding research questions in relationship to the themes discussed in Chapter Five; reflect on the research process.
and my learning experiences throughout this study; make suggestions for future studies; and offer my final thoughts for the bearing of this study on the practice of teaching and conducting research with children. As stated in Chapter Five, I am presenting my interpretations and suggestions as one of many possible understandings of this study.

Responding to My Research Questions

My problem statement in Chapter One was informed by my literature review in Chapter Two as well as my personal experiences and observations while teaching children in gardens:

- Due to a lack of resources and limited public understanding of the educational role of school gardens and their potential to support ecological literacy, as well as a deficiency in holistic research documenting related experiences, school gardens remain an often misunderstood and seemingly unattainable luxury for many schools.

The research questions presented in Chapter One guided this study in response to my problem statement while making space for an emergent research design. The research questions are:

- What are the experiences and perspectives of middle-elementary-aged children participating in school garden discourses in a British Columbia School?
- How might school garden discourses support children’s ecological literacy?
Distilling Themes into Threads

In the following sections I will respond to these research questions and also include personal reflections and learning experiences as a co-participant in this study. In Chapter Four I provided an in-depth account of the children’s experiences and perspectives in this study and in Chapter Five I synthesized what I ‘heard’ and ‘observed’ into three themes: Sensuality and the Sharing of Food; Ecological Identities, Relationships, and Literacies; and Participation through Multiple Discursive Methods. To answer my research questions, I revisited these three themes and re-envisioned them as comprising four interconnected threads of the children’s experiences and perspectives as I understand them. I have selected these threads to describe the types of experiences and perspectives that emerged through the research process. These threads include: Making Connections; Being Brave and Curious; Finding Pleasure in Embodied Experiences; and Exploring Empathy. I see these threads as representative of the emergences of this study and as components of my larger themes described above. For example, I see my first theme, Sensuality and the Sharing of Food, as facilitating and comprising the children’s experiences and perspectives in my first three threads (Making Connections; Being Brave and Curious; and Finding Pleasure in Embodied Experiences). Not all of the children’s experiences and perspectives neatly fit into these threads. Rather, these threads provide an overarching understanding of the emergences of this study with an appreciation for the many divergences that cannot be categorized.

Question 1: What are the experiences and perspectives of middle-elementary-aged children participating in school garden discourses in a British Columbia School?
In response to this first research question, I will provide examples of the children’s experiences and perspectives that illustrate the threads described above.

- **Making Connections:**
  - When I brought *nori* (Japanese seaweed) and *mochi* (a Japanese dessert made with sweet rice and coconut milk) to share with the children we all realized that although my Hawaiian recipe may have differed from the Japanese students’, we shared a common language of Asian-inspired foods. This was the first time I brought food to taste, and I quickly observed the ways that food could facilitate cultural conversations and social connections.
  - When our tiny bok choi plants in the garden began to bloom, several of the children recognized the same yellow, four-petaled, flowers of the other plants in the *Brassicaceae* plant family, and asked why our bok choi was turning into kale. Although they were mistaken, the children were making connections among plant families by recognizing common plant-part characteristics.
  - At the end of the year several of the children also wrote that they learned how to work in groups during the garden work where they acquired social skills and an appreciation for diverse opinions.

- **Being Brave and Curious:**
  - Food figured extensively in this category. When I asked the children what my reasoning might be for bringing food each visit, Violet offered, “so we can try new things?” Apple Pie Juice was one of the few students who did not enjoy bok choi, and he politely spit it out. However, he proudly told me, “I tried it, Djamila”. In his
journal Apple Pie Juice wrote, “This year in the garden I learned that trying new foods is important, more important than ever”.

- Many of the boys were extremely curious about the effects of eating certain foods, notably beets (a group of boys devoured two plates of these fuschia roots to test out how quickly the colour would pass through them).

- Not all of the children enjoyed getting dirty or engaging with the hands-on garden work; many were at very different comfort levels in this area. Jasmine was the one student, who, although I did not see her touch soil all year, who refused to sit on the grass, was intrigued by potato planting, and proudly used her feet to roll the tubers into the holes I dug.

• Finding Pleasure in Embodied Experiences:

- Although Jasmine was not one, there were many children such as Sunshine, who thoroughly enjoyed rubbing sage and lemon balm between muddy fingers and inhaling the earthy scent.

- Sunflower, who chose not to photograph or complete a scavenger hunt, loved digging small holes in the garden and kneeling in the soil as he carefully planted peas and unearthed potatoes.

- Many children expressed pleasure in: trying new foods, describing their flavours and textures; holding worms and caterpillars; digging in the soil; smelling flowers, and smearing pollen on their cheeks. (I believe these pleasurable, embodied experiences also supported their developing ecological literacies that I will expand upon in response to my second research question).

• Exploring Empathy:
- Whether it was providing food for caterpillars or ushering the tiny creatures safely across the sidewalk, many children appeared intent on helping the plants, animals, and insects in the garden as well as imagining the existence and feelings of the more-than-human organisms they encountered.

- These feelings of empathy are evidenced by their garden-related pseudonyms and their interview questions such as “If you were a plant, how would you want to be treated?”

*Figure 75 My photo of Sunflower (Gr. 4 boy) creating a plant collage*
In summary, based on what I observed and heard, many children in this study: made connections (ecological, cultural, social, familial); were brave, curious, and sometimes hesitant about getting dirty, trying new foods, holding worms and insects, expressing their opinions, and imagining the experiences of more-than-human organisms; expressed sensual pleasure in the embodied experiences of touching, smelling, and tasting plants, getting dirty, planting seeds, holding caterpillars, and observing flowers; and, seemed to exhibit feelings of empathy for more-than-human organisms such as caterpillars, worms, butterflies, and flowers. The specific examples described above are embedded within my three larger themes encompassing sensual experiences, the importance of providing the children with a choice of methods, and developing ecological literacies and relationships through both hands-on and discursive engagement.

**Question 2:** How might school garden discourses support children’s ecological literacy?

In response to this question, I provide several examples of the children’s developing ecological literacies as expressed through our discursive methods. I see these examples as primarily illustrating two of my threads: Making Connections (ecological), and Exploring Empathy—both of these threads are embedded within my second theme Ecological Literacies, Relationships, and Identities. At the end of this section I also include a discussion on the ways in which discourse might continue to support children’s developing ecological literacies.

- While completing her scavenger hunt and trying to find an “animal enjoying Spring”, Violet exclaimed, “We are animals!” to which Miss Sunshine agreed, “Yeah, we are mammals”, and Jasmine disagreed, “I didn’t come from monkeys”. While these girls
expressed diverse evolutionary perspectives, this example illustrates how a simple scavenger hunt and conversation on the schoolyard can support ecological literacies.

- During the making of the plant part collages, I discovered Lime sitting in the corner of the room, bashing together the centers of daffodil and tulip flowers, exclaiming, “I’m pollinating!” This example illustrates that Lime understood the botanical organs of a flower and the basic principles of pollination.

- In the journal work, many of the children articulated their ecological literacies by describing the appropriate ways to plant seeds, the importance of compost tea (an organic fertilizer made by cold-brewing finished compost), and the dynamics of honeybee interactions.

- In the process of selecting photographs to be printed, Rylan Rain chose one of bean seeds that had recently germinated. He chose this photograph because it showed “…how the things grow. And then what they end up being in the future”. I interpret his comment as understanding and having an appreciation for the life processes of plants.

- In several instances the children discussed ecology and mortality as well as the explicit topic of death. Throughout this process they negotiated and navigated diverse beliefs and attitudes towards the environment and our roles as participants in this ecological web. One of the most illustrative examples occurred during the first focus group interview. Rylan Rain described how humans “hate raccoons because they eat our garbage” but noted that raccoons might be important to other animals in the food chain. Miss Sunshine quickly added, “Eagles can eat them!” Suddenly the group was problematizing anthropocentrism (attributing human characteristics to the
non-human) while excitedly discussing how everything is connected and that the point of life is to feel a purpose, to know you are important to something, even if only as prey.

- The subject of human’s importance to and interrelatedness with Nature surfaced repeatedly during our conversations. While many children felt that humans were important to (and helped) the garden because we planted seeds and provided water, several children (especially Hummingbird and Acorn) felt that gardens, and possibly Nature, were self-sufficient, and that humans did more damage than good.

- During her focus-group interview, Hummingbird expressed a sophisticated understanding of the dimension of time and the modern context of our lives wherein humans have made ourselves necessary to the survival of plants simply due to the ways we have constructed (and possibly depleted) our environment. Hummingbird also described everything as being “somehow related to plants” as she traced back and listed the connections of our modern comforts with the natural world.

- In their journal work and during the focus-group interviews, many of the children described their understandings of cycles, systems, mortality, death and decomposition, as well as our human influence and impact on these systems.

In summary, I believe the discursive methods within this study offered multiple mediums (written, verbal, and illustrative) through which the children expressed their school garden perspectives and ecological literacies. As a central discursive method, the focus groups, especially, de-centered my researcher role and cultivated a space for the children to respond to the interview questions we collaboratively wrote while discussing related themes that were of
importance to them. In this way, I believe the children were invested in the conversation and influenced one another’s thinking.

My field notes revealed that hands-on engagement with the garden was a valuable method to initiate cursory ecological literacy. The discursive methods provided an opportunity for the children to articulate, discuss, and reflect on these embodied experiences, which enabled them to clarify and refine their perspectives and understandings. Based on my experiences and observations in this study, hands-on engagement with the garden is best accompanied by school garden discourses wherein the children are involved in decision-making and consequently know that their understandings will not be judged or evaluated, nor will the children themselves be compared to one another. By offering multiple discursive methods and reiterating that there was no right or wrong answer, I believe the children were encouraged to express and expand their ecological literacies while they maintained an appreciation for the diverse perspectives of their classmates.

**Emergent Learning: The Importance of Time, Discourse, Choice, and Food**

School gardens are complex learning spaces; they are ever-changing, contextual, and interactive. This study’s findings revealed the important need for qualitative school garden research to reflect these aspects of the garden by adopting long-term, place-based, and multidisciplinary methods including unstructured garden exploration, photography, journaling, and focus group interviews, while giving children a choice of methods in which to engage. My choice of research methodology and methods supports Thorp’s (2006) view on the challenges and potential disservice of quantifying garden-based-learning. My experiences also confirm
Gaylie’s (2011) findings on the difficulty of conducting comprehensive research on school gardens. Gaylie (2011) also acknowledges that while school gardens are not a new initiative, the field of school garden research is an emerging field and claims that “holistic approaches to garden research are now necessary in order to truly understand the value and complexity of such spaces” (p. 13).

In the following sections I will discuss my emergent learning in this study (that is, the unexpected learning experiences that became important in this research process) in the following areas: Time, Discourse, Choice, and Food. I identified these areas of learning as emerging from two of my overarching themes introduced in Chapter Five: Sensuality and the Sharing of Food, and Participation through Multiple Discursive Methods. I found that an extended period of time was needed to observe the literal growth of the garden while facilitating hands-on engagement as well as a choice of discursive methods. I see the topic of food as connected to all of my themes and threads. I believe our sharing of something to eat encouraged participation in all other methods, supported critical conversations, and facilitated connections (ecological, familial, and social).
When I began this study, I was uncertain as to when or how it would end. I hoped Dragonfly would be open to having me in his classroom until the end of the year. I hoped something would grow in our garden. I had lofty dreams of the children producing a bountiful harvest and creating a multicultural sharing of food with their families and community. And then in March there was a teachers’ job action, followed by a two-week spring break, and finally weeks and weeks of cold rain. At the end of the school year in June, there were just a few tiny specimens of lettuce, bok choi, peas, potatoes, and overwintered kale in the garden. The children would squat and scrutinize the hard soil to
determine if anything was growing. And despite my adult-interpreted disappointment that we were unable to achieve all we set out to do (including my hope to fully involve the children in this synthesis), the children’s conversations and behaviour indicated that they were pleased, engaged, curious, and proud of our efforts. As documented in my field notes, the children showed how they treasured plants as they caressed the purple clematis blooms climbing the fence. They enjoyed rubbing and smelling the lemon balm and sage leaves. They pointed out the tiny bok choi they planted and asked why it was ‘turning into kale’ (they recognized the same four-petaled flowers of the *Brassicaceae* plant family on both plants). They observed and noted each emerging pea sprout and caterpillar with excitement.

In my experience both prior to and during this study, I find that the rhythms of a garden are dependent upon many variables: the air and soil temperature; the health of nearby ecosystems of insects and animals; the quality of seeds and soil; and the amount of rain and sun. Also, the knowledge and dedication of the gardener is as influential as the whims of the plants themselves. As many organic gardeners will attest, a garden cannot be rushed. One cannot force a seed to grow nor hasten the ripening of a tomato. And then suddenly, in what feels like overnight, a gardener walks into her garden to discover zucchinis as big as her thigh, red tomatoes heavy with juice, and once-flourishing kale devoured and decimated by slugs and aphids. In this process there is wonder, frustration, curiosity, and reward. And as any gardener knows, *this* garden, *this* year, cannot be replicated. Next year there will be an entirely different garden, even if the human input is exactly the same.

Similar to the slow process of watching the garden grow, developing a trusting relationship with the children also took time. Based on an initial conversation with the
children where I detected a degree of hesitation and anxiety about being interviewed, I realized that due to the nature of this study, it was inappropriate for me to conduct interviews before I had a sense of who these children were. Hence, I wanted the children to help me write the interview questions, to feel invested in the research process, to consider themselves co-researchers. And for me, I wanted to feel like a fellow study participant as well as a participant researcher. This took time. And in the end, the process often felt rushed, unfinished, and imperfect but also deeply satisfying, intentional, and necessary. Time spent in the garden listening, working, conversing, and eating together was an essential part of the children’s experiences.

By spending seven months with these children, I hope they knew that they were important to me and that I valued their voices and perspectives. Although the research process was somewhat constrained by the school calendar, my obligations at the university, and the literal growth (or lack thereof) of the garden, I cannot stress how important it was to have an extended period of time for this study.

I learned that, just like gardening, researching with children is a practice in patience, surrendering of control, and paying close attention to details. Thorp (2006) writes that in researching with children it is not just a matter of asking for their stories but rather of learning to “be with stories” (p. 120). Stories, perspectives, and insights unfold on their own time and terms and cannot be forced or rushed. Hence long-term engagement with child participants is especially important and necessary when conducting research on school gardens.
Discourse and Choice of Methods

The extended period of time and the sharing of food during this study encouraged a climate of trust and openness that invited dialogue, reflection, and cultural exchange. Most of the children seemed to thoroughly enjoy the discursive nature of this study. They agreed to write interview questions, take photographs, and create their own pseudonyms. In these ways the children were included in the research by honouring their diverse contributions through their choice of methods. Based on the multiple emergences of this study, I believe that by involving the entire class and promoting various modes of engagement over a sustained period of time (seven months), the children were able to learn from each other and participate in meaningful ways. The discursive methods in this study also encouraged my personal reflections and learning experiences as a co-participant in this study.

Food as a Connector and Provocateur

The discursive methods in this study also enabled me, as the researcher, to reflect on and consider my involvement with the children and the evolving research design, including our weekly practice of sharing food. While it was important to me to include food in this study, I became aware of my myopic perspectives on local food when the children began requesting foods representing their home food-cultures (namely tropical fruits that did not grow in Vancouver) that I had previously overlooked. Although I intended to cultivate a collaborative and participatory research process, in the beginning of this study I unconsciously perpetuated a didactic representation of ‘local’ food by not asking the children what foods were important to them. As a researcher working with children representing cultures different from my own (the
majority of these children were first-generation Southeast Asian), I realized I was perpetuating my own Eurocentric food value system by only bringing familiar foods which I enjoyed. I am grateful to the children who asked for guava, lychee, jackfruit, and mangosteen. Their requests required me to explore their neighbourhood grocery stores and expand my understanding of local food to be cultural as well as geographical.

Although food was initially not a central theme in this study, I believe food acted as a cultural connector and provocateur that initiated rich discussion while supporting all of the study’s methods. The school garden research that currently exists on the subject of food (Morris et al., 2000 and 2002; Morris et al., 2001; Graham et al., 2005) remains largely clinical as the findings focus primarily on children’s nutritional intake and eating behaviours. Based on my experiences conducting this study, I encourage all school garden researchers and educators to include food in their work, even in very small amounts, and even when it is not the primary subject being examined. I would also urge researchers to explore the sensual and cultural aspects of food while being conscious of individual food cultures and the potential for implicit or explicit disenfranchisement of multicultural food exchange.

Honouring Multiple Comfort Levels

As a white, female educator for whom gardening and time spent in Nature are both a pleasure and of value, I was surprised by the few children in this study who refused to get dirty or sit on the grass, and those who explained to me that they were afraid of the insects and animals they might encounter in the garden. Jasmine (a Grade 4 girl) was the one student who, even by the end of the year, still preferred to stand rather than sit on the grass, and as far as I
observed, never touched the soil. Jasmine and Strawgrin, both Grade 4 girls, asked if they could do scavenger hunts every day, as they wanted to avoid getting their hands dirty. One student, Hibiscus Flower (a Grade 5 girl) explained why she did not include herself in her drawing of Nature as she did not feel “green and natural”. When I asked her if she wanted to feel ‘green and natural’, she said “no”. At the same time, there were many children, such as Sunflower (a Grade 4 boy) and Sunshine (a Grade 4 girl) representing the other end of the continuum who loved to get dirty, rub and smell herbs, and hold caterpillars and earthworms. Several of these children had no interest in taking photographs or completing scavenger hunts, instead preferring the embodied, and frequently messy, process of hands-on garden work.

By observing these diverse preferences and comfort levels within the garden, I learned that it is important to honour the children exactly as they are, without expecting them to all enjoy the same activities. My data illustrate the importance of providing hands-on and messy gardening tasks as well as other activities (such as photography and scavenger hunts) that invite all children to participate in significant ways. I learned that it is problematic to expect all children to want to ‘get their hands in the dirt’ (Guthman, 2008) and that there are many ways for children to connect to the garden.

As I examine and reflect on the children’s school garden perspectives and experiences in this study, I am wary of privileging the children who expressed the most enthusiasm for and comfort with the school garden. I want to acknowledge that although I entered this study with the romantic expectation that school garden experiences might help some children overcome their ‘ecophobia’ (Sobel, 1996) or fear of the natural environment, I am now uncomfortable with the formulaic expectation that once children feel connected to Nature, they will automatically become environmental stewards (Sobel, 1996; Thomashaw, 1995). This may be true for some
children and for many of the children in this study, but I consider it problematic to discount the complexity of the children’s perspectives in this study and to see ‘ecophobia’ as a general malady for which there is one solution: time spent in Nature. Based on my experiences with these children, I want to honour their diverse levels of comfort and engagement with the school garden without striving towards environmentalist assimilation and the prescriptive expectation that all children will love gardening and ‘getting their hands in the dirt’. In my view, this cannot and should not be forced or expected.

The children in this study have complicated my expectations that all children will eventually love gardening and that all children enjoy getting dirty, playing outside, and engaging in the same research methods. Greene and Hill (2005) remind us that there is no generic child, and that children experience their worlds in an “individual and idiosyncratic manner and that their worlds are themselves all different” (p. 3). By offering multiple methods in this study and not expecting all of the children to engage with the same methods, I was able to garner a complex range of perspectives from the children that I think would have otherwise been artificial.

In my view, the emergences of this study support as well as complicate existing theories that time spent in Nature will inherently connect children to their natural environment and produce environmental stewards (Carson, 1956; Louv, 2005; Sobel, 1996; Thomashow, 1995); I believe this is possible but not unequivocal. In this study, I witnessed some children’s transformative gardening experiences, leading me to consider school gardens as having the potential to connect children with Nature, to develop empathy for the more-than-human world that surrounds us, and to support a love for and understanding of ecological systems. I also witnessed several children who, even after a year spent in the school garden while engaging in
school garden discourses, said they did not feel connected to Nature and did not express ecological literacies. I want to be inclusive of and honour the diversity of these perspectives while bringing attention to the implicit homogenization that I believe underlies much of Environmental Education.

Closing Thoughts: Continuing the Conversation…

In my view, school garden discourses and reflective pedagogies support ecological literacies by creating an open forum for children to share and test ideas, learn from each other, and cultivate critical thinking. As a qualitative contribution to the field of school garden research, I found that by combining multiple progressive, sociological perspectives such as the New Sociology of Childhood (Christensen & Prout, 2005), The Mosaic Approach (Clark and Moss, 2001), and the Reggio Emilia teaching philosophies (Edwards, Gandini, & Forman, 1995), phenomenologically-inspired case-studies (Danaher & Briod, 2005; Jardine, 1998; Merriam, 1988, 1998; Stake, 1995; Van Manen, 1990; Yin, 2003) such as this can provide an enriched understanding of children’s school garden experiences and perspectives while supporting their developing ecological literacies.

I believe that every school should have a garden that reflects the context of the school community (cultural, geographic, and socioeconomic). It may be naive, and possibly dangerous to hold fast to generic and romantic expectations of how these gardens will be engaged with and received. By making space for diverse school garden perspectives and experiences to flourish, I feel we can support and embrace the educational possibilities of these unique learning spaces.
As an educator, I continue to be inspired by the pedagogical philosophies of the Reggio Emilia Teaching Philosophy (Edwards et al., 1995) wherein long-term project work is inspired by the children’s interests and contributions, with discursive observation and documentation as central educational practices. To me, these pedagogies are especially important to garden-based-learning and to school garden research because of the complex and interactive nature of these learning spaces. As well, I consider these pedagogies vital to all teaching practices that endeavor to support children’s holistic educational experiences.

As I write and re-write the final paragraphs of this thesis I want to echo Dragonfly’s words: “it is such a privilege to work with kids. Anyone who doesn’t understand that, shouldn’t be a teacher.” I am grateful to the children in this study who challenged me and expanded my thinking on the possibilities for teaching and collaborative research with children. Their creative and honest voices continue to inform and inspire my current teaching practices as an elementary food and garden educator in Portland, Oregon. I look forward to sharing this thesis with the children at Kale Blossom Elementary School, showing them their photography throughout this paper, and continuing the conversation…
Figure 77 Photograph by Spider (Gr. 4 student)
References


