Cultivating a Caring, Environmental Self: Using the Figured World Concept to Explore Children's Environmental Identity Production in a Public School Garden Space

Megan Jane Sulsberger

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Brenda R. Brand, Committee Co-Chair
George E. Glasson, Committee Co-Chair
James W. Garrison
Victoria R. Fu

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ABSTRACT

This ethnographic case study investigates the diverse means and processes by which environmental identities were produced by five first grade students as they participated in an emergent, public school garden space. The children's histories, choices, personal and social experiences, expressions, and corresponding narratives are explored alongside the garden structure and social context to unpack the individualized and layered nature of children's environmental identity and care development. To locate and analyze children's engagements in the garden space, ethnographic, discourse, and narrative analysis methods are employed. The figured world concept is used to theorize and study the caring, environmental identities taken up and enacted by the children in this context. Through participation in emergent provocations, the creation and leveraging of garden artifacts, and investments in caring relationships, the children in this study shaped and cared for the garden space while it simultaneously shaped and cared for them. The environmental identity stories presented in this work broaden the definition of environmental identity to be more inclusive and less normalizing, thus, creating new spaces and moments for children to identify as environmentalists. The stories also raise implications for environmental education researchers to utilize more rigorous frameworks for investigating environmental care and identity development in the field. Findings from this research indicate that emergent garden spaces are potential sites for children to build relationships with nature in the public school. This is a significant practice for schools, as children today lack spaces in which to form environmental identities that implicate environmental care behaviors.

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DEDICATION

For Grandpa Tinker – there's a Dr. Sulsberger in the family.

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This dissertation would not have been possible without the existence of or my access to a phenomenal school garden space. Thank you to those who devoted yourselves to supporting, funding, and maintaining a teaching garden for your children for years and years, despite all odds. The garden is one of the things that made our school the best.

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CHAPTER ONE

Introduction

This chapter details my motivation for and path to conducting this dissertation research. It describes how my environmental education experiences and previous pilot study shaped the research questions I address. As my personal ideologies on aspects of this work are revealed, the frameworks I employ are implicated. A critical discussion of public school garden spaces frames the study in the context of current environmental education practices in public schools. After the caring, environmental self is defined as the cornerstone of this work, a brief description of the figured world framework introduces the means by which environmental identity is theorized and then studied. This chapter concludes with a discussion of the dissertation structure.

What Really Happened Inside That Tree?

One hot afternoon, I took a group of fifteen eager children to explore a massive, hollowed-out, redwood tree in a Northern California redwood grove. We hiked deep into the woods toward our destination. When we arrived at the grove, the children saw the tree in all its glorious possibility. They began to run full-tilt, toward the skyscraper-sized tree, while I yelled after them to "Wait, walk, and be careful!" Inside that tree, nothing short of magic occurred. Immediately, imaginative play took over. The children and I became forest animals, gathering food for survival. There were lizards, owls, bear, moose, and mice all pretending, laughing, learning, and falling in love with this nature experience together. Within this child-initiated provocation and our interactions with each other and nature, it was clear that there was some real work being done on these

children's environmental identities. But what was it that was really happening inside that tree?

During the decade or so when I acted as an environmental educator in various roles and capacities, I spent countless hours with children in nature. Via these interactions in the outdoors, I saw children with different backgrounds and life experiences relate to nature in a myriad of ways, for a number of reasons, and with a mixture of outcomes. Following each new experience, I found myself more and more fascinated by the ways in which children engaged with, experienced, and made meaning out of time spent in natural settings. I considered why they were pulled into certain experiences and what impact these experiences had on their identities. I knew as their teacher and companion on these journeys, I was witnessing (and most likely influencing) the very moments during which they were developing an ethic of care for nature that could potentially last a lifetime. I felt pulled toward uncovering and illuminating this process with and for all children.

When I later assumed the mindset of a researcher, I realized there was a rich sociological study unfolding inside that tree. Until this point, I had not fully considered all the forces at play during the children's nature interactions. I had subscribed more to children's biophilic connections to nature - that children are instinctively bonded to nature (Wilson, 1984.) Within this tree experience, however, I had witnessed children acting as social agents of choice, change, and care. They were ever-evolving knowers, negotiators, and co-creators of their own experiences and identities. They brought to their interactions and experiences particular networks and frameworks of habits, feelings, and ideas. And of course, my power to shape the experience played a part as well.

Further, I realized that the children's levels of engagement and connections depended upon the particular social structure and context of the experience. In other words, where they were, who was there, what was said, and what they did mattered. What happened inside that tree was, in fact, quite complicated.

To add to the concept of environmental identity as it is discussed in the literature, I felt that I needed to look at environmental identity as both biological and fluid, as well as influenced by history, social structure, context, choice, and care ethics. I needed to re-conceptualize and research environmental identity with the same rigor that the concept of identity itself was being researched in the social science literature. To fully engage with this concept as a researcher, I would need to deconstruct the complex interactions, choices, negotiations, expressions, and narratives that children enacted during environmental experiences. I would need to put children and their stories at the center of my work, and I would need to ask them why they engaged and cared. Thus, I began my journey into environmental identity with a pilot study focused on uncovering the complex and social nature of children's environmental identity construction.

Pilot Study: The Social Aspects of Children's Environmental Identity Development

The pilot study conducted sought to explore the defining tenets of environmental identity by investigating the social aspects of young children's relationships with nature. This ethnographic case study, taking place over six weeks within a preschool setting, explored the notion that children can be socialized not only to the natural world, but also into taking up aspects of early environmental identities. The teachers in this study defined environmental identity for the children and became the gatekeepers of it (Sulsberger, 2009). The validation from dominant members within this community, who were most

often the teachers, largely determined or guided the children's levels of engagement with environmental experiences. The teachers determined not only when and how nature interactions would occur, but also whether or not certain environmental behaviors would be validated. For example, recognizing the symbol for recycling within a lesson was often praised, while "making a mess" (exploring freely) in the soil on the playground was not.

The ideologies of the teachers dictated the inclusion of environmental content and activities at school in the first place. Since the school staff and teachers largely identified themselves as environmentalists, environmental content within classroom lessons and outdoor activities within the school day were given value. Students' partial or full participation in environmental activities deemed "important" or "fun" by the teachers changed the teachers' perceptions of that child or their attitude about the child during other learning experiences. This, in turn, may have allowed the children to acquire "good" or "obedient" student labels, and thus, an apparent freedom status resulting from these labels. In a sense, the validation and special treatment given by the environmentally-minded teachers in power made taking up aspects of an early environmental identity immediately useful for the children within this community (Sulsberger, 2009). But were the children who were being socialized to the environmental norms and ideologies of the teachers only giving the impression that they cared for nature?

There were definitely moments in the field when I observed the children negotiating the teachers' powerful ideologies as a process of rejecting or taking up new sets of environmental behaviors or self-formulations. These moments mostly occurred

during free nature play, wherein a perceived sense of freedom and creative expression allowed the children to create and leverage new uses and meanings for the garden space which compromised or reformulated the uses and meanings previously crafted by those in positions of power. As a result of this process, some children were able to leverage these experiences and author self-representations which extended or transcended the ways in which they previously self-indentified or were identified by others within the classroom. These artifacts of the children's experiences, which were unfortunately understudied within this work, may have been indicators of when the children began developing an ethic of care for nature.

What was unclear at the close of this study was if the children formed (or could have formed) caring relationships with nature while being socialized to it. And if they did build an ethic of care for nature, what did this process look like from the perspective of the children? While this study did confirm that environmental identities and care behaviors are socially-constructed, my research focused on the work being done *to* the children instead of the work the children were doing *on* their surroundings and themselves. My findings did not capture the totality or complexity of the environmental identity work really occurring in this space. To acknowledge and empower the child in both the field and in my research, I would need to remove the normalizing constraints in my research. Examining the children's complex choices, negotiations, narratives, and responses to power would allow me to understand and interpret their own, more complete, environmental identity stories. I began to see that these stories and paths to environmentalism would not look exactly how I thought.

Arriving at this important crossroads within my work, I felt it beneficial to journey back into my own childhood experiences to investigate the spaces within which I produced my own caring, environmental self. I pondered my participation in the natural spaces of my childhood and considered the weight and importance of these experiences throughout the course of my life. What was my motivation for entering certain social arenas, and what did that interest say about who I am and what I care about? As I considered the identity choices that were available to me as a child, I remembered some of the spaces I chose to enter and some of the ones I rejected. There were many forces at play, but I felt I had exercised some choice. I could recognize my preferences and the important people who impacted me in those spaces. I also began to recognize the purposes I had in investing in these spaces. I, like the children in my pilot study, had consciously leveraged aspects of those experiences to gain something for and within myself. However, I also know that throughout all of that negotiation, the natural world still felt like coming home to me. While I got something out of this nature relationship, I also cared very deeply for nature. Examining the identity formation process in my own life only reaffirmed the layered and complex nature of *becoming* in this context.

When I found myself back in the garden tending to a new set of students, I saw more clearly the work I was really doing in this space: I was making available to children a certain set of identity choices, or co-creating with them a space wherein they could begin to forge a relationship with nature. If they chose to invest or connect in this world, or take up or reject the identities available to them in the garden, it would undoubtedly be shaping some aspect of who they are or what they care about then and in the future. As I moved myself into closer contact with the children and the garden in this

way, I felt a newfound responsibility to consider the governmentality of the garden space so that the power to actualize could be realized by and for the children. If I could attend to notions of time, space, and power in the garden, I believed I could open up opportunities for children to forge caring, reciprocal relationships with nature. And if I encouraged the children to make meaning of these nature relationships in the context of their own lives, there would be many new environmental identity stories to tell.

Framing the Dissertation Study

The understandings about environmental identity that have been presented thus far initiated a framework for this dissertation work. However, there are other personal and political considerations that played an important role in shaping this work. To further frame this dissertation study, I next engage in the reflexive practice of making the personal ideologies which guided this work more transparent. Then, I explore the limitations and realities of public school garden spaces in juxtaposition with these beliefs. The paradoxical positioning of these two viewpoints situates this study at the intersection of care ethics, environmental identity, and current environmental education practices. It provides a purpose and aspiration for this work and distinguishes it from current environmental education research occurring in school gardens.

Ideological Considerations. Malone (1999) supported a model of conducting environmental education research that makes explicit its political research agenda. It is her belief that if the strategic research agenda is made clear to the public, bias will be exposed and rightfully considered alongside transparent statements of activism. This framework calls for the researcher to reveal personal philosophies on an environmental topic of study as a foundational step in the research process. Becoming an environmental

researcher as an environmental activist needs to be done in a way that is scholarly, but also exposes the researcher's sense of urgency, care, and compassion for the political issue at hand. The process of identifying myself as a researcher and activist within this work begins by exploring my own beliefs about the environment and environmental education.

Foundationally, I have a strong, personal connection with the natural world. I know the role that time spent in the nature plays in my personal and professional life, and I believe that children should also be encouraged to explore this for themselves. I seek quiet solace and relaxation in nature, which balances my emotional health. I know how to grow food in my own backyard. And I utilize the natural playground that the Earth provides by participating in environmental experiences and explorations, which benefit both my emotional and physical health. I understand that a healthy environment translates into a healthier human being, so I champion this for myself and others. Being encouraged to develop an environmental identity and being provided with opportunities to do so as a child enabled me to have this relationship I benefit from so greatly today.

While my family encouraged me to spend quality time outdoors, my ideas and beliefs regarding environmental care also took shape during more formal, school-like experiences. Thus, I believe public schools play a critical role in introducing notions of environmental care to today's children. Currently, school experiences provide many children with their strongest means of forming an ethic of care for nature (Monroe & Fien, 2005). Children now spend most of their time at home in front of the computer or television. Summers are spent in air-conditioned malls or playing sports on blacktopped courts. As a result, children have fewer opportunities to build personal connections with

nature or to make sense of the natural world around them (Louv, 2005). This reality places today's child at a disadvantage, as the natural world may be the strongest and most diverse educational resource available (Sobel, 2008). Behavioral and psychologically-based research continues to show the negative effect this separation has on a child's health and well being (Kahn & Kellert, 2002; Malone, 2004). A personal or social relationship with nature can provide children with access to the myriad of benefits one receives from nature, as well as promote a space to experiment with environmental identity formation (Clayton, Clayton, & Opotow, 2003).

Despite the disconnect today's youth may feel from nature, the future of sustainable practices in the United States hinges upon the environmental ethic of younger generations. As schools have become one of the most important places to cultivate the next generation of engaged environmental stewards, a critical deconstruction of public school participants, practices, and spaces is crucial to craft future environmental education initiatives that inspire environmental identity development in children (Monroe & Fien, 2005). Building an environmental education curriculum in the school requires an exploration of the deeply-buried cultural and political assumptions upon which an institution's ideologies are based (Orr, 2004). It is a difficult task to reconcile the disconnect between a child's needs, the academic content standards, school-based environmental education programs, and the time and space required to form a relationship with nature. Nonetheless, children will seek to form personal connections with nature and to feel empowered by these connections when they are provided with opportunities to do so (Wake, 2008).

While my experiences and research have pointed toward particular school garden structures as promising sites for environmental identity production, public school garden spaces are not employing the types of structures or activities that allow students to meaningfully participate in or relate with nature (Zavestoski, 2003). As meaningful participation provides the level of proximity and relatedness needed for environmental care to develop, children in these contexts miss valuable experiences during which to develop an ethic of care for nature (Noddings, 1984). Attending to notions of proximity, relatedness, and reciprocity between children and the garden are not necessarily the direct aims of today's public school garden programs. Further, encouraging environmental identity and care development in the school garden is not congruent with what is happening in the field (Wake, 2008).

The Problem in the Public School Garden. The environmental identities children form during public school garden experiences are influenced by the activities, experiences, and subject positions available to them within public school garden spaces (Holland, Lachicotte, Skinner, & Cain, 1998). There is little room made for child-initiated provocations or self-discovery within garden curriculum (Wake, 2008). When possibilities for environmental identity-seeking are controlled, children are socialized into performing eco-practices which may limit opportunities for environmental identity or care development (Zavestoski, 2003). When public schools relegate specific purposes and uses for school gardens that are based upon dominate, academic discourses, school gardens become standardized and political places under adult control (Hillcoat, Forge, Fien, & Baker, 1995). These constructions largely determine the social experiences,

relationships, and environmental values that school garden experiences can foster in children (Wake, 2008).

As more public schools focus on meeting academic benchmarks and maintaining test scores, structural and curricular choices are becoming increasingly limited for teachers. In addition, time constraints in the classroom add another level of pressure on teachers when it comes to covering and mastering required academic content and skills. Within these limits, the purpose of maintaining a public school garden may be questioned. One stated aim for gardening with public school children in California is for children to "learn empathy from each other and for all of creation" (http://www.cde.ca.gov/ls/nu/he/garden.asp). As a garden teacher and researcher involved with California public schools, I have wondered many times whether children's garden experiences move them toward this important goal.

In contrast with most, the teaching garden where this research was conducted is as an example of a public school space where conceptual and emotional understandings, proximity, emergent experiences, relatedness, and caring were all practiced. In light of school gardens losing their caring, environmental focus, stories from this setting are certainly worth telling. This work presents a public school garden experience that was arranged for and by children. Here, children were provided with new spaces and means through which to position themselves in relationship with nature. Allotting space for choice and self-exploration within the school garden curriculum invited the children to personally relate with and care for nature, or take up environmental selves in this context. To provide a theoretical explanation by which this process occurred, I further frame this work by detailing my construction and deconstruction of the caring, environmental self.

Constructing and De-Constructing the Caring, Environmental Self

While the core of this work focuses on identity and care development in public school gardens, the language of caring is largely missing from public school spaces (Noddings, 1992). Teaching about care ethics is a moral issue. However, if our educational system aims to create competent, engaged, citizens, caring most certainly has its place in public school spaces and curriculums. Promoting care in public education shifts the focus from teaching children what is "right and wrong" to teaching children how to care. It allows children to ponder and decipher why caring for something may be important or useful in their own lives. This type of knowledge and experience positions children as moral agents of change (Noddings, 1984).

Caring is commonly defined across disciplines as engaging in acts that show concern for another (Martin, 2007). To care about something, one must become competent in and engaged with it. This requires conceptual and emotional understanding. Developing these understandings calls for a close proximity and relatedness to something, as well as a sense of reciprocity. Such a deep relationship allows one to see the intrinsic worth and value of something, prompting an ethic of care that is based on respect and a willingness to act on its behalf (Noddings, 1984; 1992).

Within this definition, notions of building an ethic of care for *something* can be easily transposed onto notions of building an ethic of care for *nature*. To develop an ethic of environmental care, children need to spend time in close contact with nature. As they engage in these experiences, this closeness almost forges a type of friendship between the child and nature (Martin, 2007). The relationship children can experience with nature as an object of care allows them to understand that connections with nature

can be both personal and beneficial. As they experiment with giving themselves to the nature experience, they can receive opportunities for growth and wellbeing in return. This viewpoint invites the level of relatedness, proximity, and reciprocity between people and the environment, which are the foundational tenets of both ethical and environmental care (Noddings, 1992).

While the ethic of care concept answers the *why* and the *how* of environmental identity, there is no term in the literature which bridges environmental caring and environmental identity within this positionality. Thus, for the purposes of this dissertation study, I have theorized the concept of the caring, environmental self. The caring, environmental self represents a conjoining of Clayton et al.'s (2003) environmental identity theory with Noddings (1992) ethic of care argument. If an environmental identity is "a sense of connection to some part of the nonhuman natural environment, based on history and emotional attachment…that affects how we perceive and act toward the natural world" (Clayton et al., 2003, p. 45-46), then applications of Noddings' (1992) ethics of care concept are central to understanding why and how environmental identities are linked to stewardship behaviors. The connection of these theories strengthens the position of environmental identity as both relational and participatory. Forming a caring, environmental self means forming an environmental identity that is built upon and strengthened through the tenets of care ethics. Therefore, the terms environmental identity, environmental care, and environmental stewardship are used interchangeably and in conjunction with one another within this work.

While the caring, environmental self rationally and emotionally explains the personal relationships and experiences that the children in this research developed with

the school garden, an additional theoretical lens was necessary to unpack the processes by which these identity movements occurred. Here, I pull from Holland et al.'s (1998) concept of figured worlds. Figured worlds are "frames that describe characters who are inspired by a particular set of concerns to participate in a narrow range of meaningful activities" (Jurow, 2005, p. 39). The figured world concept becomes an overarching framework from which to examine how and why children are "drawn to, recruited for, and formed in" social spaces, as well as how they become "active in and passionate about them" (Holland et al., 1998, p. 49). In figured world research, children utilize and improvise upon their varied cultural, historical, and linguistic resources to form identities within powered, intentional, social arenas.

The garden, when perceived as a figured world, is a powered, social, outdoor, space that children create through and for themselves. The figured world of the garden exposes children to nature-based activities, interactions with other children and their concerns, and new artifacts to acquire during their experiences. These factors draw the children into the garden experience and provide opportunities to construct a caring, environmental self in relationship with the figured world of the garden (Boaler & Greeno, 2000). Within the context of this work, the figured world concept provides an identity-centered framework for understanding how and why students take on concerns and care behaviors in relation to the school garden and how this impacts their environmental identities and care behaviors over time (Holland et al., 1998; Jurow, 2005). This illuminates the diversity of ways children come to care for nature, and reveals certain structures, activities, and relationships that may be powerful contributors to environmental identity and care outcomes in garden spaces. In the context of the

possibilities held within the emergent spaces in this study, I now present the research questions posed in this work.

Research Questions

At the core of this work is a desire to investigate the impact of an emergent teaching garden on a group of children's identities and ethics of environmental care, as expressed through their words and actions. One of the goals in this work, then, is to engage in research that attempts to reveal the fluidity and complexity of children's identities and care behaviors within the figured worlds of their school-based garden experiences. To accomplish this, my research needed to rely on a holistic, practice-oriented perspective of identity. My work was informed by sociocultural theory, which emphasizes the social and cultural production of knowledge during engagement in social activities and discursive practices (Rogoff, 1990; 2003). Further, I employ an identity-in-practice perspective, which views identity as flexible and forming as children's participate in figured worlds to create new self-understandings (Holland et al., 1998).

These viewpoints provide an important lens for understanding environmental identity and care development in that they: 1) Focus on relational, participatory, and dynamic aspects of identity development by examining children's association, interaction, and involvement with one another, with their surroundings, and with shared activities over time (Holland et al. 1998); 2) Provide a means of investigating knowledge and behavior change, which may be salient aspects of environmental identity or care development (Thomashow, 1996); and 3) Offer a means of examining how children's environmental identities and ethics of care are situated and created in the multiple contexts of their lives and in the field of environmentalism.

In consideration of the aforementioned theoretical perspectives, my main research question is: How do students develop caring, environmental selves as they participate in emergent, garden-based activities? As it was my aim to inspire an environmental identity or ethic of care through student-centered, emergent experiences, values acquired and expressed within children's experiences were the focus of my work. I also intentionally focused upon the relational moments whereby environmental care ethics were formed and expressed by the children as they engaged in social, recursive experiences.

Attending to these layers of complexity, this research question will be examined on two levels: The structure of the garden and activities, which will include my own perspectives and analysis as the garden teacher; and the students' participation and self-understandings. Examples of the types of questions explored about the garden structure include:

1) What were the goals of the garden program?

2) How were learning experiences structured in the garden to support these goals and to allow for children's environmental identity production?

Questions about students' participation and self understandings include:

1) How did the students participate in and talk about the garden in their school and home lives?

2) How did the students see themselves in relation to the garden and natural environment?

3) How did the students make meaning of their experiences to produce an environmental identity or ethic of environmental care? What did their expressions of environmental identity look like?

It is my aim that these research inquiries provide environmental educators and researchers further insight into children's conceptions of nature. Children's conceptual frameworks are lacking in the environmental education literature, and they are under-considered in garden-based teaching practices (Skelley & Bradley, 2007; Wake; 2008). Studying these frameworks will enlighten how and why students are shaped through the environmental spaces in which they participate. This, in turn, will speak to environmental education becoming more relevant for children and effective in its stewardship aims.

The deconstruction of my own ideological framework regarding environmental education in this chapter was the first step toward revealing the overall structure of the teaching garden. This framework largely dictates the objectives of the garden and its activities, as well as the certain types of activities and interactions that are possible for children within the space (Holland et al., 1998). Transparency about my values defines and defends the types of modeling that students received from me as their teacher. A parallel investigation of children's historical and cultural influences will provide insight into their own ideological frameworks on nature, and thus, their relational and caring interactions in the figured worlds of the garden. The interplay between these frameworks can then be explored in relation to students' acts of environmental definition and care.

Structure of the Dissertation

Chapter 2 presents the theoretical frameworks employed in this study, as well as a literature review to position this work within the existing body of environmental and environmental identity research. Chapter 3 provides an overview of the study's design, methodology, and methods of data analysis. In Chapter 4, the research findings are

outlined, beginning with an overview of the context and setting of the study. Then, descriptions of my five student cases and discussions of this data are offered. Finally, the three categories that emerged in the student data are described in relation to the research questions and relevant literature. Chapter 5 explains my two research themes, or the assertions of this work. The implications of these findings for environmental educators and researchers are explored. The chapter closes with a brief discussion on my research process and a call for additional research on these topics.

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CHAPTER TWO

Theoretical Frameworks and Relevant Literature

In this chapter, I position my research within the theoretical contexts of environmental identity, figured worlds, and public school garden spaces. First, I explore identity development within the figured world concept and through related figured world research. A subsequent examination of identity development within the figured worlds of school spaces positions this framework in the school context, while revealing possibilities for its use in garden spaces. Then, as the public school garden contexts and related research are explored, the concept of figured worlds is transposed onto children's environmental identity development within public school garden spaces. Here, contextual considerations are given to defining views held on childhood and the diversity of artifacts children can leverage within an experience. Finally, as I explore public school gardens as spaces for *becoming*, emergent garden provocations are posited as central to the child's process of imagining and enacting a personal relationship with nature. The chapter concludes with a summary of the literature review and a rationale for this dissertation study. This rationale discusses how my research might fill gaps in environmental education literature, as well as inform ongoing conversations about garden-based teaching practices and environmental stewardship cultivation in the public school garden context.

Identity Development in Figured Worlds

The ideas that children hold about their lives and the ways in which these ideas construct their realities impact how they invest in different social worlds and contribute toward

positive change (Handel, Cahill, & Elkin, 2007). The context and construction of the social spaces individuals inhabit affects how their identities are shaped within these spaces, or how improvised identities or new spaces may be created through them (Holland et al., 1998). Vygotsky (1978) considered the development of the self as a continually evolving process centered on social interactions with others. He posited that social interactions, mediated by symbolic forms, can become a resource or limiting factor during the process of self-formation. Individuals can choose to identify themselves with or against actors in particular domains of their lives. Further, individuals within social communities can utilize a variety of cultural artifacts during interaction as an organizational means for their own activity (Penuel & Wertsch, 1995). They can then impart meanings onto themselves, organize themselves in the name of these meanings, and find a sense of agency (Penuel & Wertsch, 1995; Vygotsky, 1978).

Bakhtin (1981) further layered these assertions, recognizing that the ability to author an identity lies in the diversity of languages and values that exist in social spaces. The diversity of these social spaces, then, asks the individual to utilize the resources available to comprise a sense of self that is diverse, evolving, and encompassing of others in the space. Here, individuals must always look to negotiate ideas of themselves in ways that are purposeful, yet dependent on the histories of others and their social interactions. These claims relate to the ways "whereby human collectives and individuals often move themselves - led by hope, desperation, or even playfulness…from one set of socially and culturally formed subjectivities to another" (Holland et al., 1998, p. 7).

Drawing from these theories on identity, Holland et al. (1998) defined identity as the process by which people come to know themselves, including the means by which

they figure out who they are through the social spaces in which they participate. They assert that identities are produced over time during interactions within culturally bound spaces, and they describe these spaces as figured worlds, or "socially produced, culturally constituted activities where people come to conceptually and materially produce, perform, or imagine new self understandings" (pp. 40–41). Individuals have a penchant to become invested in particular figured worlds to form and be formed by them as they author identities-in-practice (Urrieta, 2007). Within these spaces, "particular actors are recognized, significance is assigned to certain acts, and particular outcomes are valued over others" (Holland et al., 1998, p. 52).

The ideas that individuals hold about the figured worlds they inhabit can have an effect on the figured worlds themselves. Therefore, these ideas can also have an effect on individuals' identities as they are shaped through this world (Holland et al., 1998). While figured worlds can be defined as all-encompassing spaces where participants come to realize themselves through social participation, they can also present and shape individuals differently when examined through a narrower field (Blackburn, 2003). Recognition of this variance works to explain the array of identity prescriptions and potentialities available for different individuals within different social spaces. Further, it looks to highlight and capture the importance of an individual's own process of *becoming*, as this in turn impacts this process for others. To provide a rich picture of the process of *becoming*, the exploration of identity within figured worlds includes the interactions that occur within the world and the contextual placement of the work that is done inside them (Urrieta, 2007).

The process of identity formation within a figured world also includes current socialization practices, past cultural identities, and imagined selves and futures. Thus, the figured world concept can explain both the identity prescriptions and potentialities available to individuals in social groups (Rubin, 2007; Urrieta, 2007). Figured worlds are organized by the "cultural means" that are available within the diversity of social spaces (Holland et al., 1998, p. 53). These means mediate the complex negotiations that occur within social spaces, and are both controlled by and control subject positioning (Burr, 2003; Elliot, 2005). The processes and negotiations that delineate these spaces are also "partly contingent upon and partly independent of other figured worlds…and larger societal and trans-societal forces" (Holland et al., 1998, p. 60). When participants align their personal visions to concerns relevant within the figured world, their actions and behavior can "manifest the ascription of new meaning and the favoring of certain activities and practices over others" (Urrieta, 2007, p. 110).

Holland et al. (1998) described the tensions inherent within figured worlds, outlining identity formation as involving interrelated configurations of positionality, spaces for authoring, and world making. Positionality describes possible ways of being, or the positions individuals take up as they are made available within a figured world. The identity possibilities available in this world are varied and complex. They are influenced by power, and thus, can even at times contradict themselves. Within the complexities of these social spaces, individuals constantly respond and react to others during the process of positioning themselves (Davies, 2006; Holland et al., 1998). Individuals can choose to take up, negotiate with, construct, or reject different positionings within these spaces for *becoming*. Additionally, they can assign positions to

others. Movement through these different contexts can enable individuals to author new identities in a social space that are beneficial within their immediate world, or even across another figured world (Blackburn, 2003).

As the means by which individuals are sorted or can sort one another are further considered, the figured world framework is theoretically positioned within Bourdieu's (1972) Theory of Practice and his assertions regarding the arrangement of power and social spaces. Bourdieu (1972) defined social spaces as being "constructed on the basis of principles of differentiation or distribution constituted by the set of properties active in the social universe under consideration that is able to confer force or power on their possessor in that universe" (p. 229). Social spaces have multiple dimensions, and these dimensions can most often be categorized as forms of economic, cultural, social, or symbolic capital. Access to capital, or to artifacts and symbols from a Vygotskian (1978) perspective, is what provides individuals with the ability to move within or position themselves differently in social fields or figured worlds.

Bourdieu's (1972) concept of field represents the social arena where agents struggle to obtain or improve their positions of power through the acquisition or leveraging of different forms of capital. The structural elements present within a social space or field determine the means by which individuals have access to social, cultural, or symbolic capital. However, all forms of capital are not recognized or given value within a particular field. Further, as the different forms of capital which govern a field are not equally accessible to all participants in the field, power and positioning are also determined by who has access to the types of capital that hold the most value in that given field (Bourdieu & Passeron, 1977).

Individuals obtain and develop capital within the field in relation to their habitus, or the principles, ideas, and dispositions that form and organize their practices (Bourdieu, 1972). Habitus is formed under the influence of biology, race, gender, history, family, culture, geography, social class, education, and friends (Bourdieu & Passeron, 1977). It is comprised of values, dispositions, and principles inculcated from personal and cultural histories that remain constant across contexts. Habitus is representative of both an individuals' ideas about the world and the spaces in which these ideas are constructed (Dumais, 2002). One's habitus permits improvisation. Thus, it invites individuals to react in context with and in response to social norms (Bourdieu, 1972). It is, therefore, possible for one's habitus to evolve as they acquire new capital (Bourdieu & Passeron, 1977). New dispositions, however, are never free from power structures.

The concept of habitus relates to notions of one's "history-in-person," or the multiple figured worlds an individual has inhabited or inhabits (Holland et al., 1998, p. 18). As one engages in the sometimes difficult process of forming an identity in a figured world, the other worlds in which they participate are influential and self-defining (Bourdieu & Passeron, 1977). Despite the histories that describe individuals, relationships between characters are open, and the boundaries are permeable. Individuals can transform capital or artifacts encountered within various activities by deconstructing and orchestrating them in personally meaningful forms that are in accord with past life experiences and future possibilities (Holland & Lave, 2001). These outcomes can then be externalized as an individual communicates with others, represents herself, and maintains or negotiates a certain position or identity.

A field is a social arena where particular types of capital are both tacitly and explicitly recognized and valued. It defines the social setting in which the habitus operates (Bourdieu & Passeron, 1977). In this sense, the notion of field supports the concept of figured worlds. Both fields and figured worlds are hierarchically-organized spaces where possibilities for movement are governed by an individual's access to or ownership of capital (Bourdieu 1972; Holland et al. 1998). As individuals enter into a field or figured world, those in power assign positions to those who are less established. Novice members can then negotiate their relationships with the more powerful or established members of the community, which determines how their identities are shaped in the space over time. The process by which they "choose to accept, engage, resist, or ignore such cues shapes their developing identities-in-practice and determines the boundaries of their authoring space, which is driven by a sense of agency" (Holland et al, 1998, p. 125). Due to the social interactions and challenges that naturally occur in daily life, individuals arrive at particular articulations of the self over time.

Upon further consideration of the connections between the social field and figured world frameworks, Holland et al.'s (1998) example of individuals forming identities-in-practice within Alcoholics Anonymous (AA) becomes useful in the context of this work. Through the application of both frameworks in this context, this instance demonstrates how structure and agency can come together toward progress. In examining the world of AA, it was discovered that the program was structured in a way that determined its own closed set of understandings about alcoholics, their behaviors, and their lives. These interpretations differed from the cultural ideas held about these topics outside of the AA world. To become a member, then, one must become accustomed to the AA world and

come to “a new understanding of their selves and their lives and a reinterpretation of their own pasts,” or entering a “new frame of understanding” (Holland et al., 1998, p. 66). Eventually, for some, this turned into an evolution of identity.

While identity possibilities and trajectories were bound by social constraints, cultural constructions, and the politics of power, possibilities for identity development existed within this figured world. The individuals participating in AA were both shaped by and shaped the AA world in which they participated. As worlds and identities interacted to author new identity constructions in this new space, a sense of agency arose (Holland et al., 1998). Individuals in the AA example occupying a similar social space had formed an alliance. Social change occurred in this alliance when one member had the ability to control the symbols of power and importance in the social field (Bourdieu & Passeron, 1977; Holland et al., 1998). The AA participant of focus within the study achieved subjectivity by resituating herself and engaging her identity within the sociocultural context.

This act of improvisation demonstrates a means by which an individual can shift representations of the self toward others or form new competencies to participate in a figured world. Improvisation entails “serious play,” or “the rituals and arts created on the margins in newly imagined communities” (Holland et al., 1998, p. 272). Dependent upon the sociocultural and historical contexts of interaction, improvisations arise during negotiations within both public and private spheres. As individuals interact and author themselves toward contradictory identities within social spaces, an ever-changing arrangement of resources can be sourced from their historical and cultural experiences and discourses (Bakhtin, 1981; Gee, 2000). Through participation in figured worlds,

possibilities arise to act with agency or to create new "ways, artifacts, discourses, acts, selves, and perhaps even more liberatory worlds" (Urrieta, 2007, p. 111).

Numerous researchers have asserted that a sense of agency can be achieved in particular sociocultural structurings (Blommaert, 2005; Holland et al., 1998; Hull & Katz, 2006; LeCourt, 1998). Giroux (1996) referred to agency as the capability to envision the world differently and then to act in accordance to this vision. He argued that awareness of power in the process of identity production can bring about moments of agency, thereby allowing an individual to manipulate or change this process for themselves (Giroux, 1996). However, an individuals' potential to act within a sense of agency is contingent upon her role as an "active interpreter of ideology, a site of cultural negotiation herself, individuated in her relationship with ideology herself" (LeCourt, 1998, p. 285). Research on the boundaries and possibilities within institutions of structure and power has critically situated the figured world framework within formal educational contexts.

Identity, Figured Worlds, and the School Context

In the field of education, figured world research highlights students' possibilities for positionality, spaces for authoring, or world-making within specific contexts (Holland et al., 1998). Hatt (2007) utilized the figured world framework to define "smartness" at an urban high school. This research demonstrated the ways in which this identification impacted students' ideas about and abilities to obtain placement and positioning within the figured world. Robinson (2007) imposed the figured world concept onto a history classroom to examine the different identities and positionings offered within this world. Skinner, Bryant, Coffman, and Campbell (1998) characterized a kindergarten class as a

figured world that was co-constructed by the teachers and students participating in the world. They claimed that such a world imparted identities onto the students that could follow them throughout their lives. As these schools were inherently political spaces with their own sets of defining artifacts and discourses, much of this research on figured worlds in educational settings was focused within the positionality realm.

With more focus on the spaces for authoring available within education spaces, Boaler and Greeno (2000) found that different classroom practices can provide new spaces for authoring and encourage students to develop different relationships and identities with a discipline. These relationships, then, can profoundly influence students' interest in and learning of that discipline (Boaler & Greeno, 2000). Drawing from Wenger (1998) and Holland et al. (1998), they examined how high school students' knowing of mathematics could be understood as participation in a set of particular social practices. In their interviews with students enrolled in discussion-based or more traditional advanced-placement calculus courses, they found that student success and participation in mathematics classrooms was based more on their identification with particular practices than their cognitive abilities. It was posited, then, that students' reflections about their likes or dislikes for the study of mathematics was an authoring of identities as learners of mathematics within particular social practices (Boaler & Greeno, 2000).

Related to notions of evolving new identities and behaviors, Urrieta (2007) used the concepts of figured worlds (Holland et al., 1998) and artifacts and mediation (Vygotsky, 1978) to present a case study of individuals shaping their identities toward activism through participation in particular figured worlds. These figured worlds opened

spaces wherein they could discover and explore new meanings about their cultural heritage. As new meanings were ascribed to aspects of their culture, they became positive artifacts to utilize and leverage. As these meanings were integrated by individuals, new selves were constituted through these new cultural understandings. This work demonstrated that individuals can gain new perspectives of figured worlds through their participation in them. These perspectives can ascribe new meaning or emotion to artifacts and actions, which can help mediate individuals' thoughts and feelings. Through these means, individuals can also experiment with the ability to "position themselves for themselves" (Urrieta, 2007, p. 110).

Collectively, this diverse body of work on figured worlds in educational contexts lends insight into how individuals are "drawn to, recruited for, and formed in these worlds" (Holland et al., 1998, p. 49). Further, it demonstrates that "certain discursive spaces encourage certain articulations of the self" (Talburt, 2000, p. 17). As supported in these works, the presence or absence of particular ideologies or sets of practices within educational fields dictate the accessibility and value of the artifacts or capital within these fields (Bourdieu, 1972). For example, if a space does not encourage a certain self-expression or type of identity performance, then it can no longer become a space for those communications of the self (Blackburn, 2003). Of particular interest to my own research, this body of work also speaks to the tensions and interplay between structure and agency within the diverse figured worlds of education. It affirms that as choice and action are prescribed in educational worlds, agency and spaces for self-authoring may also become constrained.

The figured world concept is a theory that can be utilized in research within a plethora of disciplines. Across diverse bodies of literature, it can become the theoretical framework for conceptualizing identities and realizing power. While the figured world framework has successfully been applied across many subject areas in public school contexts, it has not been fully applied within the context of public school environmental education or garden-based programs. It stands to reason that applying this framework within school-based gardening contexts could yield valuable insight into how children shape and are shaped by public school gardening experiences.

The Public School Garden Context. The concept of the school garden is not a new one. For decades, educators have qualified garden-based experiences as meaningful, hands-on activities which emulate real-world learning (Marturano, 1999). At points throughout history, school communities have held varying ideologies which promoted the garden as an appropriate educational tool. In each time period, the appeal of gardening in the school setting was rooted in a desire to move students toward culturally and historically-revered learning goals (Blair, 2009).

During the beginning of the twentieth century, the correlation between learning and experience was emphasized by academics in the United States (Jarvis, 1916). During this time, the school and the garden became affiliated to bring "boys and girls into closer relationship with their environment" and to develop "strong-bodied, efficient, and contented citizens" (Jarvis, 1916, p. 10). A school garden was present in every state in the country by 1918 (Marturano, 1999). As an early advocate for experiential learning, Dewey (1938) also encouraged teachers and students to take learning experiences out into nature in order to connect academic subjects with student experience. The perceived

educational worth of school gardens lessened following World War II, as schools began to focus more on instructional techniques that would lead to technological advancements (Marturano, 1999).

As educational reform became a focus in the 1960s, gardening in the public school saw another resurgence (Marturano, 1999). The public became more concerned with environmental issues, and an environmental movement took hold. This led to the creation of school gardens as living classrooms where students could interact with content and begin to understand the intricacies of the natural world. Weakened by the conservatism of the 1980s, the use of the school garden did not re-gain popularity in schools until the experiential learning trend of the 1990s (Marturano, 1999). Currently, the "No Child Left Behind" culture is gradually being countered by an emerging "No Child Left Inside" culture (Louv, 2005). Concerns about the natural world and the health of children have influenced groups to reintroduce children to nature and to cultivate nature on school grounds.

School gardens continue to garner popularity for expanding learning opportunities outside the classroom. Public officials and modern-day teachers are speaking to the worth of teaching academic content through the garden. The California Department of Education (CDE) put forth the "Garden in Every School" initiative in 1995, based on the following beliefs about garden-based experiences: 1) Gardens connect children with fresh, healthy food. Experiences in gardens can encourage children to try new, healthier foods, which can benefit their health; 2) All school subjects can be taught or reinforced in a school garden. The garden provides rich opportunities to touch upon science, language arts, math, social studies, as well as art content; 3) In the garden, children can develop a

greater understanding of and connection with the Earth's systems. This will encourage them to protect the Earth for future generations; and 4) Gardens bring school communities together toward common goals. This can reinvigorate a school climate, or encourage new connections between all stakeholders (http://www.cde.ca.gov/ls/nu/he/garden.asp).

Also recognizing the worth of school gardening, the California state governor and legislature passed numerous bills encouraging schools to incorporate gardening in the school day:

1) Assembly Bill 1014: "Instructional School Gardens." Passed in 1999, this bill established the Instructional School Garden Program. Administered by the CDE, it allocated grant money be administered by the Integrated Waste Management Board to eligible school sites;

2) Senate Bill 19: "The Pupil Health, Nutrition, and Achievement Act." Passed in 2001, this bill recognized that the inclusion of gardens in school sites increases the availability of organic produce for children;

3) Assembly Bill 1634: "Nutrition Education." Passed in 2002, this bill called for the CDE to develop new nutrition education curriculum based on best practices. It supported the use of school gardens in these aims by establishing a new school garden grant program; and

4) Assembly Bill 1535: "California Instructional School Garden Program." Passed in 2006, this bill authorized the CDE to award $15 million in grant money to more than 40% of California's public schools to endorse, establish, and uphold school gardens as instructional sites (http://www.cde.ca.gov/ls/nu/he/garden.asp).

Numerous studies have been conducted on school gardens spaces in California and beyond (Blair, 2009; Bowker & Tearle, 2007; Miller, 2007; Nimmo & Hallett, 2008; Ozer, 2007; Parmer, Salisbury-Glennon, & Shannon, 2009; Skelley & Bradley, 2007; Wake, 2008). These studies include both observational and experimental assessments of school garden impact. Public school garden research has linked gardens to improved science achievement and test scores and to improvements in students' overall health (Graham, Beall, Lane, Lussier, McLaughlin, & Zidenberg-Cher, 2005). Further, gardens have been credited with contributing to students' personal, social, and moral development, as well as their academic, vocational, and life skills (Trelstad, 1997).

In their comprehensive work in this area, Lieberman and Hoody (1998) identified forty successful environmental educational programs to assess across numerous domains. The programs they researched all utilized teaching approaches that were hands-on and multidisciplinary, as well as focused on the inclusion of activities that would develop environmental intelligence and appreciation. It was found that the programs under study increased students' achievement on standardized tests in the areas of reading, writing, math, social studies, and science. These programs were also credited with raising students' interest and investment in learning experiences, increasing attention levels, and diminishing behavior issues. No significant findings, however, were reported in the increase of environmental appreciation (Lieberman & Hoody, 1998).

Despite the growing support school gardens are receiving due to findings such as these, the impact that public school gardens have on students' self identification with nature and environmental stewardship behaviors still remains under-theorized, understudied, or unproven (Blair, 2009; Skelley & Bradley, 2007; Wake, 2008). In the

environmental educational research, school gardens have not been explored as likely sites in which to cultivate desired environmental identities and attitudes. While some studies have linked gains in environmental or science achievement to garden use, these findings were not fully explored in a complex relationship with children's environmental identities or care ethics. Thus, they can only be weakly linked to the relationships children did or did not form with these natural spaces in these contexts (Clayton et al., 2003; Noddings, 1984). Studies which included discussions on environmental stewardship or identity relegated these constructs to a secondary purpose or outcome of school garden spaces (Wake, 2008).

While it would appear that more longitudinal studies are needed to fill these research gaps, these longitudinal studies may still be inconclusive if the contexts under study are not somewhat child-directed or if children's environmental identities are not a central focus within the garden experiences (Clayton et al., 2003). An examination of the lived and imagined experiences of children in child-directed garden provocations within the figured world framework may capture the diversity of children's experiences and expressions in these contexts. This research could bring durability to children's diverse processes of meaning-making and identity construction within public school garden spaces. As stewardship is a personal and social construct, it requires a certain amount of time and space to be fully explored and told by individuals within garden contexts and garden research (Sobel, 2008).

Wake (2008) noted that the school garden movement has always "aligned itself with promotion of healthy living for children through exercise, exposure to natural elements and the potential to learn about and even grow healthy food for themselves" (p.

430). Further, Nielson (2006) defined environmental education as a "contemporary phenomenon largely defined by formal school systems, government documents, and…the study of science" (p. 11). Public school principals in California, a state boasting more school garden use than any other in the country, have also reported that the most frequent reason for having school gardens is to enhance academic instruction in the areas of science and nutrition (Graham et al., 2005). In this sense, school gardening programs have not been heavily focused on developing and assessing interconnectedness with nature among students.

Due to a number of ideological factors which compete in public school spaces, public school garden curricula has been relegated to specific purposes and mandated in certain ways. The lessons carried out within school gardens must often align with state and national science standards. For many schools, this becomes the only means for justifying the allocation of funds or time to school garden activities (Graham et al., 2005). For example, the CDE created a guide for classroom teachers and school administrators to utilize when exploring the possible use of a school garden for meeting their educational goals. The "Guide for Supporting California State Standards through Garden Based Education," while useful in some areas, mandates and labels gardens spaces as sites for teaching state and national academic content standards. For some children and teachers, this curriculum guide may represent another invisible, yet powerful, constraint placed on school learning spaces and the potentialities that unfettered natural spaces can hold (Payne & Wattchow, 2008).

With school garden spaces often planned and structured by adults, children merely visit the garden for standards-based experiences (Wake, 2008). There is little

room for free-exploration, creativity, or play in these natural spaces (Payne & Wattchow, 2008). And while school children may participate in planting, weeding, identifying, or harvesting in garden spaces, these activities are often not child-directed or child-centered learning experiences (Hillcoat, Forge, Fien, & Baker, 1995; Malone, 2007). Such constraints limit opportunities for children's environmental identities to develop through processes of uncovering unconscious knowledge of the self, building relationships within and with the garden space, and leveraging their experiences to achieve new aims.

Public school gardens, as they are designed and presented within environmental education research, have limited children's environmental identity possibilities and trajectories (Malone, 2007). Students are shaped by their school gardens and gardening experiences, and the positions available to them within school garden spaces are indeed limited. Further, school gardens may not be providing the types of experiences that are needed to form environmental identities in children, which may lead to a future of environmental stewardship. While there could be real environmental identity opportunities in these garden spaces, these are often limited or missed altogether because of the time, space, or curriculum limitations placed on the public schools wherein the gardens reside (Payne & Wattchow, 2008).

Payne (2005) focused on how cultural production in school spaces constrains the qualities of "being, doing, and becoming a relational, social, and ecological self" (p. 415). While school gardens may be overlooking important contextual considerations which support environmental identities grounded in environmental stewardship, potentialities within public school gardens can be expanded toward activities and contexts that empower individuals to build deep, personal connections to natural places. As Dewey

(1916) stated of school gardens: "Where schools are equipped with gardens…opportunities exist for reproducing situations of life, and for acquiring and applying information and ideas in carrying forward of progressive experiences" (p. 132). Those in positions of power within public school garden spaces can examine how the social, historical, and cultural context of garden experiences affect who is drawn in and how they are shaped. Then, to encourage environmental identity development within the figured worlds of public school gardens, school garden contexts can be reconstructed to include child-centered experiences in addition to their focus on teaching ecological content.

Environmental Identity and the Figured Worlds of School Gardens: Contextual Considerations

Within this research project, environmental identity attends to "the different ways people construe themselves in relationship to the Earth as manifested in personality, values, actions, and sense of self" (Thomashow, 1996, p. 14). Drawing from Clayton et al.'s (2003) assertion that environmental decisions and actions are the direct product of environmental identities, a child's personal orientation with nature governs the child's level of ownership, involvement, and activism toward the environment. Applying these perspectives within the figured worlds of public school gardens then describes how direct experiences in nature can act as a framework for children's personal decisions, professional choices, and social action (Thomashow, 1996).

While it is possible for teachers to socialize students into figured worlds of environmental stewardship, it is likely that behaviors and identities taken up by students in this process would be temporary or largely in response to power structures (Sulsberger,

2009). Imposing environmental behaviors and ideologies onto students may impact change in the short term, but these outcomes are not likely to prompt students to form profound, personal relationships with nature or an embodied sense of environmental stewardship. Further, this process does not represent the diverse processes students can employ to construct an environmental self. While classroom structures and norms indicate particular student identities, the diversity of interactions within learning environments creates a range of identity possibilities (Linehan & McCarthy, 2001).

To consider the social development of environmental identities in public school garden spaces, this work theoretically draws from Clayton et al.'s (2003) model of conceptualizing and analyzing environmental identities, which stated:

> How we understand ourselves in nature is infused with shared, culturally influenced understandings of what nature is – what is to be revered, reviled, or utilized. Social variables affect how much we are able and choose to focus on the natural environment and how we interpret what we see. However, although social influence is inevitable, the degree of influence varies. (p. 10)

Through this theoretical lens, children interacting with one another in an environmental learning community negotiate their identities together through their lived experiences in the different worlds of environmental education. Further, this process is mostly contingent upon the social construction of the learning space and their habitus, or histories-in-person. As identity-seeking and stewardship-forming processes occur within the figured worlds of school gardens, identity outcomes are influenced by students' constraints or possibilities within garden spaces (Holland et al., 1998). The activities and relevant artifacts of a particular figured world, when viewed and utilized as resources,

enable students to develop self-concepts in relation to the figured world (Boaler & Greeno, 2000).

The figured worlds of environmental education represent the nested school-based projects, curriculums, or groups in which individuals enter to shape or to be shaped by. Students enter or are recruited into public school gardens, which are bound spaces. These provocations are housed within and governed by local and outside forces such as public school structures, curriculum, or academic standards. There are different types of people who inhabit the figured world of garden activities. The teachers and students populating garden spaces have their own histories and social rankings, which constitute and impact the social structure of the garden space. As actors within garden projects maintain the space and engage in experiential learning activities, they can gain new knowledge, perspectives, or artifacts. Through prolonged participation in a figured world, children can inhabit the space, take up its ideas, and behave in accordance to its norms (Jurow, 2005). When leveraged, school garden spaces and activities can shift, construct, or solidify the identities of its participants (Holland et al., 1998; Vygotsky, 1978).

As public school garden activities are complicated through the figured world construct, however, possibilities for environmental identity-seeking and authoring become more layered and contextually-bound (Stone, 2009). The social construction of the school garden can either open up spaces for environmental identities to be taken up, or they can limit these spaces for these purposes (Holland et al., 1998). Garden-based provocations designed by and for children may enable children to forge environmental identities which reflect an ethic of environmental care (Clayton et al., 2003; Payne & Wattchow, 2009; Stone, 2009). When the everyday and imagined practices of children

are encouraged and valued in these spaces, children are provided with opportunities to position themselves in new ways or to participate in self or world-making. Artifacts, or material symbols, can mediate thoughts and be leveraged to improvise or imagine new environmental selves (Bakhtin 1981; Hawkins, 2002; Holland et al., 1998; Vygotsky, 1978). They can act as pivots that move or alter the frame of an experience and, in a sense, begin to open up possibilities within figured worlds (Holland et al., 1998; Vygotsky, 1978). Granted in the garden and utilized to their benefit, garden artifacts build students' caring connections with the garden space (Noddings, 1984).

Postmodern Views of Childhood and Child-Directed Experiences. The social construction of public school garden spaces affects the depth, breadth, and authenticity of the nature-self relationships children may form (Payne & Wattchow, 2008). The figured worlds of public school gardening can provide moments of freedom, exploration, and self-expression, which inspire environmental identity development, or they can inhibit these possibilities (Payne & Wattchow, 2008). Within school gardens, social and cultural constructions of childhood further shape the contexts in which children develop identities-in-practice (Turmel, 2008). Children may be viewed as empty vessels; or they may be viewed as natural, capricious, developing, or competent (Handel et al., 2007). At certain times and in certain spaces, some or all of these views may be held simultaneously. Similarly, one of these views may also be applied on its own for its contextual relevance or to achieve a particular cultural aim (Turmel, 2008). Considerations of children's roles and abilities within the figured worlds of education shape the design of educational spaces. Therefore, a critical deconstruction of culturally-

constructed notions of childhood is a process of creating new spaces and pedagogies for new self-authorings to emerge in the figured worlds of environmental education.

Modern views of childhood socialize children into sets of practices and ways of being, as well as prompt education to become marginalized into set curriculums for this specific purpose (Orr, 1992). A modern stance applied in the realm of environmental education may become inhibitive to children's developing connections with nature. Orr (1992) further explained:

> Education in the modern world was designed to further the conquest of nature and the industrialization of the planet. It tended to produce unbalanced, under dimensioned people tailored to fit the modern economy. Postmodern education must have a different agenda, one designed to heal, connect, liberate, empower, create, and celebrate. Postmodern education must be life-centered. (p. 5)

Philosophical shifts in modern perspectives of childhood have been proposed by educators and educational researchers (Coates & Coates, 2006; Dahlberg & Moss, 2004). These views have challenged educators and researchers to participate in the construction of the competent child in educational practices (Dahlberg & Moss, 2004). Within this postmodern perspective, children represent a worthy cultural group which can contribute insightful understandings to society (Janzen, 2008). They are both influenced by and have influence over social experiences and structures of power; thus, they can become active agents in the various figured worlds of education (Holland et al., 1998; Greene & Hogan, 2005).

Educators and researchers have argued that children can deconstruct surrounding power structures and construct new identities-in-practice. They criticize the study of

children separate from context or as voiceless and at the mercy of adult power (Dahlberg & Moss, 2004; Grieshaber & Cannella, 2001). For example, as children engage in experiences and try on new identities, they can choose to take up particular identities and participate in various social practices or to abandon certain identities and practices that do not serve them in specific contexts (Lauer, 2009; Paechter, 2006). Navigating social spaces with an awareness of power, they become "co-constructors of knowledge, identity, and culture" (Janzen, 2008, p. 288). This postmodern view of the child as a co-constructer of knowledge reflects aspects of the child learning and negotiating with others in a social learning environment. This social constructivist view sees children as social actors who are active participants in the construction and determination of their lives (Forman & Fyfe, 1998). Dewey's (1916) image of the child as a capable researcher in the process of meaning-making frames the theory in this context.

Teaching practices, then, can either contribute to or counteract identity development in educational contexts. Discovering and deconstructing the ideologies which are sometimes invisible and which work to socialize children in public schools is the first step toward promoting positive environmental identity formation in these contexts. Giroux (1997) maintained that pedagogy can offer educators opportunities to move beyond particularistic politics and to embrace diverse perspectives in education. In an attempt to re-define progress from a more postmodern perspective, he stated:

> This is not a call to dismiss the postmodern emphasis on difference, as much as it is an attempt to develop a radical democratic politics that stresses difference within unity…The struggle against racism, class structures, sexism, and other forms of oppression needs to move away from simply a language of critique, and

> redefine itself as part of a language of transformation and hope. This shift suggests that educators combine with other cultural workers engaged in public struggles in order to invent languages and provide critical and transformative spaces…that offer new opportunities for social movements to come together. By doing this, we can re-think, and re-experience democracy as a struggle over values, practices, social relations, and subject positions that enlarge the terrain of human capacities and possibilities as a basis for a compassionate social order. (pp. 128-129)

Giroux's (1997) sentiments echo one of the most salient goals of educators within the postmodern perspective: To construct educational spaces where perceptions of the child and childhood can open up new possibilities for growth, democracy, and justice (Dahlberg & Moss, 2004; Farquhar & Fitzsimons, 2008; Mac Naughton, 2005). Through the deconstruction of truths and norms in the field of education, children are provided with diverse educational spaces to explore new ways of experiencing, challenging, and growing the self. This process expands the possibilities of the self and society toward a more just world (Giroux, 1996). For the educator, understanding the dynamic nature of the child and working to free that child from modern restriction within a dynamic educational space requires belief in the power of the child (Janzen, 2008).

Postmodern approaches to teaching and learning reinforce the assertion that identities and social practices may not only be reproduced, but also reconstituted by children within the figured worlds of school communities (Forman & Fyfe, 1998). In theory and practice, these approaches focus on the deconstruction of power structures inherent in modern schooling systems (Rinaldi, 2005). In these settings, children actively

construct multi-faceted, personal identities over time through choice and self-expression (Edwards, Gandini, & Forman, 1993). As classrooms engage in the co-creation of interpretations and meanings, the children are invited to express their self-knowing and to offer personal understandings (Malaguzzi, 1993).

Postmodern approaches to teaching and learning examine how knowledge constructs both boundaries and possibilities. As the classroom focuses on the child's knowledge in practice, the learning environment becomes more student-centered instead of teacher-led. Postmodern approaches to education are centered on maintaining spaces for learning that focus upon and encourage the children's construction of "his or her own powers of thinking through the synthesis of all the expressive, communicative and cognitive languages" (Edwards et al., 1993, p. 7). Foundationally, they are built upon the belief that children have the rights, ambition, and potential to construct knowledge based upon exploration within a stimulating environment for inquiry (Malaguzzi, 1994; Rinaldi, 2005). Upholding a capable image of the child subsequently denotes a set of specific behaviors during interactions with the child, which include listening to, respecting, and not interfering with the child's true essence. Based on this image of the child as a rich child, these approaches strive to create a community of children with theories, values, inquiries, and solutions of their own within social contexts (Malaguzzi, 1993).

Postmodern approaches carefully consider curriculum choices, as the curriculum can provide opportunities for identity negotiation through social interaction and self-expression (Forman & Fyfe, 1998). Postmodern educators assert that children taught through prescribed curricula can be largely socialized into who they are by the institutions to which they belong (Moran et al., 2007). Thus, it is the responsibility of

educators to nurture the identities of children by utilizing student-driven curriculum and student-centered approaches (Gandini, 1993). Teachers can utilize classroom curriculum topics as a means of examining identity issues pertaining to both individuals and groups. With these important topics in the classroom, both students and teachers have opportunities to better understand the normalizing power that lies within social spaces. They can examine how they contribute to powered practices, or perhaps even limit the identity possibilities of others.

The Reggio Emilia approach to teaching and learning represents one child-centered and child-directed approach gaining popularity in schools today (Malaguzzi, 1993). Through the use of a negotiated, emergent curriculum, Reggio teachers prescribe to a recursive cycle of project design, documentation, and discourse to build upon student interest and deepen classroom investigations (Forman & Fyfe, 1998). Within this process, Reggio educators introduce inquiries or provocations, listen to children talk as they interact with the world around them, and document the children's experiences through methods such as taking field notes, recording student dialogue, collecting student work samples, video recording, or photographing (Moran et al., 2007). Documentations are reflected upon and discussed by teachers and children to develop understandings of the meanings constructed by the community and to prompt future classroom activities (Forman & Fyfe, 1998; Jones & Nimmo, 1994).

Another example of emergent, project-based teaching that occurs within child-directed curriculum is Katz and Chard's (2000) project approach to learning. In this design for supporting learning, an environmental project consists of investigations into a topic of interest instigated by the children's environmental passions and preferences.

Projects typically occur in small groups, last for several weeks at a time, and unfold in multiple phases. During the first phase, a topic of interest is chosen and a web of possible learning experiences that could support the children's environmental interest is created. Children's questions and comments form part of this web, which continues to develop as students' interests emerge. In the second phase, deeper investigation of the topic is accomplished through a variety of provocations. Then, during the third phase, student experiences and creative responses are reviewed, and future provocations are planned through the sociocultural practice of documentation. Within these pedagogical approaches, children's freedom to guide instruction may also provide them opportunities to explore their developing identities through a diversity of means which feel meaningful to them (Katz & Chard, 2000).

By expanding notions of the child, educators can create spaces and increase opportunities for children to author environmental identities within the figured worlds of public school gardens. Here, the artifacts and symbols a child can employ during the process of self-authoring are also expanded or transformed to increase her identity potentialities within that space. While child-centered and child-directed provocations may provide children with opportunities to take up environmental identities, an examination of the narratives and imaginative narratives enacted by children within these experiences provides a road-map for understanding their complexities. As children's spoken and performative discourses become more visible in social spaces, the ways that "social structure, power relations, the different positions of each of the participants, and the desires and life histories of each individual are made real" also become more visible (Davies, 1994, p. 5).

Diverse Use of Narrative. Children's active self-forming not only calls for spaces and moments which are arranged for and by children, but also a valuing of the diverse means by which children can shape their identities in social spaces (Payne & Wattchow, 2008). Discourse and narrative are essential to the ways that we are "spoken" into existence and also speak ourselves into being. Expanding upon the concept of the narrative to include the imaginative and creative narratives children can enact in garden spaces provides a means of discovering, examining, and making clear children's embodied knowledge of the self in connection with nature (James & Prout, 1997). Children's imaginative play and their accompanying narratives in the garden context, recognized and leveraged as artifacts or symbols, can provide them with opportunities for imagining new spaces of being that otherwise may not have existed (Vygotsky, 1978). These symbols are inscribed meaning from the past, but they can be internalized and leveraged to access new identities or positive positionings within the figured worlds of school gardens (Bakhtin, 1981).

A child's understanding is not solely developed through language (Piaget, 1973). Bloome, Katz, and Champion (2003) argued that rather than asking, "What is a narrative?" scholars should ask, "What is being called a narrative, where, when, how, by whom, and for what purpose?" (p. 289). Considerable emotional force can reside outside of what is spoken in the garden. Students' identities with nature can form and present themselves in many ways. Malaguzzi (1993) has asserted that children have one hundred languages through which they can express themselves as they negotiate and author identities. Thus, in school garden spaces, discourse has its limitations. Children may

need to move beyond language in these spaces to fully express their experiences and to wholly represent themselves (Frosh, 2002).

Within child-centered learning environments, the ways in which children interpret themselves in relationship with experiences, others, and environments can be captured in their imaginative play and narratives (Hewett, 2001). As children interact with the world around them based on their desires, interests, and feelings the complexity of the self can be revealed through the expressive choices made within the context of learning experiences. As children communicate their experiences and negotiations, these diverse narrations represent how they choose to self-identify with their past, present, and future in that figured world (Malaguzzi, 1993). Bustle (1997) stated that children's creative and imaginative expressions can embody the self as both social actor and artist. In this sense, she claims that an individual's imaginative act:

> reflects unique interpretations…with which their selves connect. Individuals are called upon to shape interests into interpretations and ideas. Interpretations are then stabilized in unique forms of representations. If the process of creative inquiry continues to engage the self at this point, then forms become representations of self. (p. 12)

Participation in the social construction of identities within child-initiated provocations centered upon choice, voice, and imagination may bring a sense of empowerment to the young self-in-progress (Grieshaber & Cannella, 2001; Rinaldi, 2005). The participatory and expressive choices children make provide possible sites where they can negotiate power relations and make sense of who they are or wish to become (Hawkins, 2002; Wexler, 2004). The narratives attached to each experience are

varied in form and function, but they represent additional means for children to negotiate and author the self (Ahn & Filipenko, 2007; Kim & Darling, 2009). In the case of environmental identities-in-progress, the narratives children express within environmental provocations may represent spaces where children are negotiating power and ideologies, re-authoring environmental selves, or writing environmental selves into existence (Thomashow, 1996).

While imaginative acts have traditionally been viewed outside of the narrative text, all of these performances are situated, contextual, and bound by culture. To comprehend the depth of a narrative act, one must have a sense of the participant's history, norms, and preferences on self-expression. The Discourses, or performative approaches to discourse, a child chooses to use in social spaces not only embody her language choices, but also her access to symbols and tools (Gee, 1989). As narratives are formed though social and cultural processes, the diversity of ways in which children utilize narratives may conflict with the more traditional forms of narrative that schools expect. Children are pressured to change their narrative styles or content to mirror those purported by the school (Dyson, 1994). Additionally, they may perform identities congruent with a group's identity in order to become a member of that social group (Gee, 1989). Thus, children's diverse narration of their social experiences can be likened to a dance that moves delicately between both submission and resistance to constraining societal and historical forces (Gee, 1989; Bakhtin, 1981). Observing these dances offers insight into various identity prescriptions or potentialities within a particular figured world.

Hawkins (2002) posited that an act of imagination cannot be separated from the context and culture of its creator. He suggested that this creative self-expression is "a social act of identification under the conditions of both structure and freedom" (p. 218). Thus, producing an imaginative act or narrative is "an engagement with the social construction of identity rather than a free and unfettered act of self-expression" (p. 211). A child's expression represents a moment of negotiation during which the child's identity is called into being, either in relation to or in struggle with his or her own habits and dispositions. The self can be seen as a representation of the creative product, which essentially inscribes the individual into existence. The social and creative nature of identity construction and children's creative expressions are viewed as acts of identification through negotiation (Edwards & Springate, 1995).

When the text structure of a child's narrative is the primary focus, the social functions, roles, and identities embedded in their stories can be overlooked (Bloome et al., 2003). This is especially limiting in garden contexts, which are largely centered upon playful action (Clayton et al., 2003). A social constructionist perspective of the narrative views narratives as things that are done rather than had. Thus, self-positionings are bigger than the individual or her self-constructions. They are social performances which are formed in and through culture and context. Narratives are collaboratively constructed by both macro and micro level discourses and social interactions as children act and react to one another within a social space (Burr, 2003).

Learning spaces may be created wherein students can narrate real and imagined spatially-situated selves which engender a type of agency that embraces complexity and refuses reduction (Holland et al., 1998; Janzen, 2008). Creative narrative is an emergent

methodological approach that was developed by Leitch (2006) to combine arts-based methods and narrative inquiry, and it presents one possibility for expanding notions of narrative in school garden contexts. Through arts-based approaches, children are encouraged to interact with particular notions of their experiences to creatively investigate who they are or how they could be portrayed. Imaginative narratives, which are linked to imaginative play, arise as children creatively explore their experiences and identities. As new self images are created in relationship with nature, new self understandings come into awareness. When acknowledged and/or spoken, these understandings can become relevant and situated within children's lives in ways that alter decisions or behaviors now and in the future (Leitch, 2006).

The primacy of narrative and linear self-exploration in garden-based education may be challenged and alternative constructions of the self can be proposed (Payne & Wattchow, 2009). Carefully designed school garden contexts can allow students to bring together the dichotomous facets of their selves, creatively restructure them, draw selectively from each, and arrive at greater possibilities (Lauer, 2009). Encouraging self authorings through means which are more complex and messy than teachers often allow encourages students to explore their environmental selves through images, metaphors, and other avenues not traditionally offered in the classroom (Hawkins, 2002; Leitch, 2006). Rather than reducing the self to one guiding image, students can be provided with more open possibilities for exploring, negotiating, and improvising elements of their selves within the figured worlds of environmental education.

Public School Gardens as Spaces for *Becoming*

Scholars have recognized that power structures within a child's immediate cultural world impact identity formation (Lave & Wenger, 1991; Rogoff, Mistry, Goncu, & Mosier, 1993; Rogoff, Turkanis, & Bartlett, 2001; Wenger, 1998); however, children within these works have largely been characterized as powerless or as having little agency within this process (Mayall, 2000; Morrow & Richards, 1996). Examining identity formation from a modern viewpoint situates children as objects of observation rather than as social actors in their own right (Janzen, 2008; Mac Naughton, 2005). Thus, external views of children's behavior or the importance of socialization and environmental influences become the primary focus of the work. Applying this perspective within school garden contexts subsequently limits environmental identity possibilities and identity trajectories for children (Dahlberg & Hultqvist, 2001).

While children's identity possibilities and trajectories within schools are bound by social constraints, cultural constructions, and the politics of power within these contexts, the figured worlds of the public school garden can become symbolic sites of value from which to re-envision the self in relationship with nature. A child entitled to voice and choice in garden spaces and curriculum acquires a sense of agency within the figured world from which she can initiate or engage a process of environmental identity formation. This child-directed space values a new set of behaviors in school gardens, including her use of imaginative narrative and self-expression. Enacted as cultural symbols or artifacts within the figured world of the garden, these behaviors can be analyzed through the figured world framework to capture and complicate the child's

process of shaping or re-shaping the environmental self (Hawkins, 2002; Vygotsky, 1978).

Fendler (2001) idealizes education of children as whole child education. The education of the whole child calls for an awareness and attention to the child's head and heart. Education impacts the "spirit, soul, motivation, wishes, desires, dispositions, and attitudes of the child to be educated" (p. 121). Devaluing the voice and complexity of the child in educational research and policy has devalued the voice and complexity of the child in educational spaces, and vice versa. A radical shift in public school's views regarding the use of narratives and the children who create them offers children opportunities to question the perceived dichotomies which pull at them. In addition, it gives children the confidence to call such dichotomies into question. This, in turn, gives rise to alternative possibilities that further expose the fragile logic on which such dichotomies depend (Lauer, 2009). The potential for restructuring begins when those in positions of power identify the dichotomies that have structured social spaces and seek new combinations in response.

Standards-based pedagogies in environmental education undermine calls for immersive and emergent learning experiences which provide children with opportunities and spaces to reimage their relationships with nature (Payne, 2005). Child-directed provocations encourage meaning-makers to experientially and reflectively access and address their corporeal and imagined perceptions of time, space, self, and place. For children to feel connected to aspects of their nature experiences, they require self-directed time to explore, play, discover, and imagine (Sobel, 2004). Imaginative experiences and

their resulting narratives not only provide new positioings, but they can also nurture children's sense of wonder within and toward nature.

Exploring the play of language and image, as well as the relationship between symbol maker, symbol making, and social contexts could provide rich insight into children's improvisations and formation of identities. Further, opening up a curriculum, expanding the notion of discourse, and providing a school space for self-exploration could affect children's environmental identity development and resulting sense of environmental stewardship.

Rationale for the Dissertation Study. The field of environmental education has become increasingly concerned with the identities children take up in relationship with the natural world, as personal identification with nature is one precursor for future environmental stewardship behaviors (Clayton et al., 2003). The elementary school years are of particular interest, as they represent a crucial time to help children foundationally grasp the importance of forging their own environmental explorations and understandings (Orr, 2004). The key to uncovering how children feel about themselves in relationship with the natural world is to provide appropriate contexts in which they can build connections and understandings (Dewey, 1938; Payne & Wattchow, 2009; Sobel, 2004). In this sense, school environments that include outdoor spaces where children are invited to explore and nurture a personal relationship with nature may increase environmental identity possibilities and trajectories (Payne & Wattchow, 2009; Stone, 2009). Incorporating child-centered, environmental provocations into public schools may promote environmentally-minded children and a sustainable future.

School gardens create potential spaces for environmental identities and environmental stewardship behaviors to take root, and they are increasing in popularity within rural, urban, and suburban schools all across the country. Gardens are inherently "emergent, incomplete, and unpredictable" spaces, which when utilized as such, can serve the diverse needs of public school policymakers, public school children, and the planet (Talburt, 2000, p. 19). As more schools continue to follow the gardening trend, however, questions about the benefits of school gardens are being raised by environmental education researchers and scholars. Specifically, whether standards-based, school garden activities focused on imparting scientific knowledge and nutritional choices can provide the types of experiences that encourage environmental identity and stewardship development in children is still under-researched (Blair, 2009; Skelley & Bradley, 2007; Wake, 2008).

A synthesis of Blair (2009) and Skelley & Bradley's (2007) comprehensive literature review revealed research gaps and raised additional questions about garden-based experiences in schools. Within these bodies of work, children's self-directed environmental identity formation and stewardship behaviors, as directly related to garden experiences, were understudied or largely overlooked. Though children were the primary focus within the works, they were given little voice or choice. As a result, their self-positionings and play in nature were under-valued and under-studied as self-revealing processes. Further, the power structures which impacted children's identity formation in public school garden spaces were largely ignored. School gardens are not socially-simplified, agency-laden spaces where all students can develop environmental identities or an ethic of environmental care through participation in short, standards-based

activities. The process by which improvisation, identity formation, or a sense of environmental agency occurs for children in garden contexts needs to be complicated, realized, and more fully explored in the environmental education literature.

To discuss possibilities for environmental identities or stewardship behaviors to form within public school garden spaces, the layered structures and systems which shape its participants' actions, practices, and behaviors need to also be addressed. As school garden projects are socially, historically, and culturally-constructed, the means by which children can imagine or create new environmental selves within them can be compared to and examined through the figured world concept (Holland et al. 1998; Jurow, 2005). Taking up an identity during any social practice is a politically, socially, or culturally bound act. Individuals are either limited by or enabled through their personal histories and the hierarchies of power within the social fields they constitute. Thus, children engaging in school-based gardening activities are in a constant state of being shaped by and shaping the social fields in which they participate. Competing ideologies and curriculum restrictions within these fields can limit or expand the identities children can take up (Holland et al., 1998).

To fill gaps in the garden-based literature, additional research is needed which focuses on the diverse and complex processes by which an environmental identity begins to develop, as initiated and expressed by the child (Janzen, 2008; Malone, 2007; Mayer-Smith, Bartosh, & Peterat, 2007; Wake, 2008). An exploration of elementary school children's processes of environmental identity construction could inform when, why, or how children create and leverage various artifacts or experiences during school gardening

activities as a part of their process of *becoming* in the figured worlds of environmental education (Hawkins, 2002; Vygotsky, 1978).

Identity research is important for individual growth and social change when potential connections to agency can be uncovered within the work (Daniels, Wertsch, & Cole, 2007). Penuel and Wertsch (1995) have called for identity research in settings where participants are actively engaged in forming their own identities, while Volman and Dam (2007) have called for research which focuses on using the autonomy of schools to organize learning experiences in which social positions and identities are not inhibitive. Miller (2007) reported that "one of the areas of human culture most neglected by social science and the humanities is the garden" (p. 16). Postmodern research methodologies, as applied in the context of the school garden, provide a means for children to build self-knowledge, and they offer a challenge to the taken-for-granted idea that the social world can only be explored through spoken or textual discourse (Hawkins, 2002).

Gergen (2001) suggested a postmodern research approach to studying children's self-directed identity formation where students are "free to roam across whatever domains are necessary in terms of their goals – ransacking, borrowing, extricating, annexing, combining, reformulating and amalgamating in any way necessary for the most effective outcome" (p. 129). This research offers children compositional spaces for "juxtaposing, re-centering and re-contextualizing" self-authorings that depart from cultural prescriptions of environmental identity production in school gardens (Hull & Katz, 2006, p. 42). In this sense, it creates new spaces for personal expression and artifact creation. As children leverage these artifacts during identity-seeking and

negotiation within the figured worlds of public school gardens, possibilities for movement within these worlds are also expanded (Holland et al. 1998).

The aim of this study is to contribute to the research and practice of garden-based education within the larger field of environmental education. It will add to the under-studied topic of the school garden by examining students' developing environmental identities and care behaviors as they participate in emergent, garden-based activities. Highlighting the ways students' lives, cultural and linguistic resources, and community characteristics combine with learning and teaching, this study will contribute to both research and practice in environmental education. Scholars in environmental education have argued that there is a strong need for empirical research that attends to children's environmental learning, specifically focusing on the experiences and the situations in which the learning occurs (Rickinson, 2001). Empirical findings from this study about students' encounters with a school garden in authentic practice and students' developing environmental identities should inform the effort to achieve environmental literacy for all students. Once improved, environmental education in real contexts can strengthen students' commitment to the environment.

Ultimately, this research lends support to the use (or partial use) of gardens as living, emergent spaces in public schools. Within an emergent learning environment, children have unique opportunities to guide their learning and experiences, and thus to some degree, their identities and care ethics. These outcomes indicate that public school garden spaces may be important contexts for growing and engaging the next generation of environmental stewards. Conceptually, there are layers of complexity within any identity formation process. The use of the figured world framework can reveal some of

the freedoms, constraints, and power play taking place in social spaces. These findings will further highlight the need to complicate children's experiences in environmental education, and thus, position the figured world concepts as a useful framework for accomplishing this task in environmental education research.

Summary

In this literature review, I explored how enacting a postmodern view of the child within public school spaces can expand a child's identity tool kit. I also explored child-directed provocations as sites for children to engage in imaginative narratives as they form and express relationships with nature. The blending of these theories revealed possible avenues by which children may develop environmental identities through public school garden experiences. The resulting theoretical intersections were more tangibly mapped through explorations targeted at understanding the process by which children produce environmental identities and enact an ethic of environmental care within a figured world framework. A critical consciousness was applied to the debate surrounding the culturally-created child verses the child-in-progress as it pertains to childhood identities formed within the figured worlds of environmental education. Thus, I critically considered garden spaces as sites for children to truly *become* in the figured worlds of environmental education.

This chapter provides the theoretical grounding for an ethnographic exploration of the roles that child-directed, garden-based experiences and corresponding imagined narratives play in children's environmental identity formation within the figured worlds of public school gardening experiences. Drawing from this literature review, my dissertation research deviates from limiting, predetermined constructions of the child by

exploring the ways children negotiate normalizing, social situations through the use of play and narratives. I position children as knowledgeable about their own lives and surroundings, and I argue that their impressions and perspectives can provide useful knowledge about children as a capable, cultural group. Also, I engage with what the children know or are experiencing in the present rather than who they will become under adult influence (Janzen, 2008). This opens spaces for the inclusion of imaginative narratives in the process of identity-seeking and negotiation within a figured world. Thus, the children's engagement and diverse narratives are studied as tools for not only recounting experiences, but also as a means of self-forming for the children (Bleakley, 2000; Hawkins, 2002).

To contribute to research in environmental education and environmental identity, it was important to experiment with creating garden experiences which provided children with multiple approaches to environmental identity development, as well as multiple means of expressing themselves during this process. The following chapter describes the methodologies I employed to create, study, and analyze the children's new ways of thinking, doing, and being (Usher & Edwards, 1994).

CHAPTER THREE

Research Methods

This study applied an emergent, student-centered model of learning and examined five first grade students' environmental identity formation within a public school gardening program. This study was qualitative in design and in analysis. In this chapter, I outline the methodological approaches taken to conduct this research. First, I detail the challenges of choosing a methodology for my dissertation research. Then, I explain how an ethnographic case study design offered tools for meeting those challenges. A discussion of my study location, procedures, and participants follows. I conclude by detailing the methodological and theoretical approaches I employed to analyze my study data.

Study Design

As the children in this project took up opportunities to connect with nature through emergent, garden-based experiences, the process by which the caring, environmental self developed in the garden space was documented in this work. To fully engage with this documentation, I sought a qualitative research approach which would: 1) Permit close examination of students' participation in garden-based activities; and 2) Promote explorations of the multiple ways in which children identified themselves in relation to the environment. To understand environmental identity through the children's experiences and perspectives, I would need to collect descriptive data from within the garden (Creswell, 1998). To obtain this data, I would need to spend time in the garden, talk with the children, understand the context through which environmental behaviors

were occurring, and review artifacts related to the research. This work would require both holistic and contextual attention, as I would need to take into consideration the garden setting and activities, as well the garden participants and their interactions.

Ethnographic Case Study. To construct meaning from the garden experience by and for the children, an ethnographic case study design was utilized in this research project to examine environmental identity and care development as a sociocultural process. Ethnographic research allows the researcher to gain knowledge and understanding of a particular culture-sharing group, or to uncover and describe the beliefs, values, and attitudes that structure their behaviors (James, 2007). The use of ethnographic methods in this work allowed me to observe and listen to the children, as well as to draw inferences about their garden experiences (Spradley, 1979). James (2007) determined that the use of ethnography is:

> critical to the social study of children. Its key strength as a method lies in the way in which, through close attention to the everyday and familiar through which the social world is both created and sustained, it has enabled the voices of those who would otherwise be silent to be heard. (p. 255)

Ethnography is a research methodology, a set of fieldwork techniques, and a research product. As ethnography is concerned with understanding and describing meanings in social life, it requires thick participation, or sustained involvement in a research site during data collection (Lillis, 2008). It also involves thick description, or the complete capturing of social complexities in the field (Geertz, 1973). In addition, ethnography calls for thick analysis, as it requires the researcher to utilize multiple methods of data analysis (Evers & van Staa, 2010). These thick practices allow the

ethnographer to discover and interpret what is significant about situated practices. As specific social acts and particular moments in time are examined, ethnography captures what these practices mean to the people being studied.

The case study aspect of this ethnography, then, was applied to set the research within the particular boundary of five first grade students within one public school garden (Merriam, 2009). In developing case studies using the ethnographic research approach, inferences are made from three sources: 1) Individuals' words; 2) Individuals' actions and reactions; and 3) The artifacts of individuals' experiences (Spradley, 1979). The use of ethnographic case study deepened my understanding of this particular garden culture. It allowed me to address my research question through more detailed, local accounts of children's experiences in this school garden.

This choice of conducting ethnographic case study research brought with it a new set of challenges. As I acted as a participant researcher in this study, I had to maintain a certain level of reflexivity in my work. To address this need for reflexivity throughout my research practices, I continually positioned myself within the research process, as well as continually re-examined the possible biases or impacts my presence or position of power may have caused. Maintaining a close connection between theory and practice, as well as reflecting in my research journal throughout data collection, analysis, and interpretation promoted the necessary structure and reflexivity required in this ethnographic work.

Reflexivity. In this research project, I believe that my two-year role as the garden teacher at this school site helped to establish a rapport and sense of trust between the school staff, students, parents, and me. In addition, the nature of my previous

connections with populations at the school site may have allowed a partial breakdown of power issues. While the sampled population consisted of individuals with whom I was already an acquaintance, it is possible within this dynamic that respondents may have withheld information or acted differently in fear of confidentiality. However, it is assumed that knowing the children may have allowed the research process to be completed in a more comfortable and illuminating fashion for both parties. I believe the first grade children participating in this study continued to behave in an everyday, relaxed manner in the garden despite my presence in the space as a participant researcher. Furthermore, it may also be in the nature of the student-teacher relationship to reveal a richer account.

Study Site

My dissertation research took place at a public, K-8 school in Northern California. The campus was located in a beautiful setting, nestled in a valley, surrounded by coastal foothills. The school served 735 students during the 2009-2010 school years. Data from the 2009-2010 academic year indicated that the student body was 72% Hispanic or Latino, 15% White (Not Latino), 4% Asian, 3% African-American, and 6% Other/No Response. Data from this year also indicated that 71% of students were economically disadvantaged, 56% of students were English Language Learners, and 14% of students had disabilities. Overall, there was limited diversity within the classrooms at this school during this study, as the majority of the students were Hispanic or Latino.

The demographic composition of the residents in the neighborhood where the school was located did not mirror the population of the school at the time of the study. In fact, this school served a small percentage of students from the local neighborhood, with

most students coming from other surrounding neighborhoods. The 2010 United States Census reported that the neighborhood housing the school had a population of 4,292 residents. The racial makeup was 77.7% White (Not Latino), 19% Hispanic or Latino, 8.2% from other races, 7.1% Asian, 4% from two or more races, 2.1% African American, 0.6% Native American, and 0.4% Pacific Islander. During my time there, I often heard the school referred to among parents in the neighborhood as an "overflow school." This basically meant that it was perceived as the last-stop-of-schools, and that kids that could not get in somewhere else (or their families did not care where they went) attended. This label created a negative image of the school to outsiders that did not necessarily reflect the feelings of those working on the inside.

The district to which the school belonged offered a "school choice" option, whereby parents could elect to send their child to any school in the district which had openings. During my second year of involvement with the school, many neighborhood families pulled their children from the school to send them to other schools in the district. There were various reasons reported for these moves, such as: 1) Wanting a more stable and solid administration, as the school had gone through six principals in ten years; 2) Wanting to send their child to a school that offered music, physical education, *and* garden; 3) Wanting their child to be in a more diverse setting; 4) Wanting their child to have access to newer facilities; 5) Wanting their child to have access to enrichment or gifted programs; or 6) Wanting their child to go to a school that was not in Program Improvement. Of course, there were also "die hard" families who loved the school and "would never leave." These families expressed feeling that the teachers were high-quality and that the bi-literacy program the school offered appealed to them.

This school had its fair share of academic struggles and setbacks, as it did not make Annual Yearly Progress (AYP) during the 2009-2010 academic school year. When AYP is not met for two consecutive years in a consistent content area or on the same indicator, a school or district receiving Title I funding enters into Program Improvement (http://www.cde.ca.gov/ta/ac/ay/). This school entered into its fourth year of Program Improvement during the 2011-2012 school year.

Additionally, during the 2009-2010 school year, this school was ranked at a level three on the Academic Performance Index (API). API is a yearly measure of the academic ability and advancement of California schools, wherein schools are ranked on a possible scale of one to ten. If a school receives a rank of "one," this indicates that the school's API score is in the lowest 10% of all schools in California. Is a school receives a rank of "ten," this indicates that the school's API score in the highest 10% of all schools in California (http://www.cde.ca.gov/ta/ac/ay/). These "failing" labels raised political and social issues at the school and district levels, and brought into question inequities that existed among school sites in the district - perhaps due to the "school choice" option.

While these scores and labels existed, they did not define the culture of the school. The mission at this school at the time of the study was to "prepare students for the future by providing them with an education that encourages intellectual curiosity within a nurturing environment." Supporting this mission, the instructional focus at the school evolved from a firm belief that every student can learn. The school demonstrated a commitment to providing educational programs for each student through offering many special programs, including a dual-language program that gave students the option to learn both English and Spanish. In addition to academic achievement, the school

encouraged students to develop self-discipline and maturity based on an understanding that they are individually responsible for their own attitudes and behavior.

Despite the lack of funding and the academic struggles faced by the district at-large and the school site at the time of this study, the teaching garden had been a staple and source of pride at this school for many years. This is partly what made the site so interesting and the data so rich. At this school site, I had access to many students and families who were receptive to garden-based activities and my research. The school garden program was heavily supported across all populations and cultures; thus, this site provided a unique opportunity for me to observe a diverse sampling of children's identification with and care for nature in an established school garden. Further, the social nature of learning and identity developed in this study aligned with the structure and culture that was co-created by the children in the garden during the research process. The garden's structure and culture will be discussed in further detail in chapter four of this document, as this was descriptive data that was generated and analyzed during the study itself.

Study Procedures

Access. To conduct research at a school in this district, the school board had a protocol that researchers needed to follow. It first entailed submitting to the District Superintendent a written research proposal which included: 1) The researcher's name and academic credentials; 2) The project's purpose; 3) The study's methods of investigation; 4) The expected participation required from teachers, children, or school staff; 5) A description of how the results will be used; and 6) The potential benefits from the project to the school(s) or the district. Following the Superintendent's review and

approval, the researcher was permitted to seek permission from the school's administration. Upon the principal's final permission, the principal was required to sign and send a letter back to the Superintendent detailing the process which was agreed upon between the researcher and the school site administrators.

Sampling. Following the Superintendent's approval for this study, a series of research steps and guidelines were set and agreed upon by the school administrators and me so that the research could be conducted. These steps were carried out verbatim to maintain compliance with district guidelines. At this site I had access to all students in kindergarten through eighth grade. However, for the purposes of this study, I wanted to focus my data collection on one grade level of students in the primary grades. To make this decision, I drew from informal, observational data collected on students in the school's kindergarten through second grade classrooms during the year and half before the study began. From this observational data, I selected the first grade classrooms for my formal data collection. I chose this group because I had formed a particular bond with these children while they participated in garden classes during their kindergarten year. Also, I was interested in continuing to represent young children in my work as an extension of my pilot study.

Initially, the first grade teachers were notified of the garden study, and they were asked to provide the researcher with a class list. Four students were randomly chosen from three different class lists, for a total of 12 students in the initial sample. This random sampling step was required by school administration as a means of demonstrating fairness to parents regarding who was selected to participate in the study and why. It was believed that many parents would want their child to participate in the study, due to the

parent's level of involvement in and financial support of the gardening program. It should be noted that participating students did not receive any extra attention or time in the garden. All students had a weekly garden class and spent the same amount of time in the garden each week, regardless of their participation in the study. In fact, the students were not able to tell who was participating in the study and who was not.

The random sample of twelve initial students was then ranked in order of researcher interest. The researcher then purposefully selected a group of five focal students for more in-depth case studies. These rich student cases were chosen due to the compelling intersections they exemplified between formative garden experiences and: 1) Reported conservation or gardening activity at home and at school, or a reported lack of participation in conservation or gardening activities at home or at school; 2) Conceptual understanding about gardening and environmental issues, or a lack of conceptual understanding about gardening and environmental issues; 3) Social exposure to the garden program before participation, or a lack of social exposure to the garden program before participation; and 4) Home language. They were also chosen with a desire to maximize diversity in the sample and/or based upon teacher input.

Consent/Assent. Following this selection, the researcher contacted the children's parents regarding their child's participation in the study. The research protocol was shared, potential data sources were explained, and the parents had the opportunity to ask questions. It was also explained to parents that names would not be used and that they could withdraw their child at any time for any reason by speaking with me. All five parents agreed to allow their child to participate, so a paper permission slip was sent home with their child (see Appendix A). After the consent forms were administered, the

parents had as much time as they needed to review the documents. In addition, I made myself available to answer any questions the parents had concerning the study in person, over the phone, or via email. These slips were returned to the classroom teacher, and then given to the researcher.

The students, upon turning in a parent permission slip and understanding the study to some degree, then provided verbal consent/assent to participate in the study (see Appendix B). This occurred via the researcher explaining to the children the purpose of the study, ensuring that they were comfortable with the process, and then asking them to verbally agree or disagree to participate. It was also explained to the children the types of information that the researcher might use as data, and that their names would not be used. Also, they were told that they could withdraw from the study at any time by speaking with the researcher.

Data Collection. Formal data collection began after consent and assent. Targeted students were observed during their classroom's weekly garden time, as well as during any optional daily, lunchtime sessions they choose to attend. As I approved the list of students who attended the lunch sessions each day, it was my aim to include targeted students whenever possible. When regular classroom observations of the targeted students were deemed valuable, these were arranged with the teacher as well. I began formal data collection in January and continued through May. This four-month timeframe of formal data collection encompassed a portion of the both the rainy season, or the planning phase, and the spring season, or the planting phase.

Confidentiality/Anonymity. In this study, all participants were assigned an alias. The only documents containing actual names and signatures were the consent

forms. The consent forms linking students and teachers to their alias names were stored separately from all other materials in the home office of the researcher. This information was locked, only accessible to the researcher. At no point during the entire research process were real names used.

Data Sources

Student data emerged from normal classroom experiences. The data sources collected for the in-depth, student case studies included:

1) Student-student and student-teacher talk: Student and teacher talk in the garden was audio taped as a primary data source in this study. I primarily recorded talk that occurred as students planned or worked on a project, although talk was also recorded during more structured question and answer periods or during some class discussions. These conversations captured students' understandings of themselves in relation to the environment, as well as their experiences and stories during gardening activities. These conversations also captured how students felt about garden activities and the types of environmental activities they participated in outside of the garden. My involvement in the students' shaping and iterating of their perspectives was also captured.
2) Field notes: Field notes from participant observations captured detailed descriptions of the program's day-to-day activities, the students' participation and interactions, and researcher interpretations of student and teacher conversations. These notes were anonymous and recorded in my journal during and after class sessions.

3) Student journals: All students kept a garden journal as a part of their regular garden classes. Assenting students with parent consent gave me permission to copy and study pages from their journal, which were anonymously used. Journals captured students' feelings about their experiences in the garden and how they connected these experiences with their everyday life. The journals included sketches, drawings, poetry, reflections, doodles, and dreams.
4) Student-produced artifacts: Artifacts provided content data on the students' activities as well as data regarding how the students worked in the garden space. Artifacts were both the real and imagined products of the children's experiences.
5) School artifacts and documents: School artifacts and documents got at the history and structure of the garden. This included the recursive provocations developed, as well as any research that I drew from to inform future provocations.
6) Researcher journal: My research journal aided in my reflexive practice; served as a critical space to examination possible bias; provided a personal outlet wherein to reflect on the research process; supplied a place to analyze data and to discern research findings through reflection; and supplied a space to consider and discuss relevant literature.
7) Photographs: If the students were engaged in a visually interesting moment, a photograph may have been taken. Photographs captured moments of engagement and interaction, which were reflected upon at a later time with the students and teachers. The students' faces were not photographed.

When questions arose about the data or when I wanted to further investigate a particular data source, the students or their teachers were consulted for these purposes.

Data Analysis

Once field work commenced, the data was analyzed using a variety of methods and through a variety of theoretical lenses. The first step in my data analysis was typing up all of my field notes and researcher journal entries into Word documents. I also listened to and personally transcribed all pertinent audio files into Word documents. Throughout this necessary process, I began to form my initial impressions of the data while I analyzed the notes line by line. This process allowed me to essentially revisit my research experiences, reliving them in a way that allowed patterns to naturally emerge within the observational data (Emerson, et al., 1995). My impressions and questions during this preparatory phase were recorded into analytical memos. These memos were referenced over and over again during the cyclical process of data analysis.

After this initial step, relevant data was then analyzed in three phases. Phase one consisted of preliminary content analysis for each data source, including organizing transcribed data, multiple and thorough readings, revisiting analytical memos, and initial coding. Phase two consisted of finding emerging patterns within each data source and then triangulating data sources to develop a case study for each focal student. The constant comparative method of data analysis was employed here, which involved the identification and comparison of incidents, events, and activities until categories emerged (Creswell, 1998). Once categories were established, I saturated each category with data from the transcripts and field notes, specifically focusing on thoughts and perceptions relevant to the student cases and the research question. Phase three consisted of a contextualization of the student cases to address my research question. This entire

methodological process for examining data permitted me to draw conclusions or themes pertaining to the data (Emerson, et al., 1995).

Figured World Lens. The application of the figured world concept to school gardening practices provided an over-arching theoretical lens through which to study how and why children negotiated power structures, took-up environmental identities, and enacted stewardship behaviors in the worlds of school-based environmental education (Holland et al. 1998; Jurow, 2005). The exploration of identity development through use of the figured world lens considered the power that exists in communities, opened up notions of discourse, and allowed the child to discover the plurality of the self. Thus, it invited new means of discovering and expressing the self in ways that were not prescribed.

Via this theoretical lens, as young children interacted with one another in the garden through participation in environmental experiences, their identities within the experiences were negotiated. The figured worlds of the garden were organized by the "cultural means" that were available within the diversity of the social space (Holland et al., 1998, p. 53). These means mediated the complex negotiations that occurred within the garden, and were both controlled by and controlled subject positioning (Burr, 2003; Elliot, 2005). The processes and negotiations that delineated the garden space were also "partly contingent upon and partly independent of other figured worlds…and larger societal and trans-societal forces" (Holland et al., 1998, p. 60). As the children were drawn into and participated in aspects of the garden world, I could investigate whether children's behaviors "manifested the ascription of new meaning and the favoring of certain activities and practices over others" (Urrieta, 2007, p. 11).

As data collected in this project was unpacked through the lens of figured worlds, I employed a range of methods to support specific tenets of this framework. Studying how figured worlds are created or how they evolve over time required a combination of methods that enabled me to examine the children's actions, interactions, and use of narratives (Skinner, Valsiner, & Holland, 2001). To analyze the relational, participatory and dynamic nature of environmental identity development, specific methods for data analysis included ethnographic, discourse, and narrative methods.

Ethnographic Methods. Ethnographic methods focused on identifying trends in the naturalistic data (Emerson et al., 1995). The rich, descriptive quality of field notes, for example, helped to reveal the social context, students' characters, and ways students positioned themselves and were positioned as they participated in the garden activities. I also examined patterns of participation through students' identification with the program, their degrees of engagement, and their behaviors and actions (Holland et al., 1998). The development of codes and categories was an iterative and reflective process here, occurring throughout data collection and analysis (Hammersly & Atkinson, 1995).

Discourse Analysis Methods. The discourses of my informants were another critically important layer of analysis. An ethnological approach depends on language and discourse and must account for processes of making meaning that are activated in interaction. Smith (2001) argues that "language is conceived as more like a zipper interlacing diverse subjectivities than as units of meaning traveling from one individual to another" (p. 178). Therefore, my research acknowledged the importance of language and communication by examining sociocultural linguistic interactions between participants (Bucholtz & Hall, 2005), every day and canonical ways of talking (Warren et al., 2001),

and Discourses used to describe oneself and others (Gee, 1989). Especially relevant in this garden context, Discourses represented more than the technical language of speaking; they also included gestures, thoughts, and values that belonged to the community (Gee, 1989).

Drawing upon Gee's (2000) notion of D-Identities (Discourse Identities), I employed Discourse analysis to ascertain the specific types of identities that students constructed for each other through discourse and dialogue. I looked for patterns in the "way people treat, talk about and interact" (Gee, 2000, p. 103) with others to help reveal these D-Identities and how they constructed environmental identities. In addition, I used Olsen's (2006) sociolinguistic analysis as a guide to interpret both the direct and indirect meanings in students' speech. Direct meanings referred to the assumption that what a speaker says is the intended and literal meaning. Indirect meanings referred to the assumption that there were intended meanings that existed beyond what was directly conveyed by the speaker. These meanings existed in the unspoken rules of conversation and were analyzed in relation to the social context (Grice, 1975).

I also employed discourse analysis to examine students' use of everyday experiences and informal language to make sense of environmental content (Warren et al., 2001). Specifically, I examined when the children used every day and canonical discourses and how students used these discourses together to understand and describe ecological and gardening content in relation to themselves. Practical knowledge (including discourse) of an activity or a practice is important in identity development (Holland et al., 1998). Learning and speaking the language of environmental science

may be one way that students come to identify with the environment or with environmentalism.

Narrative Analysis Methods. I also employed narrative methods to analyze the data, as storytelling is a means through which people construct identities (Riessman, 2008). From pilot interviews and observations, I found that students frequently talked about their experiences by relating a story. I also observed students telling stories to each other during class, either directly related to their projects or to their lives outside of the garden. These stories depicted students' interactions with other people, as well as their thoughts and feelings about an incident. Narrative methods helped reveal not only the content of a story through thematic analysis, but also the "how and why incidents were storied" through dialogic and performance analysis (Riessman, 2008, p. 11). In other words, the use of these methods revealed how the children positioned themselves and each other. For this reason, narrative analysis was valuable in understanding students' relationships with their social groups and with the environment during the construction of their environmental identities.

As each data source was analyzed through one (or a combination) of the methods previously described, it was also analyzed for particular features, such as: Direct and indirect meanings; identity traits distinguished in written and spoken dialogue; content and speaker performances; environmental content; connections to self; trends in naturalistic data; emerging codes and categories; every day and canonical language; and/or subjectivity and positioning. These features enabled me to realize the data in relationship with the literature, as well as to build the student cases. Table 1 indicates how each data source was analyzed in this work:

Data Sources	Analytic Method(s)	Analytic Features
1) Student-Student and Student-Teacher Talk	Discourse Analysis; Narrative Analysis	Direct and Indirect Meanings; Identity Traits Distinguished in Dialogue; Content and Speaker Performances; Environmental Content; Connections to Self
2) Field Notes	Ethnographic Methods	Trends in Naturalistic Data; Emerging Codes and Categories
3) Student Journals	Discourse Analysis; Narrative Analysis	Direct and Indirect Meanings; Identity Traits Distinguished in Written Dialogue; Environmental Content; Connections to Self
4) Student Produced Artifacts	Discourse Analysis	Every Day and Canonical Language; Identity Traits Distinguished in Written Dialogue; Environmental Content; Connections to Self
5) School Artifacts and Documents	Discourse Analysis	Direct and Indirect Meanings; Environmental Content; Subjectivity and Positioning
6) Researcher Journal	Ethnographic Methods	Trends in Naturalistic Data; Emerging Codes and Categories
7) Photographs	Ethnographic Methods	Trends in Naturalistic Data; Emerging Codes and Categories

Table 1. Analytical Methods.

Triangulation/Validity. Validity was established in this research through the use of various triangulation practices. Multiple methods were utilized to gather data, multiple data sources were collected, and multiple subjects were called upon to review the data (Denzin, 1970). As a part of this triangulation process, the researcher met with all three first grade teachers over the summer to discuss the preliminary analysis of the data and to gather any additional data they could offer. The teachers were a valuable group to access in realizing the richness of the student data. Collectively, they held vital information and

understandings regarding the students in the study, and they attended all garden sessions with their students.

Teacher consent (see Appendix C) was obtained by the researcher through a signed consent form before this process. Here, the teachers agreed to participate in one audio-taped, focus group meeting to review the data collected throughout the school year. This was an untimed meeting with an open-ended format, but guiding questions were utilized to facilitate rich discussion of the data (see Appendix D for sample questions). The teachers indicated the length of the meeting based on their availability and their level of engagement in the process.

During the focus group session, the researcher first summarized the initial analytical memos and shared the preliminary student case studies with each first grade teacher. Then, feedback, comments, additional data, and/or data clarifications were offered by the teachers on each student case to alter or strengthen the student cases. This feedback process was iterative, recursive, and exhaustive, persisting until the focus group had fully verified and/or altered the researcher's analytical memos and initial interpretations of the data on each student. In the case that a discrepancy was indicated among the participants on a data point, the researcher would encourage discussion until the group came to a consensus. New perspectives were offered by the teacher-informants to increase the accuracy and validity of the student cases. The teachers contributed deep insights into students' home lives and histories, writings and drawings, social interactions, and relationships within and with the garden. These insights both validated and re-framed the researcher's initial data interpretations.

In the chapter that follows, I reveal and discuss the student data collected in this garden space – a space where caring, environmental selves were *becoming* before my very eyes. I also attempt to tell the rich and complex stories of the five student cases. From this data, the research question proposed at the beginning of this study is answered.

CHAPTER FOUR

Results

This chapter contains the analysis of ethnographic data I collected for nearly two years as a teacher-researcher in an emergent, school garden space. By research design, the data included supports the theorization and analysis of this school garden as a figured world (Holland et al., 1998). The data presented herein informs a specific research question, which guided and defined the research context: How do students produce caring, environmental selves as they participate in emergent, garden-based activities? Thus, this chapter highlights the means by which five children defined and produced caring, environmental selves as they participated in the figured world of an emergent, public school, garden space.

In this research, the garden was conceptualized as a figured world because it was a social "world" that the children participated in order to "figure" out who they were and how they related to others within and outside of it (Holland et al., 1998). The use of the figured world framework in this research was useful in capturing the complexity of the postmodern child and her experiences in the garden (James & Prout, 1997; Malaguzzi, 1994). It considered the diverse histories-in-person that the children brought into their experiences, as well as the impact of the garden structure, activities, and teacher on the children's environmental identities-in-practice over time. Thus, it allowed for the validation and examination of students' histories and cultures, as well as the social context (Holland et al. 1998). These all proved to be relevant factors in children's environmental identity production.

To more closely examine the children's individual identity choices and processes of environmental identity production, the figured world framework lent itself to the use of a child-centered, emergent format in the garden wherein the complexity of children's choices and experiences could be analyzed (Forman & Fyfe, 1998; Jones & Nimmo, 1994). It called for a structuring that would provide spaces for the children to position themselves in relation to nature, or opportunities for them to author environmental selves which improvised upon their histories-in-person. It lent itself to a format where students could follow their interests, exercise choice, negotiate meanings, and participate in different activities than their classmates. Thus, I chose a format for the garden which was inspired by the Reggio Emilia approach (Gandini, 1993; Malaguzzi, 1993). Within this postmodern method to teaching and learning, the children and I engaged in an ongoing, recursive process of developing learning and social experiences in the garden, and thus, our environmental identities. The choices students made, the ways in which they expressed themselves through diverse narratives, and the artifacts they created and leveraged in this process became moments of identity negotiation (Ahn & Filipenko, 2007; Brooker, 2006).

Further, the figured world framework went hand-in-hand with an ethnographic case study methodology (Emerson et al., 1995). This allowed me to focus on researching the production of children's environmental selves-in-practice in this particular context over a period of time. As I was motivated to capture the moments during which children came into, expressed care for, or connected with the garden space, this framework also allowed me to validate a variety of narrative expressions and identity movements (Bloome et al., 2003; Farquhar & Fitzsimons, 2008). Thus, my data collection was

focused on the moments wherein I witnessed the children taking up environmental identities within the complex intersections of personal history, culture, social context, and power (Holland et al., 1998). These moments were unique to each child, as they represented the means by which the children made sense of the garden and their place within it.

Within this chapter, I report on both the garden space and the student participants under study in the space. My role and aims as the garden teacher are first explored, as these impacted the children's stories and identity choices. Then by describing the garden space, or what was valued and done in the space, I provide an understanding of the identities available to children in this context. As I move to exploring the children's participation and movements within the space, the processes by which environmental identities were taken up within the figured world of the garden are framed in the context of participants' lives. Through the use of ethnographic, discourse, and narrative analysis, I consider the children's use of diverse narratives and creation of garden artifacts as acts of self-positioning (Gee 2000; Riessman, 2008; Warren et al., 2001). Herein, I highlight aspects of students' garden experiences that I propose produced caring, environmental selves (Clayton et al., 2003; Noddings, 1984).

At the conclusion of the chapter, categories that emerged across the five student cases are described as they were revealed in student data and as they relate to the theoretical frameworks of the research. These are presented as a means of characterizing the experiences of the children and addressing the research question. As a part of this process, participant data was compared within and across cases to summarize the means by which students took up an ethic of environmental care in the figured world of the

garden, not to generalize students' experiences or identities (Glaser & Strauss, 1967). The categories were then condensed and collapsed into overarching themes, or assertions, which further address the research question and support the literature.

The School Garden as a Figured World

In the context of this research, the school garden was conceptualized as a particular figured world. Notions of students referencing, utilizing, or leveraging aspects of the garden were conceptualized as students participating in the co-construction of that world. As the figured world of the garden was shaped by those participating, so were the participants simultaneously shaped by the figured world of the garden. Who was there, what we did, and what we said contributed to the environmental identity possibilities within the space (Holland et al., 1998). Active participation and personal, caring engagement in the garden world was theorized as participation and engagement in the creation of an environmental self (Clayton et al., 2003; Noddings, 1984). This process was encouraged by the garden's structure, and it was expressed through the children's diverse narratives.

Each individual involved in this study and garden-world brought their own expectations, culture, and stories to the experience. The means by which the children were able to participate and connect during their experiences was influenced by their cultural and personal histories-in-person, and it was defined by the particular social context (Holland & Lave, 2001). Participation in the figured world of the garden provided the time and space for the children to reposition or position themselves in relation to the environment through the creation and leveraging of artifacts and personal narratives. The structure of the garden and the emergent nature of the experiences

allowed the children to participate in the process of shaping the garden world into a space where they felt a sense of personal belonging (Jones & Nimmo, 1994). The garden provided a space for the children to negotiate many narratives or stories, some about nature and some not, into a personal story or ethic. The children came to be in the figured world of the garden through the active process of negotiating their own stories about the garden and their places within it (Bloome et al., 2003). The children were growing something while they were growing themselves.

To begin to understand the complex, layered relationships that students formed with nature in the school garden context, I examined and framed all data through the figured world framework (Holland et al, 1998). I invoked this framework to: 1) Explore all environmental identity possibilities afforded to students within this particular context; 2) Explore how students' sense of themselves in relation to the environment was produced through the social interactions and discursive practices of a public school garden (Rubin, 2007); 3) Unearth the seen and unseen forces behind why and how the children came to care for nature through their histories-in-person, relationships, and experiences, including the impact of the teacher/researcher on identity outcomes (Holland & Lave, 2001); 4) Complicate children's stories of environmental identity production in environmental education and garden-based literature (Janzen, 2008; Malone, 2007; Wake, 2008); and 5) Purport the figured world concept as a valuable framework to utilize in environmental identity research.

Utilizing the figured world framework in data analysis called for a reporting on the social forces which took part in the initial shaping of the figured space. This provided a starting point from and through which all other data emerged. In an attempt to provide

a sense of the garden space, initial results were analyzed in the first phase to attend to the following sub-questions pertaining to the garden structure and teaching approach:

1) What were the goals of the garden program?
2) How were learning experiences structured in the garden to support these goals and to allow for children's environmental identity production?

This process begins with detailing my ideologies, role, and objectives within the garden structure, as I was the lead teacher in the space and one common thread running through all experiences. Since I expressed value for environmental behaviors as an environmentalist and educator, my perspective had an impact on what was valued in the figured world of the garden (Malone, 1999). Additionally, I provided the lens through which all relevant data was selected and will be reported. Examples of activities carried out in the garden will then provide a sense of the garden space, as well as highlight the possibilities that children had to develop a sense of environmental care and belonging in this context. Next, the school community's response to environmental education explains an additional ideological framework shaping the garden world. Environmental activities were valued at this school and in the first grade. These factors all comprised students' histories-in-person that they brought into their garden experiences. Finally, utilizing data pertaining to the garden, the school garden itself will be described.

Ms. Megan, the Garden Teacher.

Picture 1. Self-portrait in the garden, 3/22/12.

As the garden teacher, I had many personal objectives and aims for the garden space which supported both these ideological frameworks and the school's goals. These objectives included: 1) Increasing students' environmental awareness by providing experiences to demonstrate to children how gardens and people fit into the natural environment. Activities that supported this aim included learning to compost, identifying garden insects, and observing seasonal changes; 2) Increasing students' environmental ethic of care by spending quiet time sitting and reflecting in the garden space. The activities which supported this aim included magic spaces and open-writes in the student journals; 3) Improving students' understanding of plant science. This aim was supported through provocations and activities that taught and reinforced basic plant science; 4) Developing students' indoor and outdoor gardening skills. This was achieved through the propagation of plants indoors and planting and maintaining outdoor vegetable garden beds through harvest; 5) Increasing students' consumption of fruits and vegetables. This was accomplished as children tasted fruits and vegetables grown in their garden beds and were introduced to others they may have never tasted; and 6) Improving children's

nutritional habits. This aim was supported as children tasted a variety of vegetables and fruits and learned about important nutrients and habits for healthy eating.

As the Garden Teacher, I also had many roles at the school and in the garden, including but not limited to: 1) Managing the school garden and the rotation of garden beds; 2) Facilitating weekly garden time for all Kindergarten through fifth grade classes; 3) Supervising and helping to plan students' garden provocations, as well as other general garden activities such as seed saving, planting, harvesting, and cooking; 4) Increasing the entire school community's involvement in the garden, as well as coordinating outside volunteers and programs; 5) Planning and preparing for garden work parties; 6) Procuring and maintaining necessary tools and supplies; and 7) Coordinating class events, during which students would occasionally prepare food and serve each other.

Within these objectives and roles, I felt an overwhelming sense of responsibility as the garden teacher. I often found myself getting bogged down by my duties as a professional, at times losing sight of what this whole gardening thing was all about. Thus, out of a growing need to simplify my roles and objectives as the garden teacher, I eventually arrived a more concise positioning of myself: To oversee that each child gained a personal sense of belonging in the garden space for the purposes of education and personal empowerment (Noddings, 1984; Sobel, 2008). In other words, I wanted to promote the types of activities and structuring that would allow the garden to become a valuable part of each child's identity. I believed that the powerful feelings associated with a sense of personal belonging in the garden could awaken them to the power of nature experiences in their own lives. It was my hope that as children continued to positively experience nature in the garden over a sustained period of time, they would

benefit from and form a personal relationship with it. This participation would allow their identities to shift or to be remade to incorporate aspects of environmentalism, which could denote a sense of care and compassion for nature (Noddings, 1984; Thomashow, 1996).

This focus on belonging and environmental identification then set free my desire to try to make the children feel nurtured and empowered within the garden space. I hoped that as children felt like they were part of a network of caring, they would build trust in me and the garden experience. Then, they could come to feel included, secure, and safe; thus, experiencing feelings of belonging and love within their experiences. From this space of belonging and love, the children would be able to form or establish a sense of relatedness with the garden space and deepen their caring relationships (Noddings, 1992) with and within the space. They would feel that they had an open invitation to enter into the figured world of our garden; they could bring value to it, and they could receive value from it. By promoting these possibilities, I also wanted children to develop a sense of ownership and kinship with the garden. Their participation in the garden and our community would give them an important stake in the outcomes of the garden's goals, another aspect of producing an environmental identity.

It should also be noted here that I had additional hopes for the students by choosing to focus on fostering a sense of belonging in the garden. It is my belief and experience that nurturing a sense of belonging in children can also lead them toward a desire for greater generosity and altruism in their communities. The virtue of generosity shifts the priority from material possession and self-interest to the welfare of the community and its common goals and interests. This further strengthens feelings of

belonging and community, and I believe, just makes life more meaningful. Additionally, I assert that belonging allows students to develop a sense of power in their lives. While being a part of something can have personal benefit, it is also linked with responsibility for decisions made and actions taken. This loops the individual back into her community and surroundings, further strengthening these bonds.

To strive for these heartfelt aims in the teaching garden, I first gave special consideration to my own code of ethics on teaching and learning in the outdoors. Then, I researched teaching approaches that could open possibilities for environmental identity production. As I examined my feelings and ideas around structuring the garden, I challenged my goals with an over-arching question: If I were to create the type of space where all of these aims might be possible, what would it look and feel like to a child? This question focused my attention on the need to theorize and construct research-based frameworks for student management, student-teacher relationships, and garden-based activities. Carrying me through this development process was the notion that my ethic of care for nature and children could build or inspire some of that same care in others. Also, I was excited to challenge myself as a teacher and researcher and to learn new things with the children in the teaching garden.

Thus, I began to focus on student management as a foundational and unifying force to shape the educational structure of the garden space. As I considered the networks of my students' relationships and how to mend and improve them, I realized the need to manage my students with an ethic of care which allowed me to de-emphasize my own authority. I wanted students to be able to experience governmentality and an opportunity to evaluate their behaviors against community norms. I wanted them to

experience their own independence and self-governance and be afforded opportunities to share authority in a bottom-up approach. So, when students challenged my authority and the boundaries of the type of community found at the garden, they were met with an ethic of care which focused on repairing relationships instead of punitive punishments. This structuring changed our student-teacher relationships, and later led to a more student-driven approach.

When gardening, students would often play in the soil, examine insects, and inquire about topics that interested them. I did not encourage students to "stay on task," but allowed them to experience ideas as they arose and interested students themselves. There were no punishments or condemnations for further inquiry into students' interests that might cause a delay in the work of the garden. Instead, when students' interests were peaked by an animal or plant, students were afforded opportunities to explore and observe the objects of their inquiry. This allowed students to play in the soil and mud, to run after a butterfly, and to stop the garden activity to ask questions of the garden teacher or other students. In this sense, the garden was not a setting that was guided by traditional ideas of efficiency and discipline, but by students' own interests and creativity. This afforded them opportunities to explore and experiment in the garden on their own, so as to develop relationships with plants and animals and to learn about things that interested them - not just interests passed down from their teachers in traditional classroom settings (Sobel, 2004).

Overall, I allowed for a degree of independence and emergence as students explored the garden environment, participated in the gardening activities, and expressed their feelings. I asked students for input on which vegetables and fruits to plant, how to

organize garden beds, and what activities and topics they would like to explore during their gardening class periods. If an idea arose on how to make their garden experiences more fun or fulfilling for them, we discussed these ideas and voted on their implementation. In the garden, students were not expected to meet goals in the traditional sense of learning how to do something and then assessing their performance. Instead of viewing myself as a teacher who presented environmental content to children, I viewed myself as a guide who provided some information and then allowed my students to experience it in their own ways and at their own pace.

Subsequently, I was now being provided with the opportunities I had sought to grow as a teacher and researcher. This was not how I had typically run my indoor classrooms. Further, my ideas about lesson planning had to shift as well. My lessons in the garden could not really be as scripted as they may have been inside. Instead, it felt more appropriate to facilitate discussions about a topic by using a general outline and a format that was flexible, embedded into the garden context, and emergent in nature. In a typical day as the garden teacher, it would not be unusual for me to play-out various roles, make up songs, personify things in nature, give names to living and non-living things, read, write, create, dance, cry, meditate, play, sweat, laugh, hug, get dirty, cook, eat, watch something be born, watch something die, or marvel out loud at the beauty of it all. Overall, I did my best to impact students' lives and beliefs about the natural world. I used my power to mold a space where belonging in and with nature could be safely explored. I approached the position with purpose, humility, and a genuine desire to connect with students, and I modeled what I feel is right and wrong for the Earth. These were my most important roles as the garden teacher.

Within my theoretical framework, I must acknowledge the impact of my ideologies on the production of the children's identities-in-practice. My position as the garden teacher within the figured world of the garden purported a set of environmental ideologies with which the children could choose to identify with or not. For the children in this study, the concept of identity was sometimes as simple as "I want to be like you," or "I don't." In this sense, I became one benchmark for environmental identity and environmentalism in the children's lives (Carson, 1956). I also became a source from which they could draw new artifacts for identity improvisation (Penuel & Wertsch, 1995). I became a part of their evolving, environmental histories-in-person that they could activate to negotiate new identity configurations in the garden as a first grader, or later in life (Holland & Lave, 2001).

As my position and the garden itself were nested and nurtured within the broader school community, I now explore the community forces which structured the figured world and impacted student outcomes. The ideological frameworks and power positions of administrators, parents, and teachers also shaped the space and impacted students' identity choices.

The School Community: Administrators, Parents, and Teachers. The garden teacher position at this school was funded by the Parent Teacher Association (PTA). There were many fundraisers held throughout the school year to raise funds for the garden teacher's salary and to put in place a garden fund for the year. Students at the school were not offered any other special activities throughout their school day aside from their garden class; no weekly physical education, art, or music time. This was not because administrators, teachers, parents, and students did not support or want these other

activities at their school. It was just that funds and instructional time were limited, so they had to prioritize their needs and wants. They wanted a garden. In fact, they had been picking garden over everything else for about ten years.

I was never able to decipher who ultimately drove the yearly decision for the garden. Although, while I was there, it appeared the chain of command went something like this: Children, parents, teachers, and then administrators. There was no question that the majority of the children loved the garden, and there was no doubt that their enthusiasm about it was contagious. The parents could not ignore their children's excitement, so they encouraged the school to offer something their children truly enjoyed. In turn, they agreed to work hard to raise the money for the program. The teachers supported the parents' wishes for their children, and most enjoyed the garden themselves. The administrators complied, because everyone else really wanted it. As the principal once shared with me, it didn't matter if she wanted the program or not (she did). She felt that the program would only be sustainable if she was the last person to be convinced of its merit.

After spending two years in the community and becoming a part of the school culture, I did develop my own theories as a researcher about why the school garden was prioritized there: 1) The garden was a source of pride and a status symbol for the school. Although they were one of the lowest performing schools in the county, they were known among the schools to have the nicest garden. The garden had been featured in both district newsletters and local newspapers. It was considered both a resource to draw in new students and to keep old students who might have been considering a transfer to another school. The garden had become a positive part of the school's image; 2) The

garden brought an ethnically-diverse community together. Always well-attended, the weekend garden workdays were festive parties full of diverse faces, music, food, laughter, and fun. Gardening, harvesting, and sharing a bounty were activities that crossed all cultural, political, and financial boundaries. For some, participation in the garden became a gateway for getting involved in other school activities and efforts; and 3) The school community truly valued garden education and saw time spent in a garden as valuable. They believed there was something to gain from learning in a garden at school, and they felt it was relevant to their lives. If there wasn't already a sense of environmental consciousness present in some stakeholders, then they appreciated the impacts and outcomes of the garden experience.

While all of those reasons did play an important role in the upholding of the gardening program, it struck me time and again how much the school community did rally around environmental causes. There were many environmental initiatives already happening at the school when I arrived, including a recycling-for-cash program held on Friday mornings, a lunch composting program, a garden supported, organic salad bar in the lunch line, paper recycling in classrooms, community-supported bike to school days, an environmental club, school beautification days, and PTA-sponsored, garden work parties. In the spring, a nearby environmental non-profit offered a program for teachers to trade in their chemically-based cleaning products for a free supply of green cleaning products and training on the importance of eliminating chemicals in classrooms. In addition, the principal hired a community-based, environmental organization to conduct a waste audit of the school that year. At the end of the year, the principal appointed me to design and plant an orchard in the middle school quad over the summer.

Of interest to my study, the first grade students were being reared in a particularly, environmentally-conscious environment. Three out of four teachers on the first grade team displayed a sense of environmental awareness and stewardship in their classrooms and personal lives. As a part of their initiatives and interests, first grade students experienced raising chicks and selling them to farms, spawning trout and releasing them in a lake, participating in a gleaning day at an organic farm, and cooking in a solar oven they purchased with grade-level funds. The teachers organized environmentally-themed activities and field trips throughout the year. The students went to Muir Woods, Muir Beach, and picnicked at Phoenix Lake. All of the classrooms had their own outdoor growing boxes. One class kept a blog about their environmental efforts. Another class' teacher was even the former garden teacher of many years. With these attitudes about environmental stewardship present in the community and in the first grade, I felt confident that my ideas for growing and researching the garden program would be supported. I felt the garden could build upon and enhance students' environmental experiences and further impact their environmental identities-in-progress.

As I pitched my garden program ideas to the school administrators in an initial meeting, I began by posing a risky question: In the absence of clean air and water, will it really matter if our students are passing standardized tests? No doubt, this was a controversial thing for a teacher seeking administrative approval to say. But I wanted to lead with something that would shock them a bit, as well as hopefully allow them to somehow separate garden practices from traditional schooling practices. I was coming in with a bit of an agenda, and I needed to test the waters. At this point, I knew enough about who I was meeting with to know that this question would trigger an interesting

discussion. After all, despite the many changes that had occurred in the school administration over the years, the past three principals had supported the garden program for over ten years. It almost seemed like it was part of the job description at the school: Non-gardeners need not apply.

In the beginning, the principal and I went back and forth as we attempted to reach a compromise on the purposes of the garden program and the structure we would use. There was no curriculum provided to me, nor had the district adopted one to date. I wanted the students to feel like the garden was theirs to own and define, and I wanted it to feel less rigid to students than their regular classrooms. I wanted to include the arts, slow down the pace and feeling of time in the space, avoid talking about standards or tests, and allow the provocations to be emergent in nature, as a garden is itself. The principal supported my ideas, but she explained that she was also pressured to make the garden lessons look more standards-based at that time. Due to the "failing status" of the school, any time students were pulled out of class for a "special activity" and thereby, lost instructional minutes in the classroom, there needed to be "direct educational value" to the activity in that it that could be directly related to a language arts or math teaching standard.

During this next phase of approval, I focused on program accountability in the eyes of the public school system. I made all of my aims for the garden program transparent, and I began to envision how to better meet the needs of all stakeholders. As I was required to write a proposal and to seek approval from the principal and district office, I considered the non-negotiables and took a new direction. I agreed to note and record all of the science, language arts, and math standards that were covered in the

garden throughout our garden provocations and activities. The emergent nature of the activities was not hindered by this at all. Speaking, listening, and writing skills were practiced in most class sessions already. Then, as other provocations emerged and I considered the skills that were acquired during these lessons, I easily connected some aspect of what we were doing to state standards. With the small concession that I would find and make known the connections between our emergent lessons and relevant state standards, I maintained flexibility on the order and spontaneity of provocations, lesson format, the inclusion of daily activities that supported my aims of producing belonging in nature, and the structure of the garden space itself.

Taking these political and social influences into consideration, I now turn to exploring the garden space. Describing the setting, the teaching approach, and the types of experiences the students shared will shed further light on students' environmental identity production within this particular figured world.

The Teaching Garden.

Picture 2. Entryway to the garden.

Yesterday was my first day of formal data collection. I entered into the day with the eyes of a researcher, and I took notice of my experiences in a deeper way. When I arrived, I parked in front of the main office. Excited laughter filled my ears as I opened the car door. Three children were watering raised flower beds in front of their classroom. I am coming to understand that this educational environment may be quite unique in its own right.

After signing in at the front office, I followed a sidewalk in front of five classrooms toward the school garden. As the path meandered through this corridor, I noticed murals stretching down the sides of the building which faced out to the street. These were paintings done by the children of California-native plants and wildlife. I felt a sense of peace and tranquility as I studied these beautiful works of art. I wondered if these murals had a similar result for the students.

The path then led me into the kindergarten area, where I noticed several students digging in a hexagonal sandbox containing little sand. I laughed to myself as I recollected my own childhood interests of digging in dirt and making mud pies. The dirt and water did not matter to me back then. Within this reminiscence, I began to think about how the boundaries between play and school are somewhat blurred here.

The cement sidewalk ended, and I walked up a dirt pathway created by the students on their daily routes to the garden. As I approached the entrance, I paused underneath the wooden archway reading "El Jardin Escolar, The Teaching Garden." I considered what this space might mean for the students at this school, and I began to consider the garden as a hub for environmental teaching and learning. This garden could impact how students make sense of their lives, find direction, and form connections

with nature. It can be a place where environmental ideologies already present are reinforced and nurtured.

Excited by these ideas, I took a few more steps and entered through the archway into the teaching garden. Immediately, I was struck by the power and potential I felt in this beautiful space (Excerpt from researcher journal, 3/20/12).

Setting. Within the soil and within the self, there is much to be grown inside a school garden. Describing the physical features of the school garden is a process of revealing the resources available to students in the space. In considering the garden's design, utility, aesthetic, and potential, the garden may be visualized as a beautiful space for children to belong and *become*. Attending to each of these facets of the garden supports notions of the garden as a possible birthplace for students' environmental identities and environmental ethics of care. In this particular teaching garden, the space framed the students' experiences while the students shaped the space. Co-constructions of the self and soil evolved within an ever-changing social process. Thus, a physical snapshot of the garden attempts to catch moments of this process.

The main teaching garden is a large open space of approximately one acre. The garden is surrounded by a fence made from unpressurized wooden posts and metal wire, which maintains the garden's integrity as an organic garden. Growing on top of the fence are established grapevines and kiwi plants. Lining the inside of the fence on the entire left and right sides are abundant apple, orange, plum, and pear trees. At opposite ends of the fence are entrances with swinging doors. Hung at eye height of the front entranceway is a round plaque attached to the fence, proudly announcing that the garden is "certified organic" and "pesticide free." There is an announcement board with laminated pictures

of the students working in the garden. A clipboard is also housed here as a place for parent volunteers to sign up to help out during a garden class or for after school garden duties.

Next to the back entrance, there is one large garden shed. It holds a teacher's desk, child-sized tools, a utility sink, irrigation system control panel, and many gardening books. This shed is my office, while the garden is my classroom. There are two areas which have been transformed into classroom settings. These class settings are not traditional in the sense of rows of desks and chairs or a centrally placed teaching authority. Instead, the classrooms are part of the larger garden setting. In one location, which is most often used, long benches have been formed out of stone into U-shaped arcs tucked within the hillside. This teaching setting is located underneath the canopy of a large oak tree, so that it can be more comfortable in the shade. Garden classes often begin here, with everyone sitting in the circle so that all are afforded an opportunity to speak and be heard. The teacher sits in the semi-circle with the students to devalue traditional hierarchies of authority. Here, students are given the opportunity to exchange ideas and come to feel a sense of equal standing within the larger garden community. The second class setting is located on the opposite end of the garden, and is marked by a circle of hay bales.

Next to the main teaching area are two picnic tables for students to sit on and a small wooden table to display objects of inquiry. A shade canopy towers above another table and provides a space for individuals to linger in filtered light. This setting is frequently used for lengthy conversations and cooking with students, and similarly, is considered a space without central authority. A spigot located within this space is often

used to wash produce for cooking. In this part of the garden there is a worm bin and compost tumbler. These receptacles are where students place compostable waste collected in their classrooms each week or leftover scraps from the food prepared together. This area is also where plant starts are kept before they are transplanted into a particular garden bed. Seedlings are started by students and kept here on flats in an area which receives many hours of direct sunlight.

In the back left of the garden space there is a three-step, open air, composting system built by the parents and students during a garden workday. The first bin holds plant and food material in its rawest form. As the material in the first bin is turned daily with a pitchfork by students, it is transferred in its more decomposed state into the second bin. Here it continues to be turned and broken down until it is transferred into the third bin. Once it gets to the third bin it is considered to be usable fertilizer and nutrient-rich soil to be returned to the garden beds for use. Students load wheelbarrows with the soil and turn it into their garden beds at various points throughout the long growing season. This soil is highly valued for its quality and because of the time many students invest in its making.

The hubs of the garden, however, are the fourteen raised garden beds built out of unpressurized wood and terraced into the hillside. Each bed is approximately four by twelve feet, and each is hooked up to a central irrigation system which waters the beds year-round every morning before school. Since the average class size for the school is approximately 18 students, each class has been able to get their own section of a raised gardening bed. The students get to decide which plants to grow in their garden beds, while keeping in mind the suggestions made by the garden teacher about which plants

may be in season. Each class has designed its own markers to indicate their space and what is growing there. Painted signs, rulers, laminated seed packets, scarecrows, bird-repelling metallic streamers, footprints, and special offerings to the plants can all be seen in these coveted spaces.

The real beauty of this garden lies in the care and attention to detail that the children and families show the space. Beautiful murals adorn the garden shed and were painted by a mother at the school. Birdhouses built and painted by a family at the school are scattered throughout the garden. Two birdbaths and various garden statues donated by families add beauty and interest throughout the space. When in use, the space is meticulously maintained by all garden stakeholders. There is barely a weed in sight, and woodchips donated by a tree-cutting service carefully blanket the floor of the garden. Mosaic stepping stones created by the students form meandering pathways around the garden beds. Sunflowers and various flowering plants decorate the space with color and whimsy year-round. Finally, a fairy garden created by students in a first grade class adorns the front entrance under a newly-planted pear tree. Tiny houses are built out of sticks, mud, and leaves with little pathways etched between them in the soil. Sometimes I can hardly believe that no one attempts to destroy these delicate treasures of the imagination.

The learning environment described here was more than just the students' physical surroundings. It is where the students came each week to learn, grow, adapt, love, and thrive. As open discussion, freedom of expression, creativity, and protection for students' emotional well-being were encouraged, it was my aim that identity shifts would also occur in the space. As I strived to create a physical learning environment in

which students felt safe to express themselves, to ask questions, and to feel a sense of kinship with nature, my efforts and choices regarding students' direct garden experiences, described in next section, truly enhanced their identity capabilities in the space.


Pictures 3 and 4. The murals on the garden shed.

Teaching Approach: Reggio Emilia-Inspired. To support my research aims and to address my research questions grounded in the theoretical frameworks of figured worlds and environmental identity, a Reggio Emilia-inspired approach to teaching and learning was chosen for use in the garden (Malaguzzi, 1994). Foundationally, this approach supported the view I had of the children in the garden as being competent and capable of strategically building their own theories, figured spaces, and identities (Edwards et al., 1993). This postmodern format was also chosen to engage students' interests in learning and to empower students within their own governance, learning processes, and identity production. The Reggio-inspired approach utilized in the garden was student-centered and emergent. These descriptors capture the differences between the garden world and the figured worlds of the indoor classroom. These descriptors also

get at the student-centered process of behavior management in the garden, the students' participation in the creation of garden norms, the students' contributions to the garden structure, the students' involvement in their learning experiences and identity production, and my postmodern view of the child as the garden teacher (Hewett, 2001). As a garden itself is emergent, the structuring of experiences in a garden must match this.

The Reggio-inspired format provided an ideal environment for conceptualizing and studying the garden as a site for identity production. Each learning group that developed during a given provocation was essentially creating their own figured world, within which I could observe my case study students very closely. In this setting, I observed my five students of interest make learning and identity choices, enter into and leave provocations, create new provocations and sub-groups, speak and write, play and imagine creatively, jockey for positions of power, be impressionable and impress upon others, transfer knowledge and identities into new experiences, and define themselves in a relationship with the garden through highly-developed and personal means. Specific to aspects of this framework referenced in my work, this teaching format also allowed me to explore with the children the meanings they ascribed to their diverse narratives and garden artifacts. This became a part of the recursive process. It also became a gateway to understanding what was important to the children within the process of authoring caring, environmental selves (Hawkins, 2002).

The Reggio-inspired approach utilized in the garden was intentional and far from a free-for-all. Everyone had a role and most participants shared the common goals of learning and growing food in the garden. This worked well in the space because of the management systems that were in place and the level of interest the students' had in

driving their own learning experiences. The experiences shared within the garden were not managed or determined by a hierarchical structure which dictated what must be accomplished on a daily basis. The garden was a communal effort often driven by student interest and direction. The garden was less structured than a typical classroom in terms of the time allotted for completing goals, the tasks that needed to be accomplished, and how work was going to be completed. This particular structuring provided the time and space for students to borrow from and improvise with their unique histories-in-person as they were recruited into and shaped by their experiences. The students participated in the creation of the garden world and contributed to the cultural narratives about what was important there. Students were drawn into and shaped by experiences where they found both personal relevance and dissonance.

Provocations. Further, to support environmental identity production in the children, the Reggio-inspired approach allowed children to choose topics of interest to connect with in nature. An interest in a topic or provocation denoted some sort of investment in it, which when sustained over time, created a site that was ripe for improvisation and identity production (Rinaldi, 2005). The students could choose to participate in activities that either connected or competed with their histories-in-person and existing ideologies, thus, prompting moments of identity negotiation which either challenged or strengthened their care for nature. Entry into a figured world in the garden, mediated by specific cultural artifacts and discourses, produced shifts in students' environmental identities (Holland et al, 1998). Students learned to strategically use the cultural resources at hand to evolve their thinking and identities. Then, they communicated their newfound knowledge and understanding in a variety of media, often

with creative results. Their creative and diverse narratives became artifacts of their garden experiences, leveraged to solidify and/or communicate aspects of their environmental identities to themselves and others (Bloome et al., 2003).

Learning experiences in the garden were not top-down. At the start of my time with the students in the garden, I elicited preliminary information about what they wanted to grow and learn in their experiences. I recorded this data. From here, all instructional decisions were made as a part of a recursive process. I would observe the students in the garden, listen to their talk, and interpret their narratives (Kim & Darling, 2009). Led by student interest, provocations in the garden were tied to essential learning standards and driven in design by the children's motivations and interests. From a space of attempting to understand the "other," I would suggest and foster learning experiences that the children would either take up or reject. In a given class, it was not uncommon for there to be four or more different small groups working on different activities and exploring different topics at the same time. The students would decide the length of the provocations, as well as when they would exit or enter them.

Occasionally, a provocation I would present would not really interest anyone. Here, students would either intentionally or unintentionally tweak something in the moment to fit the provocation more to their interest. Or, they would suggest something different all together. If a student entered into a provocation, it was usually because it interested them in some way. If it was for a reason other than this, they would often not stay involved in the project for very long. Students always had the choice to accept or reject an activity we were doing in a favor of another. Also, they were not required to

work in a group. Most of the time there were pairs or individual students who would break out to learn in their own way.

An example of this recursive process in action would be the variety of provocations first grade students were involved in around their expressed interests in exploring plants and their connections to our lives. All of the students expressed an interest in growing something in the garden. As a part of eliciting this information from the students, many also expressed an interest in observing plants, understanding how plants grow, understanding why some plants grow at some times and not at others, and tracking plant growth over time. This information prompted me to introduce a number of provocations around the theme of exploring plants in our garden and the plant life cycle. Most students were interested in this topic and found their way into one of many provocations that were occurring in the garden. These permeable learning groups lasted for many weeks, with students entering and exiting groups as they desired. Projects within the groups ebbed and flowed as new information was found, new ideas were presented, or a new person entered or exited the group. The teacher facilitated and participated in all of the groups equally to teach content, guide the learning with pertinent questions, suggest materials and/or a new direction for the group based on observation, or deal with a problem.

At one given time within this learning theme, many provocations were initiated by the children. One group of students was observing, drawing, and doing leaf rubbings of plants with magnifiers, microscopes, and art supplies. A couple of students were investigating the scientific names and more information about the types of plants already growing in the garden by utilizing books in the garden library. Their hope was to find out

which were safe to eat. Another larger group was testing the growth of different seeds in different soils, under different conditions, and at different locations in the garden. Yet another was measuring, documenting, and graphing plant growth using measuring tapes. A few different sub-groups broke off from these groups at different times, as students found the group was moving in a direction they did not agree with or find interest in. One sub-group existed for a time and strictly focused on digging a *very* deep hole for a seed as a part of the plant experimentation. Another student in the research group broke away from the provocation for a time to strictly focus on organizing the garden books. To my surprise, first grade students rarely chose learning groups simply for social reasons.

Within the provocations, there were many instructional strategies that contributed to students' ecological literacy and ethics of environmental care. Accompanying these practices were certain discourses, tools, and artifacts that the children could access and leverage to shift their identities-in-practice (Gee, 2000). Doing experiments in nature, noticing changes in the environment, categorizing objects, classifying information, and keeping garden journals all engaged the inner naturalist in children. Other strategies included learning the names of natural phenomena and characteristics of the natural world, using magnifiers or microscopes to study nature, drawing or photographing natural objects, and completing wildlife protection projects. Setting up winter feeding stations for birds, comparing natural observations with others, studying books about nature, and learning about the work of famous naturalists were other means by which students connected with nature through their experiences. The students' interests drove these choices all along the way, utilizing the resources available to them in the space.

Magic Spaces. Another powerful activity that was particularly useful in supporting the tenets of the Reggio-inspired format was the use of the "magic space" experience. This activity was born out of the children's expressed need for increased time and space each class period for individual processing, creative expression, and self/group reporting and reflection. As the children lingered longer and engaged more deeply in these types of experiences consistently over time, I was called to listen to and engage their needs in this way within the Reggio recursive process. They were asking for more time to creatively reflect upon who they were, how they related with their experiences, and if and how they wanted to change. They were seeking longer moments of solitude; a place to be alone but not lonely. Thus, as part of their weekly garden experiences, we held a space every class period for just this. Each child chose one special place in the garden where they could sit comfortable and quietly. They would return to this same spot during the beginning of every class session, but they could also go to this spot by choice during their free time. They called it their magic space.

The first time we went into magic spaces the children spent about ten minutes engaged in the experience. Over time, they built their endurance for the experience. On some days, the magic space activity could last up to twenty minutes or more based on their verbal and non-verbal feedback. Magic spaces began in silence, and the students were encouraged to hold this silence during the entire experience. There was plenty of time for talk and reflection when we came back together afterwards. The time was for reflection - some would sit, some would write in their journals, and some would close their eyes or experiment with using their senses in different ways. At first, the students poked around at the dirt and giggled uncomfortably. Some of them even got frustrated

with me or the experience. Over time, however, they would reach for their journals and pencils and begin to write and draw. Some children initially expressed a sense of fear or confusion surrounding the experience, but they eventually became comfortable with and even possessive of this time and space.

As I observed the students in their magic spaces over time, I noticed that the children were benefitting from the experience in many ways. There was an increase in patience, an improvement in observation skills, a greater penchant for sitting still and quiet, more understanding of self-regulation, an "opening up" to the vulnerability of new experiences, increased receptivity for feedback and ideas from others, and an ease with expressing their feelings about relationships with nature and each other. The children expressed that spending this time in the garden in stillness provided a space for them to "think up amazing thoughts," "notice things," "watch a tiny movie play out in nature," "develop imaginary stories," "try to figure out how animals were talking to one another," "notice the way the ground felt," "smell the air," "get to know a tiny space," and "play with rocks and sticks." Magic spaces became places to sit, absorb, reflect, and dream.

The end of magic space time was signaled by a few loud "bird calls" made by the teacher, which were echoed back by the students. The group would gather into another circle where I would ask if anyone wanted to share about their experience. A few hands would always shoot up. A student would recite song lyrics, then his own nature-inspired rap. Another student would offer a poem. Occasionally, a student might snicker at what a classmate shared, but another student would always chime in afterwards with another journal entry. The diverse narratives that students offered and analyzed during magic space time, publicly or privately in their journals, were some of the richest sites of

identity negotiation I observed within the garden. Further, the identity movements within these moments became some of the most revealing in the data. As a researcher, the sacred, magic space ritual gave me a consistent opportunity to witness the children's live and written identity performances, which became springboards for more personal discussion with the five case study students (Hawkins, 2002).

Magic spaces provided the time, space, and forum needed for the children to figure out who they were in relation to each other and to nature. Within these narratives and this space, the children deciphered who they wanted to be privately, and then if and how they wanted to present that to others. They experimented with the creation of personal artifacts and symbols that solidified their experiences, and thus, empowered their participation in the co-creation of figured world of the garden (Holland et al, 1998). In some instances, the narratives and expressions even became the artifacts that the students leveraged to evolve and connect deeper with their environmental selves (Leitch, 2006). They drew themselves in relationship with the garden and expressed themselves in spoken/written words and pictures. Through this participation, they shared their meanings with others, who then validated, rejected, or copied them in some way. These moments were born organically through our garden experience. They represented the spaces where history, culture, social context, and power intersected, and the children produced environmental selves within emergent experiences.

The ritual of the magic space was a cultural activity performed within the figured world of the garden which shaped and shifted student's identities. It was something we were never allowed to skip. The time and space to form and process the environmental self in the magic space framed the garden experience positively for the students, and even

developed their relationships and care for the garden itself (Sobel, 1996). The practices and rituals that took place as a part of the magic space experience were an entry point for the five focal students into the figured world of the school garden. In addition, the magic space activity played an important role in the emergent teaching process. The narratives that resulted as the students chose and processed these experiences became invitations for me to research and attempt to understand the other (Ahn & Filipenko, 2007).

Next, this process of taking up or trying on a new identity, or adopting an ethic of environmental care, will be explored in the context of the students' lives.

The Student Cases

In an attempt to understand garden participants, I will now address my secondary research questions pertaining to the students' participation and self-understandings:

1) How do the students participate in and talk about the garden in their school and home lives?
2) How do the students see themselves in relation to the garden and natural environment?
3) How do the students make meaning of their experiences to produce an environmental identity or ethic of environmental care? What do their expressions of environmental identity look like?

Five first grade students were selected for this study. I have used the pseudonyms Max, Luna, Carlos, Anna, and Jamaal to represent them in this study. To begin to understand the identity positioning of each child within the garden framework previously described, there were six common data points chosen for inclusion in the case study. These data signify each child's active participation in common activities within the

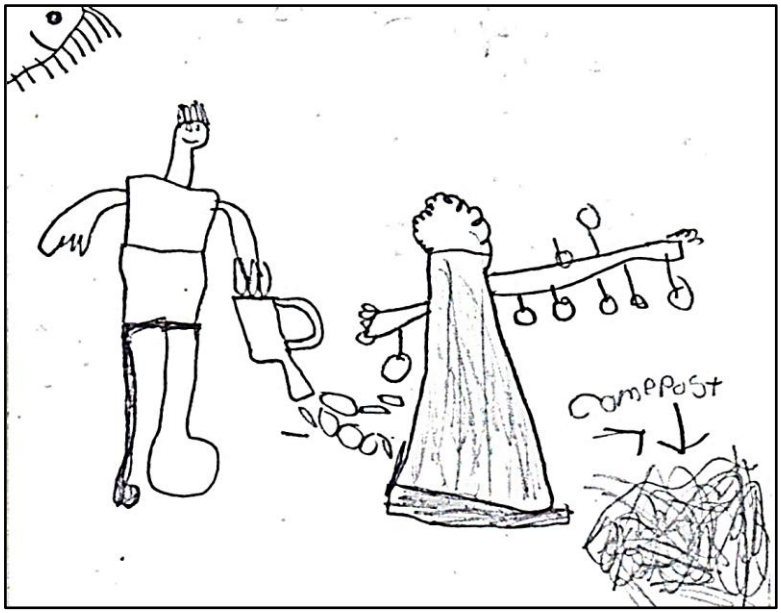
teaching garden, and they frame my summative description of each child. Common data sources include: 1) A self-portrait; 2) A written response to a teacher-posed question; 3) A list or drawing of what they wanted to grow in the garden; 4) A top ten list about the garden; 5) A poem(s) written during magic space time; and 6) A drawing of the garden. Additional data, which include direct quotations, drawings, letters, or research vignettes specific to each child, were chosen for inclusion as they highlighted a new identity positioning or care expressed for nature.

The sketches are the self-portraits drawn by each student during an art activity in which we drew ourselves inside of the school garden. The lists answered a teacher-posed question of what the children wanted to grow in their garden beds that year. The top ten lists are from a writing activity where the students were asked to record ten words or phrases that "popped into their minds" when they thought about our school garden. The poetry pieces were free-write activities completed during different magic space times. The student's constructed responses answer a writing prompt which asked them to describe their feelings about our school garden. The prompt was introduced in the first grade classrooms, and the students were encouraged to address three questions within their answers: 1) Do you like our garden, and why? 2) What do we use our garden for? 3) What does our garden do for us? Misspelled words in the students' writing were corrected with the students or teachers before the pieces were included, so as to not unintentionally change any meanings. Rounding out the common data samples are the students' drawings of the garden.

The student descriptions represent interpretations of the students compiled from conversations, writings or drawings in journals, and interactions observed or audio-

recorded in the garden over the course of the study. These data-based descriptions were formed and triangulated with the three participating first grade teachers during a focus group session. Analyzing, coding, and triangulating this student data became the means by which I understood the students' complex processes of environmental identity production (Creswell, 1998). The students' stories are told with an eye toward the figured world framework, which allowed me to analyze students' diverse narratives as moments of identity negotiation. This lens shifted my gaze toward capturing moments where the students used the cultural resources at hand to change their responses and shift their identities-in-practice. Students' environmental identities were produced as they participated in the activities and interactions occurring in the figured world of the garden (Holland et al, 1998). The ways in which the students expressed themselves in the garden, their utterances, drawings, and words, became the means by which the students wrote their environmental selves into existence. All of their identity choices were impacted by the culture of the school garden and nested within the power structures of the public school (Bourdieu, 1972). Further, they were born through students' histories-in-person and their unique acts of identity improvisation (Holland & Lave, 2001).

Max.



Picture 5. Max's self-portrait in the garden, 3/22/12.

Max, a Caucasian boy, was the youngest in his family. He had an older sister in third grade, and both of his parents worked in the science field. His mother worked part-time from home. She volunteered a great deal at the school and in the classroom. Max's family was also very involved in the school garden, helping out on all the family workdays and donating supplies from home. Max reported that his family participated in gardening and stewardship practices at home. During the school year, his family took two environmentally-themed vacations to Yosemite Park and the Nepali Coast in Hawaii. During our time together, I learned that he had a budding knowledge of ecology. He shared that he enjoyed spending time outside on his bike and hiking and camping with his family. His favorite subject was science and his favorite activities at school were "garden and recess." He belonged to the school's environmental club.

Max was one of only two Caucasian boys in his class, and he was one of six children in the class not receiving free or reduced lunch. Once, his mother shared with me that Max was being raised without access to computers or television. She often worried that this would make Max an outcast or target for bullying. However, Max was a very easy going and well-liked student. He had a gentle, kind, caring personality. Sometimes he found it frustrating to play with other boys in the class who were aggressive and rough, but Max was a problem solver. When difficult situations arose in the garden, he would find a peaceful way to solve the situation. He might walk away and create a new activity that he could do or he might handle the problem by being humorous. As a class leader, he looked for the positive in most situations. Leaving the garden each week, he would often show me some natural materials he had collected, asking for permission to take them home for further study or to show his dad. He would always return the items later to just where he found them.

When I first met with Max in his class, he expressed that he wanted to grow "cabbage, artichokes, leafy greens, daikon radishes, and Buddha's hand fruit." He was the only child in the school with these items on his list. In fact, I had to research what a "Buddha's hand fruit" was before I could respond to his request. He enjoyed my amusement with the diversity of items on his unique list. This project, which was completed early on in our time together, marked the first instance where Max's home identity allowed him to find a new identity positioning at school. His list brought him attention, challenged the teacher, and characterized him as smart about gardening. He also expressed to me that in garden class this year, he wanted to "dig with shovels and

learn about pesticides." He had an understanding about what it meant to "be organic," and he often talked about how his family only ate organic food at home.

In response to the writing prompt eliciting his feelings about the garden, Max wrote, "I like our garden. You can do a lot of cool things there. We use our garden for planting seeds and composting our lunch waste. We have a pretty garden that also gives us food." As a part of a writing activity, ten words that came to Max's mind when he thought about the garden were:

1) Organic
2) Pollen
3) Worm
4) Fantastic
5) Wonderful
6) Garden beds
7) Important
8) Shelter
9) Recycle
10) Compost

When we talked about his list at a later date, I asked him why he had listed compost on his list. He promptly stated, "Composting is wonderful and important, too. The garden beds would be miserable if nobody composted." Again, these statements demonstrated a developed level of environmental knowledge and an environmental identity-in-progress that he was bringing into the figured world of the school garden.

Compared to the other students in the case study, Max led a privileged life in terms of the opportunities he had which were related to financial capital. He lived in a large house instead of an apartment, and he had the green space to have his own garden at home. This reflected in the way he spoke about and referenced the school garden. He was less interested in what he could physically take or get from the garden and more interested in what he could learn from it. I presume this is because most, if not all, of his

basic needs were being met at home. As both his parents were in the science field, he took a more direct interest in the scientific aspects of the garden. He wanted to learn the names of all of the plants in the garden, and he would often sketch pictures of plants in his journal during magic spaces. When I asked him about these drawings he explained, "I smell. I feel. I look at stuff in my magic space. I like to explore in the garden that way. It's important to know stuff about the plants. Like the oil from the mint is used in gum and candy." He told me that his dad liked it when he told him new "science facts" that he learned in garden class. His pursuit for scientific inquiry was motivated by both a natural curiosity and the desire he expressed to connect with his parents.

He also understood enough about science to use scientific ideas in jokes or in his writing. Max wrote over twenty poems in his garden journal, and I selected three to include as data pieces. His poetry on the whole reflected a sense of understanding of scientific concepts such as the food chain, the plant life cycle, and composting. However, he would also playfully relate scientific content to himself in his poetry. This would often elicit a chuckle from his classmates, providing a way for him to socially connect with children with whom he shared very little in common. For example, in this first poem, he playfully positions himself in the place of the ants in a food chain:

<u>The Food Chain Mystery</u>

It happened with the top of the food chain.
We are at the top of the food chain.
Ants are at the bottom of the food chain.
That's how it all happened.
I don't know how it feels,
But I would not try it.

In the second poem, he positioned himself as a magical bean. Here he appeared to express that he feels he doesn't fit in with the other children. He also demonstrates an emotional connection to the garden through his knowledge of it:

The Magical Bean

The magical bean was different from all the other beans.
It was smaller than all the other beans.
It grew faster than a Formula One Car.
It knew its homework.
It saw ladybugs, spiders, butterflies too.
It knew where to see them.
Do you know where to find them too?

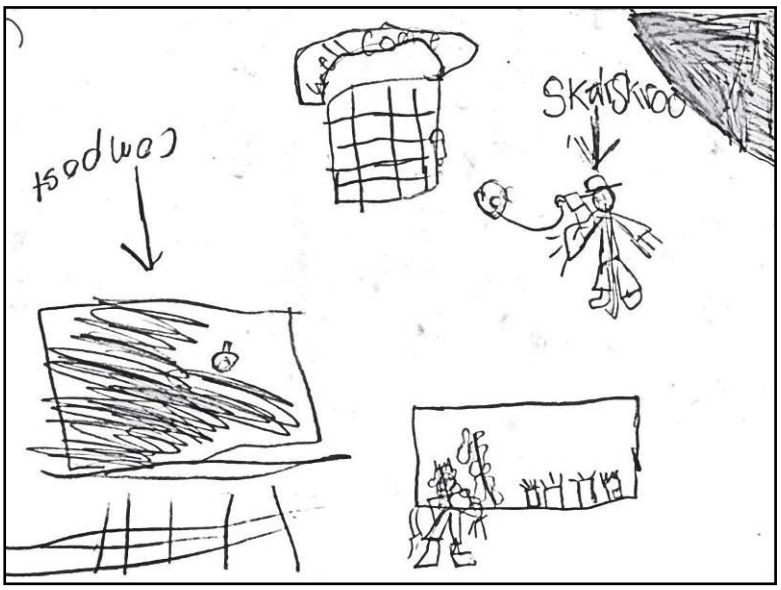
In the third poem, he played with the idea that perhaps he came from a tree that grew little boys. This poem embodies his relationship with nature, as it is equal parts comedy, fantasy, and factual science:

The Magic Seed Cycle

The seed begins to grow a lot
And it grows and grows and grows
Until it grew into a little tree
Then one day somebody put water on it
And at night it made a little boy
He decided to live in the tree
Animals began to live on the branches too
A seed!
And the life cycle starts again.

The little boy grown from and living in the tree is Max, as his family has socialized him into and supported him through their careers and interests in science. This idea that he could grow from a tree represents the personal connection he felt with nature, as it has been nurtured by his family and taken up by Max.

Max drew a picture of the garden in his garden journal. He chose to include a drawing of the garden's entrance, a scarecrow his class put up near their garden bed, a picture of himself next to a garden bed, and a drawing of a compost bin. When we talked about his drawing together he stated, "I guess these are the things in the garden that I like the most. I wasn't sure how to draw me learning about things over there, which is what I like to do most every day. So I just put myself in there by that garden bed. Pretend that I am picking up something to study. Like that plant, which could be anything you want it to be."

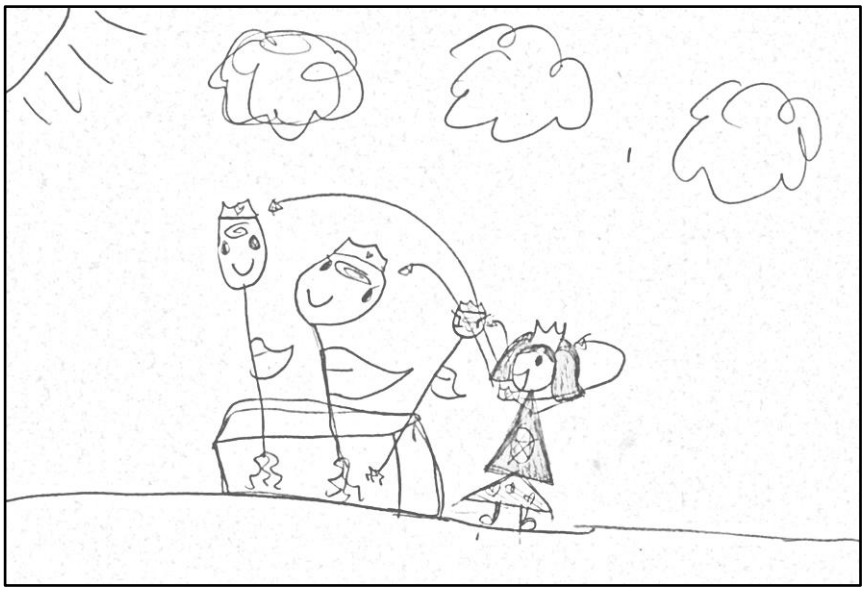


Picture 6. Max's garden drawing, 5/24/12

In more ways than one, Max understood that nature truly *made* him. Nature was his livelihood and it connected him with his family, classmates, and teachers. The environmental identity he enacted at home bonded him to nature and, in a sense, obligated him to care for it. In the figured world of the school garden, Max assigned new meaning to his home identity and its accompanying discourses and artifacts. He used his environmental knowledge in creative ways to exercise choice, make people laugh, and

build social capital. He produced a caring, environmental self by building upon his prior knowledge and identities and improvising with them. The garden gave him the freedom to shift his home identity in ways that made having an environmental identity socially meaningful for him at school. This identity was ascribed new meaning in the figure world of the school garden. The sense of belonging he felt in the garden contributed to his sense of belonging among his peers. His garden experiences at school also strengthened his connections with his family.

Luna.



Picture 7. Luna's self-portrait in the garden, 3/22/12.

Luna was a Hispanic girl, the oldest child in her family. She had a younger brother who was one year old at the time of the study. Both of her parents worked full time at the McDonald's restaurant down the street from the school. Her family attended one garden workday that year. She lived in a nearby apartment, which her family was temporarily sharing with her aunt and her new baby. In our time together, I came to understand Luna as equal parts tomboy and princess. She loved spending time in the

garden and getting her hands dirty, yet she had many feminine fascinations which she often played out in the garden. When given the option, she would spend her lunch-time working odd jobs with me and a small group of students in the garden. She was a member of the school's environmental club, but reported having no environmental activity outside of school. She shared with me that she had never been to the beach or been in a forest before her class field trips to Muir Beach and Muir Woods that year.

A sensitive child, Luna would often cry for one reason or another while her class was in the garden. She felt great disappointment and anger when her classmates didn't respect the garden or something in nature. Her tears were a result of her protective nature over things. She would cover her eyes in fear when faced with something she didn't want to see or that made her feel sad. I forged a very tight relationship with Luna. She was in almost constant need of attention and validation from me, and I was able to provide it. She reminded me a lot of myself as a child, so I was happy to be the hug and smile she needed in her day. I enjoyed encouraging her love of nature and the garden and working through some of her fears together. She shared with me that she "never knew a girl could be the garden teacher" and that she wanted to be a garden teacher when she grew up. Well, a garden teacher and "Jasmine from Aladdin at Disneyworld."

When I first met with Luna's class at the beginning of my data collection, she expressed that she wanted to grow "sunflowers, grapes, yummy salad, corn, Christmas trees, apple trees, orange trees, strawberries, and carrots." A mixture of reality and whimsy, her wish list fit her personality. It was evident to me that things at home were not easy for Luna. For such a young child, she had been exposed to a lot of complex adult situations and experienced much trauma. The garden provided a safe escape for

her. As she participated in the figured world of the garden, she could sort out the complex feelings she had about her life with me and her peers. She could love and be loved. She could be a child, full of imagination and wonder.

In response to the writing prompt eliciting her feelings about the garden, Luna wrote, "We have an incredible garden at our school. During school, we use the garden for Green Team, planting and making animal habitations. I love our garden because it makes our school beautiful. Ms. Megan teaches us about nature and planting seeds to grow into plants. Our garden gives us fresh air." As a part of a writing activity, ten things that came to Luna's mind when she thought about the garden were:

1) Birds
2) Flowers
3) Seeds
4) Garden beds
5) It smells good
6) I love the garden beds
7) The plants babies are good
8) It is good food
9) It is colorful
10) I like the whole thing

Later, when we talked about her list, she expressed that she "really only needed to put one answer on there, and that is number ten." She also stated, "I love to plant, but I don't have a garden. I would like to plant with Ms. Megan at my apartment." Luna often asked me to come to her house, and she told me that she loved me after our first class together.

Luna's journal was full of fairytale-like sketches of fairies and princesses in the garden, which she later told me, were drawings of "Mother Nature and her helpers." She developed a fascination with the idea of Mother Nature, and she would often reference

nature as a person in garden class and in her written work. In her first poem I selected, she personifies Mother Nature and tells of their special interactions:

My Life in the Garden

Flowers grow in spring and summer
When strawberries don't grow
When birds see seeds, birds dig to eat the seeds
My favorite color plant is purple, red, pink, and gold.
When Mother Nature says hi I say hi back.
When Mother Nature dances I dance back
I love Mother Nature.

When I asked her about her friendship with Mother Nature she explained, "Mother Nature is so important. She gives us plants, and she gives them water and food. She helps the plants grow up. She loves the plants, and she loves the garden, and she loves the trees and birds. Mother Nature is beautiful to me."

Another theme running throughout much of Luna's poetry reflected her interest in mothering and being mothered. This theme highlighted the complex and contradictory roles that Luna had to play in her home life. One moment she was the child, and the next she was taking care of a sibling or cousin. Her mothering ways in the garden received recognition and praise from me and others, thus, validating her mothering role at home. Luna's poetry also touched upon her protective nature over the small things in the garden, like insects or baby animals or plants. As shown in the second selection below, she often expressed a desire to look after things to keep them from dying:

The Garden Insects

Lady bugs crawl in a leaf and eat leaves.
Lady bugs grow in the garden.
Lady bugs fly in the garden to be free.
Lady bugs love summer and garden.
Lady bugs love the sun as much as fruit.

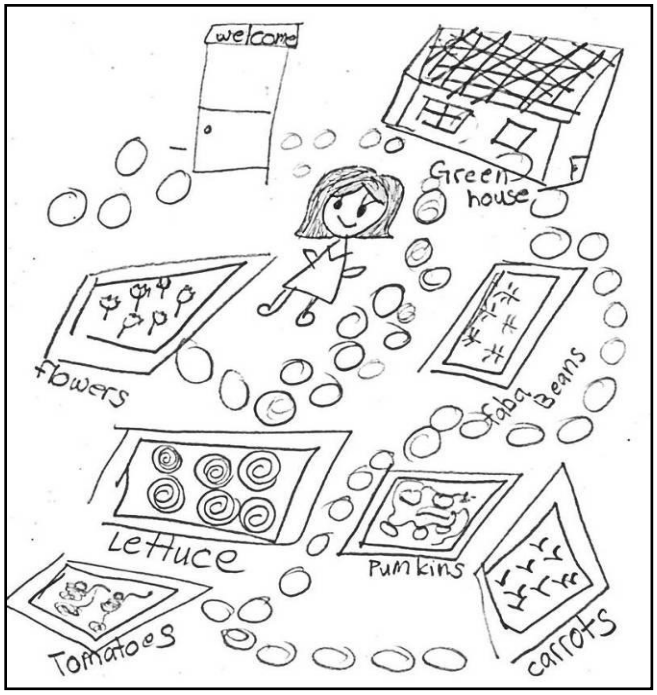
Lady bugs are red because I like red.
Nothing else is my favorite color of ladybug.
Lady bugs need food to survive.
Lady bugs are special.
Lady bugs are fun.
We never want lady bugs to die.
So that is why we keep our lady bugs safe.

The following vignette offers another example of Luna's desire to maintain integrity toward and protect all living things, even when she thought the teacher wasn't looking:

> *While I am grading the soil on a newly formed garden bed nearby, a group of students is picking up caterpillars from the tomato plants on their own. One of the first grade boys asks, "What is that thing?"*
>
> *Luna moves in for a closer look, "It's a tomato worm. They are bad for tomatoes, and like to eat the leaves and the fruit."*
>
> *Another boy asks, "What should we do with him?"*
>
> *"We should smush it," a girl in the group suggests.*
>
> *Luna says, "No. Don't you dare kill it! It has feelings, too."*
>
> *Some of the other students suggest that they relocate the tomato hornworm outside of the garden gates. The rest of the group discusses it and agrees, so Luna walks over and releases the worm* (Excerpt from researcher journal, 4/13/12).

Luna's picture of the garden was very impressive and detailed. It included the garden's entrance, a greenhouse (which we did not have in our garden), and labeled drawings of many garden beds. She took two class sessions to complete this drawing, and she asked me to help her with the spelling of each item before she added it into her

picture. When we talked about her drawing together she stated, "This is me hanging out in the garden by myself during lunch. See the stepping stones all around? I drew those because I like the colored glass on them. You like those too, right? There is a pretend greenhouse here because I know you are raising money for that someday. All of my spelling is good, I know."

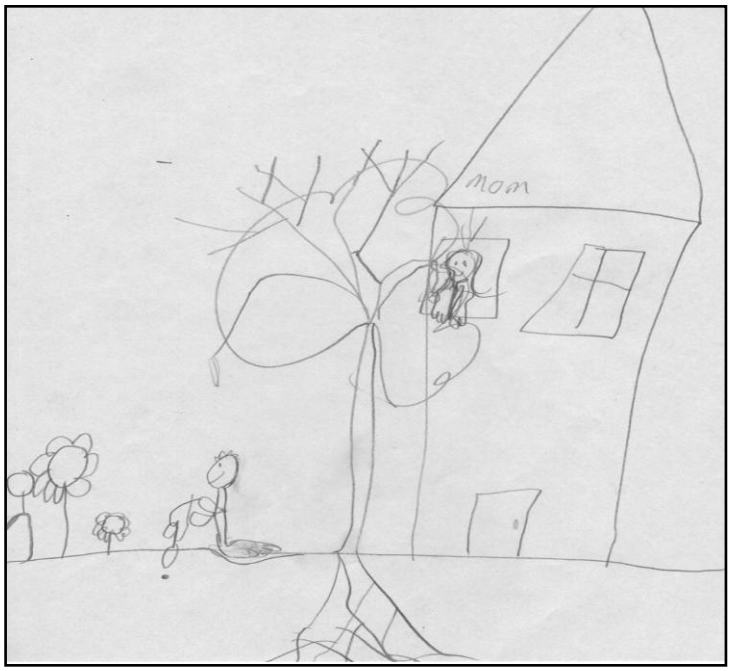


Picture 8. Luna's garden drawing, 5/24/12.

On the last day of garden class for the year, Luna gave me a beautiful handmade card on green paper. Inside, she wrote: "Dear Ms. Megan, You are the best garden teacher I've ever had. You are so nice. You care about nature. I wish you were my mom." Never before had words written to me simultaneously broken and warmed my heart to the degree that those words did. In Luna's experience, it was our relationship in the garden that mattered the most to her. I was a caring adult in her life with time to give, an adult that modeled how to find peace and wholeness in nature. Subsequently, she

found love, attention, and a way to mother and be mothered in the garden that bonded her to the nature experience. This produced her fervent sense of protection for and allegiance to me and the things in the garden she strived to safeguard, or her caring, environmental self. By acting out her home identity in the figured world of the garden, Luna found acceptance for the difficult experiences she had lived through. Her unstable home life brought her to this space of finding purpose, place, and love in the garden.

Carlos.



Picture 9. Carlos' self-portrait in the garden, 3/22/12.

Carlos was a Hispanic boy, and he was the oldest child in his family. His mom had a baby during his first grade year, a half-brother to Carlos. His mom was not working at the time of the study, and Carlos was being raised in a single-parent home. Carlos's mother was dealing with severe depression, which she openly shared with all of his teachers. One time when we were talking about his family, Carlos told me that his dad

worked as a farmer "up North." He shared with me that his dad had to "bring cash" to his mom anytime he wanted to see him, which he knew was difficult for his dad to do. Carlos was a child who carried the weight of these emotional burdens in his daily life. He was forced to grow up quickly, and speaking to him felt like speaking to someone well beyond his years. He had been taught by his mother and his church to not grieve the loss of his father, so he worked to accept it instead.

Carlos took a bus to and from school from a largely Hispanic neighborhood about fifteen minutes south of the school. His teacher told me that Carlos's mom had him take the bus up to our school because she felt like it was better than the one right across the street from their apartment complex. Consequently, Carlos spent almost ten hours each day at school and ate two, free meals there each day. The bus would drop him off early for free breakfast at school. Then after school he had a scholarship to attend the school's onsite daycare, after which he would take the late bus home at six o'clock. Examining his life from the outside, he appeared to be living a life in which he was being temporarily overlooked. The amazing thing about Carlos, though, was that he was always quick to speak about the positives in his life. As much as he could, he honored his mother and spoke of their circumstances with respect for his family. I was humbled by the character of this child every time I interacted with him.

The following entry was recorded in his journal during a magic space experience. In it, he captures his feelings of loneliness at home, while simultaneously being able to re-imagine and realize them positively in the garden:

My magic space is on a little hill overlooking my garden bed. I can hear everything there it is so calm and quiet. The birds are singing. The ground is soft. I feel like I am the only person in the planet (4/19/12).

Carlos and his mother had a "rose garden" growing in pots on the balcony of their apartment. He was very proud of this garden and mentioned it almost every time his class was in the garden. Nothing we grew or did measured up to the experiences he claimed to have had working in this rose garden, or elsewhere on his many reported adventures. He often drew from these real or imagined experiences when he participated in garden lessons and activities. Our fruits and vegetables had nothing on the ones he had seen and tasted in Guatemala. In the spring, he brought me a few pink roses he had grown in a white bud vase. He asked me to return the vase when the flowers died, and said he would bring me more roses. This exchange occurred about five times, until I returned the vase for good at the end of the school year with a rose from our school garden inside of it.

During one interaction outside of his classroom, Carlos' mom expressed concerns to me about her son. She shared that she had been going through some particularly rough times at home, and she worried that her lack of involvement in his life was affecting him at school. I assured her that Carlos was a good student and that he was doing just fine from what I had seen and heard from his teachers. Carlos's classroom teacher found it to be interesting that his mother had confided in me instead of in her. I think it was because I was less intimidating to her as the garden teacher. It was from that point forward that his teacher and I almost took a team approach to mentoring and looking after Carlos. There were many times when Carlos's mother signed up to volunteer with his class or in

the garden; however, she never showed up to help. Carlos would get upset about this, but then he would down-play the situation to make himself feel better. He always forgave her and expressed understanding for these situations with his mother because "she has my new baby now."

Carlos was a very respectful and sweet student who always expressed appreciation for the things we did in the garden. He had a deep interest in science and would often surprise me with the amount of knowledge he retained. His classroom teacher shared with me that all of his free-choice books in the classroom or from the library were about gardening and trees. Perhaps this is one reason he was known among the kids as being "smart about nature." When questions arose while his class was in the garden his classmates would often exclaim that we should, "Just ask Carlos!" Carlos really liked this attention and would always attempt to speak into the question or conversation with something he had read or learned about before. I was always very careful to not contradict, correct, or question his stories, as the one time I did he got very upset in front of the other students. If necessary, I would find a way to re-teach a concept that he might have explained his own way. Being "smart about nature" was an acquired part of Carlos's identity that was positive and served him well in his life at school. This positioning he and his classmates held made him visible in the garden. He invested in the garden because he had a purpose there. He felt he was really needed there for something important.

When I first met with Carlos' class at the beginning of my data collection, he expressed that he wanted to grow "all kinds of flowers, figs, strawberries, blueberries for smoothies, watermelon, green beans, grapes, corn, carrots, peaches, mangoes, lilacs,

tulips, roses, cherries, jalapeños for salsa, and raspberries." He was the only child to include jalapenos on his wish list, as well as to list so many types of flowers. These ideas were prompted by his home and cultural connections to our garden. He later told me that he wanted to raise money for "a lounge area with fresh fruit and a new orange tree." Another time, Carlos left me a note in his journal that said: "Dear Ms. Megan, since I am in the Green Team I would like to plant plants that grow in the winter and would like to have a bake sale to buy seeds." It was not uncommon for Carlos to proposition me with ideas on how to make money for the garden to ultimately buy more things that he felt like we needed there. I argue that this was due to a certain level of resourcefulness he had to learn in his home life, as well as a certain level of dedication he felt to his role in the garden as one of its knowledgeable caretakers.

In response to the writing prompt eliciting his feelings about the garden, Carlos wrote, "I love our garden because it has no pesticides. It's organic and really fun work. The garden would become more beautiful with red roses. Our garden gives us food." As a part of another writing activity, ten words that came to Carlos' mind when he thought about the garden were:

1) Flower cycle
2) Green
3) Investigating
4) Dirt
5) Fruit
6) Fruit cycle
7) Tangerine
8) Vegetables
9) Bugs
10) Bark

Later, when we talked about his list he expressed that he "put the flower cycle and the fruit cycle on there because I know all about them. We learned about that in Kindergarten. We made these books. And then things like tangerines come from that cycle. Dirt and bugs are just a big part of what makes the garden grow. Bark's number ten and it reminds me that the tan bark we have on the ground there doesn't come from our trees because it is too big." Here, Carlos draws from aspects of his environmental experiences that position him as nature-smart.

I have included one of Carlos's poems which reflects his love of flowers, and perhaps, his adoration of his mother and their flower garden at home:

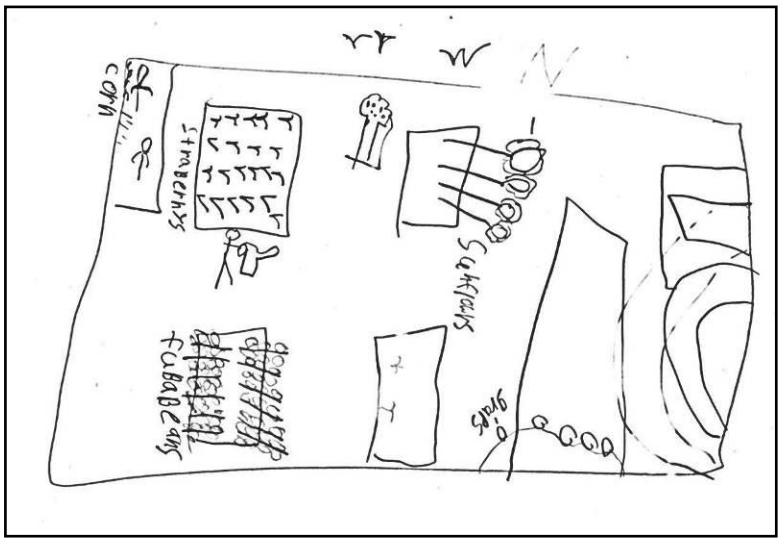
A Flower

I see a flower
It almost is ready to bloom
I hope no one picks it
It is so pretty.
I like flowers
They are habitats
I like daisies
I like roses
I like every flower
You can eat edible flowers
You can water them?

Also worth noting alongside this poem is that Carlos was still early on in his English language development. His poetry writing in the garden became another vehicle through which he practiced his use of English, and throughout the year, his writing improved greatly.

Carlos drew a picture of the garden in his garden journal. He chose to include a sketch of the teaching area and shed, a picture of himself watering near a garden bed, and detailed drawings of some of the garden beds. When we talked about his drawing

together he stated, “I drew that corn by the front next to the strawberries because I think that would be a good spot to put some corn. Then we could even pick it through the fence on weekends when no one is here in case we needed some popcorn or something. And all those sunflowers that aren’t there anymore? I remember them, though. That was really cool how we could walk through that tunnel you made in the bed. I got the fava beans and the strawberries mixed up.” Carlos was serious about the corn, and I let him plant it right where he thought it should go. Even though we only got three unproductive stalks out of his idea, he was proud and absolutely thrilled to share his idea with whoever would listen.

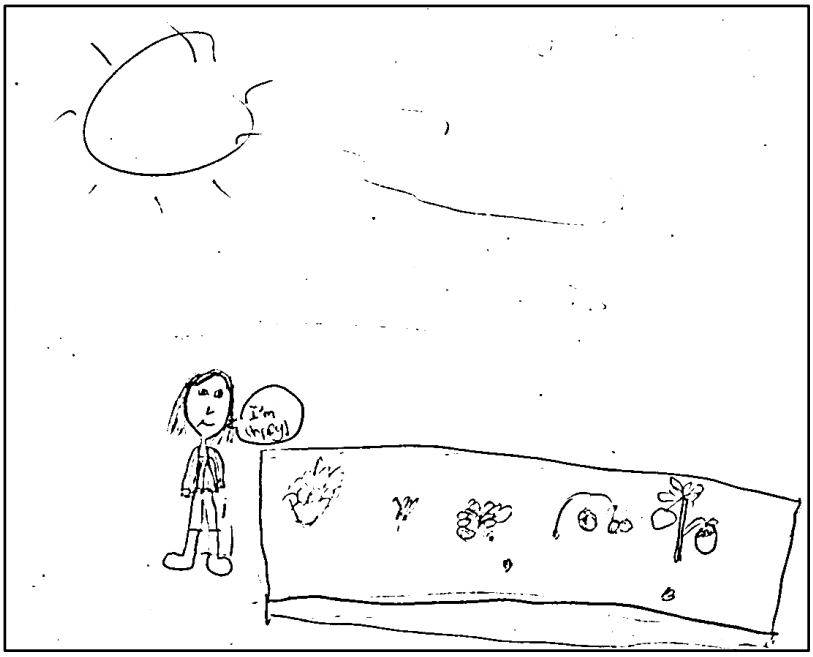


Picture 10. Carlos’ garden drawing, 5/24/12.

Carlos’s entry into and participation in the figured world of the garden provided a space for him to feel needed, wanted, seen, and heard. His engagement in aspects of the garden world shifted his identity in meaningful ways. As he leveraged his experiences and proudly played the role of the environmentally intelligent student in his class, he found a sense of purpose within the garden. At times, the garden activities we did also

provided an emotional outlet or sense of comfort for him. Gardening represented a special way for Carlos to feel closer with his family. With little resources or time with his mother at home, gardening united him with his mother through their shared love of growing flowers. Whether intentional or not, being knowledgeable about gardening also connected him to his estranged father who was a farmer. All of these positive shifts made taking up an environmental identity useful for Carlos, and they brought him into a caring relationship with the garden.

Anna.



Picture 11. Anna's self-portrait in the garden, 3/22/12.

Anna was a Caucasian girl, and she was the youngest child in her family. She had a sister who was in middle school. Her father was a contractor and carpenter, and her mother was a stay-at-home mom who was heavily involved in the school's Parent Teacher Association (PTA). Anna was quiet and often kept to herself. She spent a great deal of time writing and drawing in her journal, and she loved when I would write back to her.

In fact, there were a couple of months where we wrote back and forth to each other in her journal every week. She would ask me questions about my life or give me her ideas about the garden. I would respond back in her journal and end the response with a question for her about school or the garden. She also enjoyed writing garden poetry and would ask if she could share a poem with the class almost every week. Usually, I would allow her to read at least one poem if there was time. Her ability to share her writing with me or publicly to her class often determined the quality of her garden experience each time she visited.

One afternoon Anna's father came by the garden to donate an old compact disc player and a set of large speakers to the program. He hooked them up in the garden shed. His idea was that we could use them to play music during one of our garden work parties. Later, Anna brought a compact disc of salsa music to the garden and asked me to play it for her class during their garden time. Reluctantly, I agreed to play it one day while they were doing chores. This gained Anna positive recognition from her classmates, and she asked me to play the CD every week during her class. I decided we should take a class vote on the music. In part, this was to ensure that the music wouldn't somehow ruin part of the experience for some of her classmates. Also, it was so that it would be clear to her classmates that I was not simply catering to Anna's desires. We talked about it as a group, and everyone wanted the music. It was never my intention to play music in the garden during class time, but I followed the interest of the students and obliged their desire for Anna's CD during chore time.

Aside from the recognition she initially received from the CD, it appeared that Anna did not have many friends in her class. I deduced that this was because she could

sometimes come across as a bit bossy or as a "know-it-all" to her classmates. She did not have much in common with her classmates, and unfortunately, they ostracized her for this. She was the kind of student who always had a comment to share after someone else spoke, or even while someone was still speaking. At times this behavior was innocent, as if she truly could not control her excited impulses. At other times, however, these interjections would take on a different tone or nature, becoming disrespectful to me, her classmates, or the type of culture we had created together in the garden. In this sense, Anna was forever sitting between acceptance and engagement in the program and a total disregard for it. Perhaps this was because she didn't get something she wanted from me. Perhaps it was because she felt isolated from her classmates. As her teacher, the frustrating thing to witness was that her actions were often what isolated her and kept her from getting what she truly desired out of her experiences.

Anna had special access to the garden, and the other children knew it. Anna's mother was appointed by the PTA to oversee the garden and garden program. Thus, her mother had her own key to the garden. She helped with fundraising for the program, organizing the family workdays, collecting and allocating funds, and gathering donations from local stores and organizations throughout the year. She and Anna were often in the garden when I got there in the morning, and they would often linger behind at the end of the day after I left. Additionally, Anna and her mother spent their holiday break building and painting bird houses and decorative signs for the garden, which they hung in the garden on their own accord before everyone returned from break. Neither Anna nor her family had a strong sense of boundaries with the garden shed, beds, or materials. I never

fully decided if this bothered or pleased me, a gray area I found myself in a few times with this family in my two years as the garden teacher.

When I first met with Anna's class at the beginning of my data collection, she expressed that she wanted to grow "sunflowers, apple trees, tomatoes, carrots, wheat, mushrooms, orange trees, grapes, potatoes, and corn." In response to the writing prompt eliciting her feelings about the garden, Anna wrote, "We use the garden for Green Team, garden time and garden parties. I love the garden because we plant in our beds and plant blood oranges for the community. We get to water the plants and help the earth by planting and nourishing us. If my dreams come true, our garden would have me as a friend. Our garden gives us food and love." Referring to the garden as her friend was a common theme in Anna's writing. She was looking for her experiences in the garden to fill a void in her life. She was both agitated and satiated by her garden experiences; the control she felt she had, as well as the control she felt she lacked. This perhaps mimicked other experiences she was having in her life.

As a part of another writing activity, the top ten things that came to Anna's mind when she thought about the garden were:

1) Circle
2) Organic food
3) Seeds
4) Magic spaces
5) Garden beds
6) Give
7) Habitats
8) Fruits and vegetables
9) Friendship
10) Working together

It is evident from Anna's list that the garden was a place at school where she felt she could develop friendships. As she struggled with this in other areas at school, the capital that she held in this space made her feel like she had something to offer her classmates. This encouraged her to keep putting herself out there to her peers. For example, she would often draw pictures of herself in the garden with the things she felt like she had contributed to the space. Then, she would always ask to share these after magic space, pointing out that "this was the birdhouse she made and hammered in by the entrance of the garden." In some ways, I observed this type of attention-seeking working against her.

Anna wrote countless entries in her journal during the school year. She only left a few pages without pictures and words by the end of the year. She was one of the only students who asked to take her journal home weekly, as well as at the end of the year. The following entry was recorded in her journal during a magic space experience. It captures the isolation she felt from her peers, as well as the kinship she felt with nature: *I don't listen to anyone in my magic space. I use my five senses and I only pay attention to nature. The big tree blows and I notice it looks like it might break off. But insects play kind together, and the birds still make dances together above the garden. My friends can't even talk to me after my magic space because I only want to talk to nature now* (4/4/12).

The first poem of Anna's I selected to include highlights the push and pull relationships she had with her peers. When she read it out loud, she read it very dramatically:

<u>The Baby Birds in the Garden</u>

Baby birds in the garden
Sing so sweet songs

Singing in treetops
The baby birds go to sleep
They wake up in the garden
Saying hello to everyone
It's finally spring
The baby birds get ready to fly
Oops!
One baby bird pushes the other two out
But the baby birds start to fly!

Much of Anna's poetry also reflected notions of her living in or with nature. In addition, she often expressed having a special type of kinship with nature that she felt her peers didn't have or couldn't understand. As shown in the second poem of hers I selected, she would write herself into a bond with nature, while she would write herself out of social relationships with her peers:

<u>In the Garden</u>

I live in a birdhouse
Birds also live with me
I play with them too
They also tweet at me
I can only be nice to them
And they also see the rainbow colors.

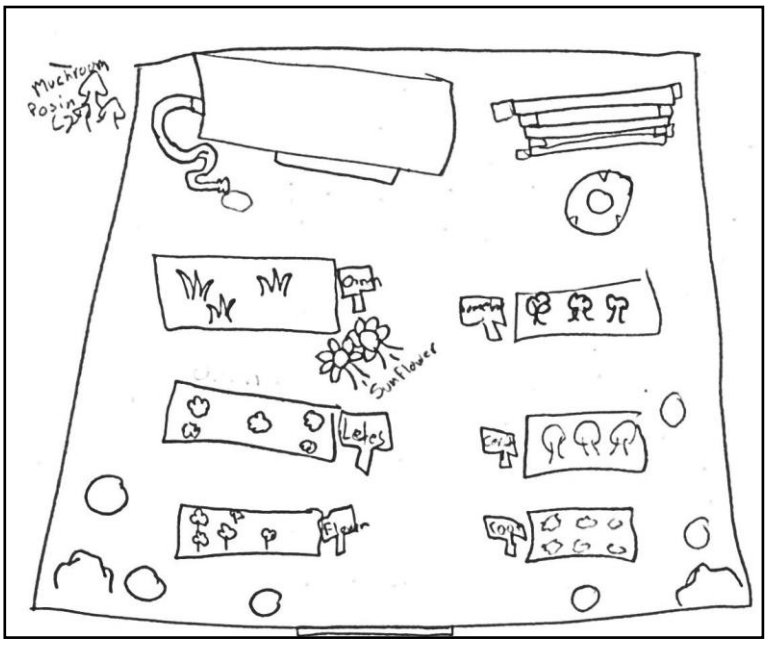
The third poem of Anna's I chose to include was selected for its beauty. Anna wrote and said so many beautiful things during our time together. She had an eloquent voice, and these words captured the brightest, most fulfilled side of Anna's garden experience:

<u>Days in the Garden</u>

Ladybugs and spiders
Other insects too
Sunshine, water, birds deep in the forest
Seeds sprout then plants
The garden grows in peace

Animals, plants, and water with sun
Days in the garden go by in peace.

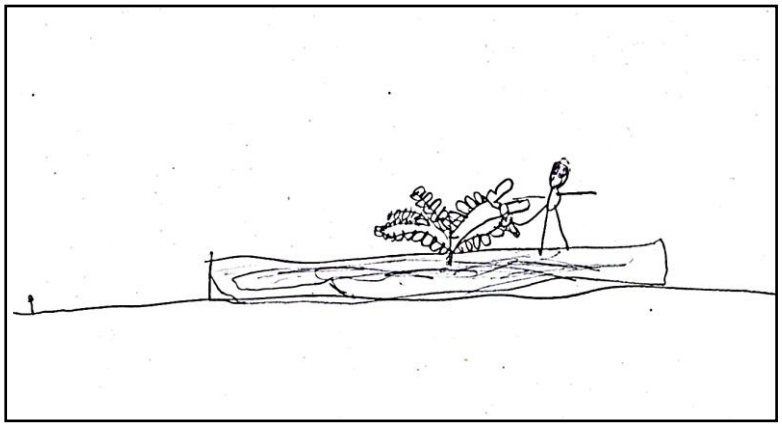
Anna drew a very nice picture of the garden in her garden journal. She chose to include a sketch of the teaching area, the shed with a hose, detailed drawings of some of the garden beds, and a sketch of poisonous mushrooms growing outside the garden gate. When we talked about her drawing together she stated, "My drawing looks exactly like the garden, I think. There really are poisonous mushrooms out there because I saw them when I was coming down that path to school yesterday. The circles are where we decided to put the birdbath and most of the birdhouses. It's like you are looking down at it all from the sky. They are roundish because they are made out of that clay stuff, so they don't really look like that. That's why the shed looks like that, too. That's the best I can do at drawing the garden." As was the case with any of the work Anna produced and shared with me, I was impressed with and validated her work.



Picture 12. Anna's garden drawing, 5/24/12.

Anna came into a caring relationship with the garden in a variety of ways. She was one of few Caucasian students in her class, and she was out-casted in her class for reasons that were both beyond and within her control. Anna participated in the figured world of the garden because her experiences in the garden could gain her moments of recognition and acceptance among her peers. These glimpses of social acceptance could be the brightest parts of her school day. Her caring relationship with the garden was often conditional and based upon her daily experiences. If things went her way on a particular day, the garden became more of a backdrop for her social pursuits. However, during the times when she felt friendless and misunderstood by her classmates, she would retreat into the garden and find feelings of comfort and friendship in nature. Additionally, Anna felt a sense of power in the garden, which built her social confidence and brought her a sense of pride. The garden was a high impact space where she and her family could give of themselves and their familial resources and leverage these for recognition and validation in the school community. Anna and her family took a lot of pride in work they did for the garden, and they were an asset to the program.

Jamaal.



Picture 13. Jamaal's self-portrait in the garden, 3/22/12.

Jamaal was a Nigerian-American boy, the youngest in his family of five. He had two older sisters, one in fourth grade and one in middle school. His dad was a mathematician, and his mother worked nights as a nurse. I did not have any interactions with his family in the garden, but his parents were known for their generous donations to our PTA fundraising drive, which funded the gardening program. Jamaal was always hungry, and he would eat things in the garden (with or without permission) almost every week when his class was there. It didn't matter if the fruit or vegetable he was eating was even ripe. His classmates thought this was very funny. He was very excited about planting lettuce to "make a delicious salad with ranch dressing," but unfortunately, he was not there when his class harvested the bed and had their "salad party." He was pulled from school before the end of the year after standardized testing, as his family was spending the summer with their relatives in Nigeria.

I had a difficult time personally connecting with Jamaal during our class time together. Jamaal was a loner, an independent student. He had many varied levels of development. While he had strong cognitive abilities, his emotional and physical abilities were not as well developed as his intelligence. Sometimes he would laugh, blurt out funny comments, or act out in other silly ways when he expressed feelings of confusion, frustration, or embarrassment in the garden. He resisted organized activities in the garden and would often just wander around looking at things. His movements were fast and random, and he often ran (against the rules) from bed to bed, or activity to activity to look or taste. In general, he laughed a lot. However, he often tried to make friends in his class by placing himself as the object of the joke. Because of this, I feared his self-

esteem was low and that he lacked social skills. His teacher reported that he struggled in the classroom with a lack of self-control and control over his body.

Jamaal was always the last child in his class to leave the garden, often lingering inside the garden gates until the last student in the line had turned the corner back to their classroom. His teacher did not notice or care too much about this. She knew this was important for him. It was during these brief moments that I felt like I saw and got to know the real Jamaal. He would talk very rapidly and get out as many questions or thoughts about the garden as he could. Usually if he asked questions, they would be in rapid succession and only required a yes or no answer from me, when he paused to actually hear my response. For example, "Can you eat the seeds out of a sunflower?" Or, "Can I take some mint home to make tea?" Or, "Can I stay longer and help you put the shovels away?" All the while, I was doing my best to corral him toward the entrance to reconnect him with his class. In our last moments before I hugged him goodbye, he would smile and tell me that he loved going on "field trips to the garden."

When I first met with Jamaal's class at the beginning of my data collection, he expressed that he would love to plant "watermelons, steak, oranges, green sour apples, lemons, and carrots. Maybe trees of cucumbers, tomatoes, and strawberries, too. I want to build a peach tree." His wish list included things that we could actually grow, contrasted with items such as "steak" and "trees of cucumbers, tomatoes, and strawberries" that were either included to elicit some sort of response, or because he lacked knowledge about the origin of these foods. As he chose not to share this list out loud with his classmates that day, I deduced that he was most likely unaware that we could not grow steak, or that cucumbers, tomatoes, and strawberries did not grow on

trees. Usually if he completed an assignment, he did so because he wanted to play with it in some way, and then share it to get a laugh out of his classmates.

In response to the writing prompt eliciting his feelings about the garden, Jamaal wrote, "I like our garden because we have a new worm home and when you leave the garden, you can look at it. Animals can live there and it is good for them." As a part of our free-write activity, the top ten things that came to Jamaal's mind when he thought about the garden were:

1) Sunflower
2) Water
3) Bird
4) Bee
5) Sun
6) Seed
7) Idea
8) Friendship
9) Green
10) Red

When we talked about his list at a later date, I asked him why he had the word "idea" on his list. He explained to me that he had "better ideas about how to act in the garden." As I probed further, he went on to explain that "I want to learn how to grow plants fast. So, I am going to behave good." Somewhere along the way he had internalized that his behavior prevented him from being successful, but the garden was giving him a new opportunity to try again.

Jamaal's journal was relatively empty at the end of the year. Looking through it, the journal activities he completed most were sketches of something during magic spaces or rubbings of leaves or bark. He had two complete poems in his journal, so I have chosen to include them both. It should be noted that his teacher sat with him while he

wrote both of these poems, and she helped him to complete them. In his first poem, he writes about a butterfly he would like to have. He wrote this poem on the day of the fifth grade butterfly release in the garden:

Trapping a Butterfly

I see a butterfly.
It is beautiful and has yellow wings with black spots.
I like it.
I wish I can have one.
But no, they can die because they need to be in nature.

In his second poem, he writes about "the dead rat I found in the garden." During this episode, the students discovered a dying rat in the garden. I could not pull Jamaal away from the rat the entire class period. His teacher sat with him to ensure that he would not touch it while he studied it. As it was not quiet dead when the students found it, he suggested that we "hit it with a shovel and say a prayer over it so it will stop hurting." I did not think this was a good idea, and I moved the rat to another location after his class left. This rat episode fascinated Jamaal all year:

Bugs and Rats

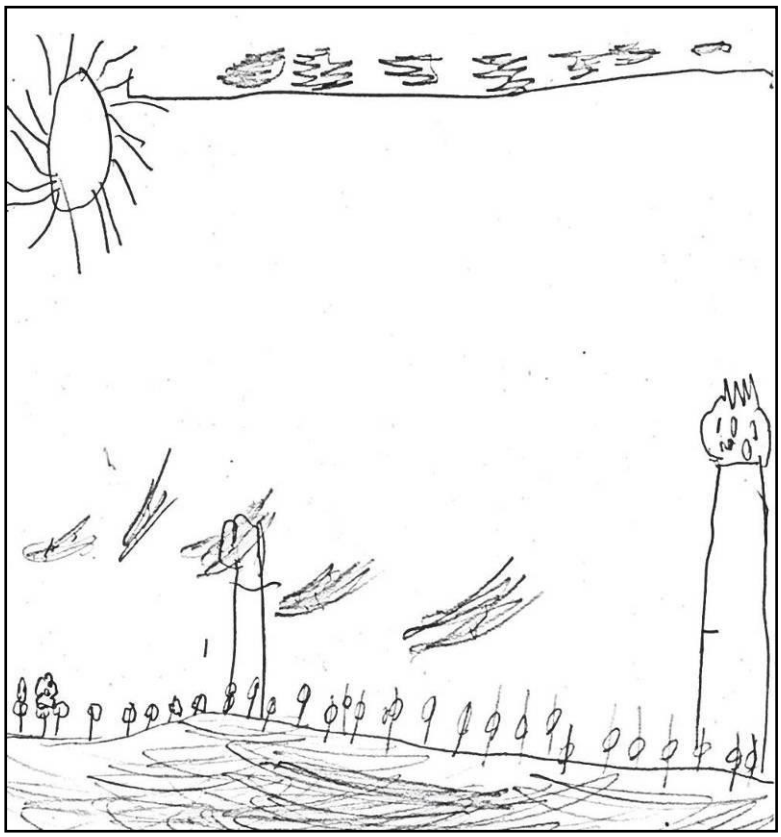
I saw a rat next to a tree staring at me.
I ran away before I could say awesome!
Then it stood there like a statue.
It just stood there.
Then I see a bee staring at me!

Instead of writing in his journal, Jamaal much preferred to talk about his experiences. The following quote was a verbal response to my questioning about his magic space experience that day:

Ever since I got back from my magic space I hear tons of noise…my thoughts are all blurred together, but when I was sitting still in my space, I couldn't stop the good thoughts from coming out my head (4/26/12).

As he discusses here, the garden afforded him a sense of creativity and clarity. The fact that Jamaal had the freedom to follow his interests and fascinations in the garden really drew him to the experience. Discipline looked different for him here, too. His classroom teacher did not have to be as rigid with him in this space, so there was a relaxed tone to their interactions that seemed refreshing to both of them.

Jamaal drew a picture of the garden in his garden journal. He chose to include trees, a patch of flowers, and a cloudy sky. Jamaal's picture lacked detail or any specific identifiers that indicated it was actually a drawing of our garden. This was characteristic of most of the drawings he did. He did not want to sit and spend any time on them, and I did not force him to do so. Garden class to him was about moving around and exploration. After all, he had to do "a ton of writing and drawing in his classroom." When I asked him to explain his drawing of the garden he stated, "We are going to plant a seed and it is going to be organic. When it grows we eat it. It will taste good."



Picture 14. Jamaal's garden drawing, 5/24/12.

Jamaal's entry into and participation in the figured world of the garden provided a space for him to spread his wings at school. He was able to engage in the garden experience in ways that felt interesting and comfortable to him, and this shifted his school identity in meaningful ways. As he leveraged his freedom and tasted fruits and vegetables at his leisure, he found a sense of personal freedom within the garden that built his appreciation for the overall experience. The garden was giving him snacks, as well as a place to test out a little self-regulation. In other areas at school he struggled academically and behaviorally, so the successes he found in the garden improved his self-image with his teachers. In the garden, no one pushed tenets of his behavior plan on him. He was able to leverage this facet of the experience for his own personal growth. When not pushed to produce pieces of writing or to endure in an activity that he didn't like,

Jamaal demonstrated a love of environmental learning and experimentation. Here, his inquisitive nature would shine through, much to the delight of those working with him. All of these positive shifts made taking up an environmental identity attractive for Jamaal, and they brought him into a relationship with the garden.

Emerging Categories in Student Data

To continue to tell and connect the stories authored by student participants in the garden, I will next highlight the salient means by which an ethic of environmental care was produced in the five student cases. These means will be presented within three research categories, which were drawn from coded data detailing the activities and experiences of the five students of interest in the case study. To analyze and triangulate the collected data, the constant comparative method was employed (Creswell, 1998). This method combined "inductive category-coding with simultaneous comparisons of social incidents observed and coded" (LeCompte & Preissle, 1993, p. 256). Related codes were then condensed and combined to form the broader research categories, which were heavily represented within the student data. In some instances, categories were based upon interactions between students and myself as the teacher/researcher. In other instances, categories were based upon interactions students had with other students in their classes. The emerging categories were supported through research vignettes, quoted conversations, samples of student work, and field notes taken throughout nearly two years spent in the field as the garden teacher.

When each category is presented, I draw upon data from the five student cases which support the research category. As I expand on each category with examples of its presence in my data, the interplay between what is known in the literature and what I

came to understand in my own work situates my findings in the context of the children's lives. In the following chapter, these three categories will be collapsed again into larger themes, or assertions, which will further address my research question and contribute to relevant bodies of literature. These two themes will be fully explored as a part of a broader discussion of this work.

I observed Max, Luna, Anna, Carlos, and Jamaal producing environmental identities in the garden over the course of this study by: 1) Participating in garden activities and practices; 2) Leveraging garden artifacts and experiences in personally meaningful ways; and 3) Forming caring relationships within and with the garden space. In some instances, the children's environmental identities were formed in exact sequence with these research categories: Participation; acquisition; care. In other cases, the children's participation and engagement was conditional upon their relationships with and within the garden space. In each of the student cases, however, the child's path was motivated by and through his or her unique histories-in-person (Holland & Lave, 2001). Thus, it was the intentional interplay of these phenomena which shaped the children's path to environmental identity production in these case studies.

Category One: Participating in Garden Activities and Practices. To inspire environmental identity production and care as a part of the children's garden experiences, it was necessary that the children actively engaged with the culture of the garden and its activities (Zavestoski, 2003). While participation in various types of garden experiences impacted the students differently and at different times, the data revealed that all five students' environmental identities developed through their active participation in garden practices over the course of the study. Students' sustained participation in the garden was

the constant, revolving process by which they pondered who they were or refigured whom they wanted to be (Holland et al, 1998). In the garden context, the children's participation provided them with opportunities to explore their new self-understandings-in-practice, as well as their evolving relationships with nature.

This category encompasses all of the ways in which I observed the children refiguring, maintaining, or engaging with the creation of a garden world through participation in various garden activities and practices. This participation, as previously mentioned, was theorized as participation in the creation and maintenance of a figured world (Holland et al., 1998). To participate in the garden world, the students had to show up and take part in the emergent, learning provocations. However, participation in the school garden also meant becoming a part of the garden story. It meant contributing value to the garden and acquiring personal value from it. It meant being shaped by and shaping the garden space. In this study, I witnessed all five students consciously or unconsciously draw upon their personal experiences in the garden to establish an environmental self (Clayton et al., 2003; Zavestoski, 2003).

Within the emergent design of the garden lessons, students had a wide variety of options for participation and identity negotiation. In fact, the cultural forms and acts of participation particular to our garden were as diverse as the students themselves. Our emergent garden experiences provided notable time and space within an otherwise structured, hurried, and standards-focused, school day for the children to figure out who they were in relation to others and to the natural world (Jones & Nimmo, 1994). A slow pedagogical pacing allowed the children to stop and linger on topics and ideas of interest (Payne & Wattchow, 2008). Within the emergent format, the children's participation and

engagement in the garden was both personal and social in nature. While children like Max, Luna, and Carlos took more away from the social learning experiences shared in the space, others like Anna and Jamaal developed more during personal times of exploration. In each of the five student cases; however, both types of participation had notable impacts on students' environmental identity production. I will first explore students' engagement with the garden through their participation in more personal activities.

Whether sitting in stillness in their magic spaces, exploring something quietly for a length of time, or doing chores in the garden, participation in a personal way was demonstrated in moments of the children being or processing instead of doing. This data originated through the time students spent writing in garden journals, sitting in magic spaces, listening to stories during a teacher read aloud, digging in the soil, quietly observing something, or watering plants. These personal times of reflection and processing, which were built into the garden program, allowed children the time and space to center themselves in their experiences and to develop a sense of clarity during quiet moments in nature. As the children took advantage of these quiet, personal times to connect with nature, it was observed that their sense of self and experience was better understood (Payne & Wattchow, 2008; Zavestoski, 2003). By following the wisdom that resulted within their own hearts and bodies during reflective times, they embarked into personal, meaningful lessons and interactions during garden activities.

As previously discussed in the research findings, one of the most powerful personal experiences for children in the garden was the magic space ritual. All five of the students were active participants in this activity each class period, and they all expressed a desire or need for this quiet time in their own garden spaces. Magic spaces provided

the children with the time and space to process their garden experiences and to connect with their inner selves (Malone, 2004). Here, they could process what they were experiencing and attach a set of personal feelings to it. Further, they could choose to express themselves in a way that felt good to them. The accompanying drawings, poems, and narratives became concrete examples of identity negotiation (Ahn & Filipenko, 2007). Written and spoken reflections after magic spaces, shared publicly or not, uncovered reoccurring ideas regarding students' personal relationships with the garden. Over and over, the children's connections to nature during magic spaces were described as being similar to relationships with family members or friends.

The data revealed that the more personally-directed experiences in the garden were particularly fruitful for Anna and Jamaal, as they found in these experiences expressive opportunities or feelings of belonging that were lacking in other areas of their lives. At many points during the study Anna personified the garden and proclaimed it to be the only real friend she had in her life. As she referred to the garden in this personal way, she positioned herself in a relationship with the garden space. In his personal moments, Jamaal found new opportunities to learn in his own way and to practice self-regulation. The feelings of freedom that Jamaal felt within the garden structure opened up new possibilities for him to connect with his environmental self. Further, the social success Jamaal had in his solo, interest-driven experiences changed the way he viewed himself and was viewed by his teachers. Each of these children's personal pursuits and experiences shifted their identities positively and bonded them to the garden experience.

While the students would sometimes keep their feelings to themselves, there were plenty of times during which they would share or compare their thoughts with their

classmates. This is where the more social aspect of the garden experiences presented itself in the student data. On the other end of the participation spectrum, this category also encompasses all the ways in which I observed the children in this case study connecting with the garden during social experiences and within the Reggio-inspired, emergent design. This data included children utilizing the time and space the garden provided for play and social interaction, as well as leveraging aspects of nature in social episodes to negotiate meaning or to gain a new identity positioning (Holland et al., 1998).

In this work it was evident that the child-centered, emergent design of the garden provided children with an unexpected time and space to explore, interact, and play at school (Edwards et al, 1993). There, I let the children play and experiment with natural materials as much as possible. Participating in play in the garden meant using one's imagination, acting out real or imagined situations, following playful interests, and engaging in environmental learning through creative means. Playing in our garden did not cost money, and it involved utilizing a level of creativity with natural props that were available to everyone. Here, I observed new possibilities opening up for children such as Luna and Carlos, who may have had very little at home, but could be successful at imagining and creating in the garden. Their play and social interaction, which was quite intentional, seemed to allow them to negotiate and rectify some of their feelings about their home lives. Jamaal also found a connection to the garden because of the amount of play and informal learning he was allowed to engage in during his class garden time. In one way or another, all of the children reported loving the garden because they liked the play that was allowed to happen there.

The children under study also participated in the garden activities in more intentional ways as a means of negotiating meanings or gaining social positioning, recognition, or acceptance from their teachers or from their peers (Brooker, 2006). Max, Carlos, Anna, and Luna each found a sense of investment in the garden space as a result of their social pursuits and personal gains in the garden. These students' particular engagement in garden experiences provided them with opportunities to acquire new positionings and desired labels of "smart," "cool," "sweet," or "funny." As they adopted these labels and positionings in the garden, they moved themselves closer to the idea of who they wanted to be. As the students benefitted from the social interactions afforded to them in the school garden space, their affinity toward the garden shifted and/or grew as well (Noddings, 1984).

To connect this category to relevant literature on identity, children's active participation in both personal and social garden activities became the foundation for children's environmental identity production (Miller, 2007). The activities in which the children participated were the very sites of children's environmental identity negotiation and production. Further, the garden activities in which they participated were also the means by which the children acquired the necessary tools to improvise, refigure their histories-in-person, and produce environmental identities (Holland et al., 1998). Through participation in individual and group activities, the children in this study took up aspects of the garden world to mediate self-perceptions or to express caring connections with nature. The documented participation of the five students in this study shaped the world of the garden, which was also shaping them. Their participation allowed them to do work on the garden, as well as for the garden to do work on them.

Category Two: Leveraging Garden Artifacts and Experiences in Personally Meaningful Ways. As the children participated in the figured world of the garden as a process of environmental identity production, the children leveraged garden artifacts to devise new actions or responses to situations. The children's actions and reactions then shifted their identity positionings and produced new ideas about the self (Urrieta, 2007). This engagement, conceptualized as the co-creation of the garden world, built their investment in the space. When their participation in the garden world positively benefited their lives in some way, new self-concepts formed to incorporate aspects of the garden world or tenets of an environmental identity (Noddings, 1984). All of the children in the case study were observed embracing artifacts within the garden to communicate to themselves and to others their new identities (Holland et al., 1998). In the context of this work, artifacts were classified as both objects and experiences (Penuel & Wertsch, 1995).

While the students in this study participated in the garden and leveraged garden artifacts, they also engaged in reinterpretations of their histories-in-person (Holland & Lave, 2001). As they meshed aspects of their school garden experiences into their home lives and their existing identities, the children reinterpreted their histories-in-person to incorporate aspects of their school garden experiences. While this process was more present in the data for some students than others, the data revealed instances of the students reinterpreting and refiguring their pasts with new understandings of themselves to shift or produce environmental identities. As the children made new meaning out of their garden experiences and forged new self-understandings in the process, their emotional connections to the garden space were strengthened (Urrieta, 2007). Each

child's identity shifted in response to their own unique histories and cultures, or because of what personally touched them within the experiences they had in the garden.

Thus, this category captures all of the ways in which students formed environmental identities by creating and leveraging garden artifacts and experiences. As the students' histories-in-person shaped the artifacts they created and leveraged, this category also represents the ways in which the students' home lives impacted their artifact creation and processes of meaning-making. It considers the students' environmental influences on their families, and vice versa. It also represents the powerful stories and images of families volunteering and working in the school garden together and the transfer and application of knowledge across these boundaries. How and why the students assigned meaning to certain garden objects or experiences, as well as how and why they connected these artifacts and experiences to their own cultures and home lives required a certain level of interpretation within the student cases. I will first examine students' creation and leveraging of garden artifacts.

From an outsider's perspective, I am certain our garden looked like its own little world. After all, it was a created, figured space that had its own participants, structure, culture, values, and language. We had many rituals (magic spaces), sound effects (imaginary bird calls), nicknames for objects ("plant babies"), and routines (circle times) that characterized and defined our shared experiences. These were some of the artifacts of our garden world, and they were shaped and assigned meaning by everyone who participated in the space. Knowing the ways of the garden was considered to be a privilege by the students, parents, and teachers at this school. There was a certain kinship that we all felt and expressed because of our shared cultural artifacts and experiences.

Furthermore, the artifacts of our experiences built bridges across our cultural, racial, financial, gender, and age differences.

The students' attachments to and use of various garden artifacts allowed them to draw closer to their experiences, gain new positionings, and redefine aspects of themselves (Holland et al, 1998). More often than not in the data, using or leveraging an artifact in the garden meant physically taking it, trying to own it, or acting on a desire to show it off to someone else. Over the course of the study, I observed all five of the children collecting and taking objects from the garden almost every time they visited. Sometimes they would ask permission to do so, and sometimes they would not. When the students did ask permission, the need was most often framed as an opportunity to show a family member or friend at home something from the garden that they had never seen or experienced. If it was a food item that was deemed delicious, they were desperate to let their parents or younger siblings also taste it. Some of the items I observed children collecting or removing from the garden included sticks, rocks, mint leaves, flowers, seeds from many different plants, and whole fruits and vegetables. As previously mentioned, it did not matter to Jamaal that the fruits or vegetables he was taking were not fully grown or ripe. Luna even dug seeds from overripe fruits and vegetables out of the compost bins to own, expressing that if "they are being composted, they are free."

Over time I deduced that one of the ways the children leveraged an artifact was by attempting to own it. In the data, the students desired to own certain artifacts to: 1) Learn something new or to satisfy their curiosity about a topic; 2) To escape boredom or maybe even reality; 3) To satiate a passion for the collected object; 4) To differentiate themselves from their classmates; or 5) To more strongly associate with their classmates.

At this school and in this garden, the act of collecting and taking artifacts from the garden was contagious. When one student was given permission to take something, a ripple effect occurred. For most of the children, it felt really unfair if they didn't get to take something also. The littlest object or artifact, when acquired in the garden, was like gold. It was very difficult for me to tell a student that they could not take something. In most instances, the students at this school had such little freedom in this way. Also, I was thrilled that the students wanted to share some of their experience with others. Whatever the reason, the garden was a provider for the students, and taking an artifact from it strengthened the students' connections to it.

To connect this finding with the literature on identity development in figured worlds, how and why an object or experience was revered was also considered alongside students' home lives and cultures in this work (Holland et al, 1998). Here, I came to understand that I could never fully understand this aspect of the children's lives as the "other." However, to promote spaces of understanding as a researcher, to build upon the children's home-school connections, and to allow for a diversity of artifacts to be created and valued within our garden world, I upheld and examined the impact of culturally-inclusive practices in the garden. These practices were centered upon diversifying the garden experience, or allowing everyone who participated to be able to find a little of themselves in the garden space. As indicated in the student cases, these garden-home connections had a direct impact on Max, Luna, Carlos, and Anna's environmental identity negotiation.

As a part of this practice, many plants grown in the school garden were native to the children's countries and cultures. In the garden, the students designed, planted, and

harvested multicultural food. Children grew fruit, vegetables, and herbs from all around the world. The students prepared traditional dishes using the produce from our garden, shared stories and information about their different cultures, and celebrated their achievements with the whole school community. As we planted native plants, harvested the crops, and prepared multicultural dishes such as pupusas or salsa, Luna and Carlos were provided with specific entry points into the garden world. It was evident in the data that these experiences allowed these students to find themselves in the garden, and for the garden to find its way into their identities. Overall, it was observed that these types of garden-home connections increased students' emotional investment in the garden space.

When Anna or Max's families were present in the garden, I witnessed them explicitly teaching their children values such as respect, hard work, understanding, acceptance of other's views, integrity, consideration of others, and reliability. These ideologies framed the students' histories-in-person and were often leveraged during their regular garden classes. In the data, a key time this type of teaching occurred was during the garden work parties. Work parties were held on the weekends and brought together people of different age groups and ethnicities:

Picture 15. Sharing words of wisdom.

Picture 16. Mending the irrigation.

Picture 17. Beautification.

Picture 18. Working together.

Picture 19. Teaching new skills.

Picture 20. A family effort.

Picture 21. Multi-generational lessons.

Picture 22. A fresh start.

Garden work parties provided a time and space to celebrate cultural diversity, strengthened the students' links with their communities, and of course, reinforced an ethic of environmental care.

As the children entered into and participated in the figured world of the garden, they shaped and were shaped by the garden space. Through their engagement, they began to understand the structure of garden space, their places within it, and if and how they belonged there. Through the lens of their home and school experiences, the children began to formulate which aspects of the garden could be beneficial to them. Constantly framing and reframing their acquired artifacts and experiences through the lens of their histories and cultures, they experimented with what they could acquire and leverage in the garden space to enhance or improve their lives. If something was perceived to be beneficial, it was intentionally taken up and incorporated into the child's self-concept. These new self-positionings prompted the children to form caring relationships with the garden space (Noddings, 1984). These relationships were the products of their experiences and indicators of environmental-identities-in-progress (Clayton et al., 1993)

Category Three: Forming Caring Relationships Within and With the Garden Space. As the children participated in the figured world of the garden as a process of environmental identity production, it was noted that the children formed caring relationships within and with the space which also impacted their environmental identity development (Noddings, 1984). These relationships were forged with each other, with me as the garden teacher, or with objects in the garden itself. Further, the relationships formed at different times within children's experiences, and they occurred for reasons which were specific to each child. Despite these differences, the data revealed that all

five students formed caring relationships within the garden world that initiated, produced, or solidified the children's caring, environmental selves. Theoretically, the relationships that the students formed played an important role in shaping the figured world of the garden and what mattered in the space. Their engagement with these relationships, in turn, impacted the students' environmental identities-in-practice.

This category describes the occurrences by which I watched children develop caring relationships in the garden as a process of identity negotiation and production. The student data highlighted many ways in which the children related with aspects of the garden world; however, there were two types of relationships which were revealed as having the most impact on the students' feelings about the garden. These included forging connections with objects in the garden and forging connections with the garden teacher. While Max, Anna, and Jamaal connected more with certain objects or aspects of their garden experiences, Luna and Carlos benefitted most from their relationships with me. I will first touch upon the impact of the caring relationships and empathy the students developed for natural objects in the garden.

In this study, it was observed that the students attached significance to nature and natural items, and that they regarded them as moral objects. It was through these feelings that they felt charged to protect nature in the space due to a sense of ownership or connection they felt with it. In the setting of the garden, students often explored plants, bugs, and their natural surroundings without the constant supervision of the garden teacher. Here, students would have to negotiate the "right" and "wrong" things to do in the garden on their own. In the examples of the ant, caterpillar, or injured rat, the students in the case study controlled their impulses and reasoned upon a stance of care

and stewardship. Also occurring in the data, Luna and Max were even observed educating or convincing their peers on the nature-sensitive approach to dealing with undesirables in the garden. Over time, I observed all of the students in the case study utilizing varied strategies to familiarize each other with practices of environmental responsibility. In some instances, this was a mimicking or continuation of the environmental practices in which others were engaged in the garden. However, at other times this emerged from an affinity the students reported developing with their natural surroundings during their garden activities.

An object that the students had a particular desire to care for and protect fiercely were the "plant babies," or the plant seedlings in the garden beds. In the beginning of the year, Luna referred to the sprouts as "plant babies," and the name stuck throughout the year among all of the students. This name truly captured the emotional and almost affectionate ways students felt about the sprouts. As a part of this theme, I witnessed the students overwhelming desire to sit beside, protect, and defend the seedlings from other students or pests. Three of the children chose magic spaces that were near the sprouts so they could watch over them. They designed creative approaches to safeguard their seedlings, they sketched them and wrote about them, and they left small offerings next to the seedlings to encourage their growth or to show their appreciation.

Through the caring relationships formed with natural objects in the garden space, the children built a sense of purpose and connection in the garden while engaging their imaginations and emotions. This sense of purpose and connection, which was demonstrated through their caring actions and rituals, reveals one explanation for the physical and emotional connections the children expressed feeling to the garden world

(Zavestoski, 2003). In Max and Carlos's case, the sense of purpose the garden provided to them in this realm was observed as being valuable in both the knowledge they gained in the garden context, as well as in the bond that they formed with the space (Sobel, 2008). Affective and cognitive dimensions were woven together in their lives to form a sense of place that involved feeling close to nature, as well as knowing about the soil underfoot, the flora, and the fauna (Sobel, 2004).

As this category encompasses the emotional investment students had in the figured world of the garden, it must also include students' relationships with me. Thus, this category also includes all of the moments when my emotional relationships with the children impacted their environmental thoughts, practices, and identities. In my role as the garden teacher, I had a strong desire to model environmental stewardship and care to the students in my classes. Or, as Rachael Carson (1956) put it, I wanted to be the caring adult for some of these children who could show and teach them the wonders of nature. Within my best and worst days there, the children were always looking to me as a model of appropriate thoughts, behaviors, and actions. Thus, this category also innately encompasses the missteps and moments of struggle I had as a teacher, researcher, lover of children, and role model of an environmentalist.

Throughout the course of the study, I recorded numerous instances of students seeking a relationship with me, and then being impacted by that relationship in some way. There were examples of these relationships forming out of both healthy and unhealthy motivations, and having either a positive impact or no perceived impact in the data. Luna demonstrated that our relationship was her biggest draw to the garden world. She expressed wanting to be like me in her life, and she would try to uphold our

connection by engaging in stewardship behaviors that she thought I would appreciate. For Carlos, I was a person who tried to understand and help him to bring his home and school lives together. This made being in the garden with me a safe and nurturing place for him to evolve. His mother and I had a connection, too, which further edged together that gap in his life. For Jamaal, I was a teacher who gave him personal freedom. His actions demonstrated that he felt empowered within our dynamic, and this bonded him to me and the garden experience. These relationships, formed for various reasons through the garden, brought about positive effects for students which were observed and reported over the course of the study.

Be it through writing me letters, doing things to impress me, seeking validation from me, or even copying my behaviors or words, Anna or Luna also pulled closer to me because they desired to feel like they were doing things the "right" way in my eyes. In these moments, they were acting out a need they had to feel a sense of acceptance or approval. As a teacher who was constantly trying to devalue her authority and to build children's confidence from within themselves, this attention-seeking caused me to become aware of my powerful role in the figured world of the garden. While I wanted to model positive behaviors and maintain positive relationships with the students, I did not want them to attach too much value to my position. I ultimately wanted them to find their own way into the garden and into environmentalism. The students' relationships with me guided them toward new views of nature and themselves (Holland et al, 1998).

It should be noted that, especially in first grade, the students were also impacted by their classroom teachers (Holland et al, 1998; Jurow, 2005). The teachers involved in this study found creative ways to tie the garden into their classrooms and teaching

practices. I would often hear of ways they were using the magic space activity on field trips to connect the students with a new space upon their arrival there. I also learned of students and teachers building habitats in or near their classrooms, composting in their classrooms, and raising money to buy receptacles in which to grow their own plants both inside and outside of their classrooms.

To connect this category to relevant literature on environmental identity formation, children's relationships that formed within and with the garden space became a means by which the children positively experienced the garden world and produced environmental identities (Noddings, 1984). Relationships in and with the garden were positive interactions that allowed the children to feel comfortable in nature and to develop empathy for it (Kahn & Kellert, 2002). As the children in this study explored the garden world and learned about their place in it through their real and imagined relationships, they developed an understanding of it and a bond with the space (Sobel, 2004). In this work, the children's relationships in and with the garden became intimate associations that the children had with the space. These associations connected them to nature, enabled them to love the garden, and encouraged them to form caring, environmental selves (Sobel, 2008).

Relationships formed in the figured world of this garden based on students' desires to enter into or connect in the garden world. Taking up relationships in the garden was another way of participating in the creation of the garden world, as it called for either an alignment with or detachment from the principles and practices of the world. The connections that the children made, which were products of who and what was in the space, repositioned them in the figured world of the garden and shifted their identities

(Holland et al., 1998). While environmentalism was modeled and encouraged in the figured world of the garden, the children in this study took up these behaviors if they perceived them as directly benefiting their lives in some way. This established a reciprocal relationship between the children and the garden; thus, allowing them to form caring, environmental selves (Noddings, 1984).

Summary

Data in this chapter informed: 1) The structural and curricular choices that contributed to the shaping of the garden space and subsequently, its participants; 2) The expressed identities of the five students of interest as they entered the garden experience and participated in emergent, garden-based activities; and 3) The processes or means by which the five students' demonstrated an ethic of environmental care as they shaped and were shaped by the figured world of the garden. From this student data, research categories were derived and presented to purport the type of garden world created in this work as a valuable space for environmental identity production. The categories also emphasized the validity of the figured world framework in the design and study of environmental identity.

Across all five cases, the children in this work demonstrated an ethic of care for the garden that was developed from and enacted through personal intersections of history, social context, culture, and power (Holland et al., 1998). While all of the students came with their own backgrounds and personal histories, they were able to access and leverage the garden experiences in their own way for personal perspective or gain (Holland & Lave, 2001). Through participating in the garden, creating and leveraging garden artifacts, and forming caring relationships in the space, environmental identities were

taken up and became durable as they positively impacted participants' lives. Whether the students were making up games or tossing bugs into a spider's web, having the time and space to explore freely within this natural setting allowed kids to make their own rules, dream up their own stories and experiments, and come to conclusions about nature - all at their own pace.

The school garden under study was an emergent space of self-exploration that the children came to favor over other school sites. The garden was a place where an ethic of environmental care for nature was modeled and encouraged, where students were encouraged to experience nature and *its* concept of time (Malone, 2004). The school garden appeared to foster caring relationships, and allowed students to gain a sense of belonging, independence, and generosity. Thus, the garden was a productive site for children to develop beneficial, Earth-self relationships (Clayton et al, 2003; Noddings, 1984). The decisions I made in terms of the garden's structure, rules, teaching approach, and activities had an impact on the student's abilities and choices (Malaguzzi, 1994). The student-centered, emergent structure of the garden provided students with new times and spaces in the school day to develop an ethic of care for nature (Forman & Fyfe, 1998; Malaguzzi, 1993)

The garden shaped everyone who entered it. We learned not only how to better care for ourselves and each other, but also how to better care for nature. Our garden story is special because it captures a moment in time. It informs who we were together, what we did, what was said, and how we changed. It reminds us that just as we can nourish the Earth, the Earth can nourish us.

I now turn to a discussion of the themes and assertions of this research to further unpack environmental identity. Here, I will reframe what it means for a child to have an environmental identity, as well as suggest a framework for theorizing and researching environmental identity production in the field of environmental education.

CHAPTER FIVE

Chapter Five: Discussion of Themes and Research Implications

In this chapter, I begin with a brief review of this dissertation document. I arrive, then, at the two research themes, or assertions, of this work. As the themes are discussed in relationship with my research findings, they are also supported by relevant literature pertaining to environmental identity, identity development in figured worlds, and garden-based education. Next, the implications of my research claims are considered for environmental educators and environmental education researchers alike. The dissertation draws to a close with final remarks regarding this work and a call for further research on environmental identity in the field.

Overview of the Dissertation

This dissertation document has responded to my specific research question: How do students develop caring, environmental selves as they participate in emergent, garden-based activities? In Chapter 1 of this document, I introduced the dissertation and outlined my pathway to conducting this research. The study was situated within my own ideological framework and environmental identity, as well as a previous pilot study. Chapter 2 provided an overview of my theoretical frameworks informing this work, as well a review of relevant bodies of literature. This situated my dissertation research within a body of existing work on environmental identity and garden-based research, and demonstrated its potential value in the field of environmental education. My research methods and study setting were discussed in Chapter 3, as well as my methods for data analysis. In Chapter 4, the results of the research were presented as they pertained to the

study site and the student cases. Five students' environmental identity stories were shared. The categories emerging from the student data, which answered the research question, were then discussed. The categories presented the processes by which environmental identity shifts and emotional investment occurred in the five student cases.

In this final chapter, I reveal and discuss the two research themes which were derived from the student case studies and research categories. These themes are discussed alongside relevant literature to: 1) Support the use of the figured world framework in environmental identity research; and 2) Posit school gardens as powerful sites to produce notions of the caring, environmental self in children. The first theme asserts that environmental identities are produced in the figured worlds of environmental education, and it posits that the school garden is a particular type of figured world. It also addresses how a child's environmental identity production may be theorized and researched in the field. The second theme attends to the importance of the garden for public school children, and it posits that emergent, garden spaces are figured worlds where children can develop caring, environmental selves.

Theme One: Environmental Identities are Produced in the Figured Worlds of Environmental Education

In this dissertation research, identity is theorized as a construct which is "figured out" as individuals participate in various social worlds. These social worlds are powered, as well as situated within larger societal forces (Holland et al., 1998; Vygotsky, 1978). Identity is comprised of and influenced by family, culture, or history. It can be socialized, imposed, constructed, or imagined (Rubin, 2007; Urrieta, 2007). Within any social arena, ways of being are imagined, artifacts of the experience are leveraged, subject positions

are negotiated, movement occurs, and identities are constructed. Identity is viewed as in-progress, ever-changing, and multi-faceted (Bakhtin, 1981). Individuals have and enact various identities in different contexts, and these identities represent different positions, preferences, or proclivities. In this sense, identities are linked to behavior, or how an individual lives in the world (Penuel & Wertsch, 1995; Vygotsky, 1978).

Within this working definition of identity, environmental identity is theorized in this work as one aspect of an individual's multi-dimensional self-concept. As it is a part of one's many different identities, or a particular type of identity one possesses, it shares all of the same defining qualities and tenets as identity as a social concept. Environmental identity indicates and implicates an individual's feelings about or affinity toward nature (Clayton et al., 2003). Aspects of an environmental identity form in the same ways that aspects of other identities form. How children see themselves relationship with nature is dependent upon their cultural understandings of nature. In addition to this, social influences and variables impact the level of engagement and how meaning is made in an experience (Clayton et al., 2003). While children's engagement in a nature experience is influenced by history and social interaction, it is also dependent on the social construction and context of the experience. Possibilities for environmental identity development lie at the intersection of these determining, yet negotiable fields.

Considering these theoretical notions of environmental identity and how it forms in social spaces, I assert through this research that environmental identities are produced in the figured worlds of environmental education. Figured worlds are culturally constructed spaces which individuals are drawn into to shape or re-shape aspects of themselves (Holland et al., 1998). School gardens and school garden activities are the

figured worlds under study in this work. The garden itself was a real place populated by the children. The provocations which occurred in the garden existed only as they were populated and storied by the children as participants (Holland et al., 1998). As the children participated in and benefitted from their garden experiences, they placed themselves in the garden world. Participation in the figured worlds of the garden allowed the children to identify themselves in relationship with nature through participation in garden activities (Hallowell, 1955). This is a perspective that they may not have encountered in other areas of their lives.

As documented in the data on social context and in the student cases, tenets of the figured world framework directly address my research question on how children produce environmental identities in a garden space. For example, who participated in the garden space mattered, as this determined the structure and positioning of the participants in the garden world. Further, it was documented that the children in this study brought their own histories-in-person into the garden. From this place, they created and leveraged their own garden artifacts toward identity improvisation, and they took up or rejected certain relationships or environmental behaviors. As the children developed and leveraged the various artifacts of their experiences (poems, expressions, provocations, food, friends), they contributed to the ways of the garden world and built attachments to it. Their attachments perpetuated further investment in the garden, and thus, they moved closer to the garden experiences in their own ways and for their own reasons. The artifacts of their experiences allowed them to improvise and change their experiences. Artifacts gave the children a place in the figured worlds of the garden and liberated them from less desirable

worlds or ideas of self. They allowed the children to begin to "position themselves for themselves" (Urrieta, 2007, p. 110).

Forming this relationship or self-image, or participating in the figured worlds of the garden, brought with it a set of culturally-defined norms. The children in this garden were called to develop a self-concept within the garden world, and then they had to choose to actualize or avoid this image. By design, figured worlds generate goals (D'Andrade, 1992). The goal co-created by the children within this garden world focused on identifying and developing relationships within the garden space which could positively impact their lives. However, the degrees of participation or identification with the garden world varied among students. The children's histories and the social situations occurring in the garden space affected whether the children were drawn into the garden world and to what extent this occurred. This explains why the goals, purpose, and resounding culture of the garden world were co-constructed and ever-evolving in the space, just as the children's identities were themselves.

In this work, the figured world of the garden was narrated by the children's stories. Each child's story was a unique representation of their garden experience and revealed much about their individual process of meaning-making. The children's stories were figured against garden norms, which were influenced by history and power, but were also co-created through their interactions and negotiations with others in the space. Underlying these personal narratives a more collective narrative formed. For the children in the study, this narrative became about finding a sense of connection or meaning for the garden in the context of their lives. This honed the children's personal investment in their experiences and positioned the children in a reciprocal relationship with the garden

space. This also created a type of culture in the garden which encouraged exploration, care, and identity development (Noddings, 1984).

As this study has indicated in theory, design, and outcome, environmental identity is produced in many ways and for many reasons in the figured worlds of environmental education (Clayton et al., 2003). Ultimately, the children in this study formed environmental identities in ways that were largely social and that would benefit them personally. Examining children's identity production through the figured world lens permitted the researcher to track and deconstruct the environmental positionings taken up and enacted by children as they engaged in gardening experiences. Utilizing this framework highlighted their motivations and movements within the process of environmental identity formation, thus, revealing the richness and layered nature of the children's environmental identity formation in this context. As I assert in my second theme, the particular context and social structuring of this garden space opened up, rather than limited, spaces for environmental identity development.

Theme Two: Emergent School Garden Spaces are Powerful Sites for Environmental Identity Production

As previously mentioned in my literature review, particular spaces allow for particular articulations of the self (Blackburn, 2003). Further, power structures within a child's immediate cultural world impact identity formation (Rogoff et al., 1993; Wenger, 1998). Therefore, the environmental identities children form during public school garden experiences are influenced by the subject positions available to them within public school garden spaces. While children's identity possibilities within public school spaces are framed by social considerations, cultural constructions, and recognition of power, school

gardens can become symbolic sites or spaces of value in which children can realize their relationships with nature.

As public school garden experiences are rearranged for and by children, children are provided with new spaces and means through which to imagine, negotiate, and position themselves in relationships with nature. As this research has shown, allotting space for self-exploration and choice within a school garden curriculum may allow children to form environmental selves in the public school garden context. If a garden employs a student-centered framework which focuses its learning and social experiences on the students and student-centered provocations, it creates an environment that is conducive to identity-seeking and is supportive of the child's history, background knowledge, interests, and choices. It communicates a message to the students that they are valued co-contributors of culture, learning, and identity (Malaguzzi, 1993). Thus, I argue that school gardens focused on student-centered provocations can shift, construct, or solidify the environmental identities of its participants.

If children are to feel connected to part of the mysterious, wild world of nature, they require unstructured and self-directed time to explore, question, and imagine (Sobel, 2004). A child entitled to voice and choice in a garden space can acquire new experiences, tools, and capital to leverage as a means of participating and positioning themselves in a relationship with nature. In this work, a carefully designed school garden space allowed the students to bring together dichotomous facets of themselves, creatively restructure them, draw selectively from each, and arrive at new environmental identity possibilities. Children's environmental identity formation here was positively impacted by the use of a Reggio Emilia-inspired approach to teaching and learning in the garden.

The Reggio Emilia approach encourages children to guide their teachers in choosing activities which will challenge and maximize their curiosity on an academic topic of their choosing. Reggio-inspired teachers constantly listen to and observe children to discover what interests them. Then, they use this knowledge to plan provocations and to prepare the teaching tools and environment (Malaguzzi, 1994). The children in this study guided garden activities and inquiries, and the topics of study chosen were then related to relevant learning standards to meet the school's academic objectives. The learning activities were student-centered, emergent, and designed through Reggio's recursive process. Overall, I listened to and observed the children in the garden context as I constructed garden plans and activities, so as to build upon the children's environmental interests and curiosities within a standards-relevant, project-based format.

This Reggio-inspired approach, which structured the garden and our daily learning activities, was useful in the context of this work for the following reasons: 1) It was based upon the children's personal interests, self-expression, and social relationships. These facets of the Reggio approach get at the personal and relational aspects of environmental identity and care development; 2) It allowed the students to draw upon their own cultural, linguistic, and historical resources as they relate to gardening and environmental education. This allowed the students to develop a more personal connection with and care for nature, as they came to know it through their own culture and process; and 3) As a researcher in this context, this approach allowed me to investigate the nature of the choices that the children made within the figured worlds of

the garden, as well as how these choices impacted the development of their environmental identities or care ethics in the garden.

Within a Reggio-Emilia inspired framework such as the one employed in this study, there is openness toward students' activity choices and self-governance. In this setting, children were given a venue to experiment with improvisation. They were encouraged to create and to make meaning out of the artifacts of their experiences, carry this knowledge into different activities, and consider the durability of these artifacts in the context of their lives. For the students in this study, the structure of the garden space allowed them to explore, negotiate, and solidify their connections. It provided the children with new positionings through which to meaningfully participate in the figured worlds of the garden. Modeling environmental care as a teacher, engaging in dialogue about environmental care in our activities, and practicing and reflecting upon our environmental care as a learning community influenced how the students saw themselves and built connections within this context. Then, the reciprocal nature of their garden engagements created a bond, sense of care, and connection to the garden experience (Noddings, 1984). I now offer implications of these research assertions to environmental education researchers and environmental educators.

Implications

My dissertation research provided children with a unique site to take-up an environmental identity within the figured worlds of public school environmental education. Environmental identities developed throughout this project, as initiated and expressed by the children, positioned the children in self-directed relationships with nature. These relationships are precursors for an ethic of environmental care. Incorporating a child-

directed gardening project in the context of a public school provided the time and space necessary to inspire deep nature connections and positive environmental identities and attitudes. Ethnographic data collected enlightened how identities and agency intersected to yield a particular set of environmental actions and behaviors. Claims regarding the relationship between environmental identity and environmental stewardship were strengthened. Additionally, existing definitions of environmental identity as a social concept were broadened (Kitchell, Kempton, Holland, & Tesch, 2000).

As researchers accept the challenge to study environmental identity in the field, I ask them to attend to questions implicated by this research: How can environmental identity be theoretically conceived, and how can its production be studied? Further, as environmental educators strive to co-create environmental learning spaces where students build meaningful connections and a sense of environmental care, I invite them to ask: What does this type of space look like for children? I now put forth some considerations, implicated by this research, for researchers and educators to consider as they answer these questions and set forth in researching and supporting environmental identity.

Environmental Education Researchers. The first step in environmental identity work is unpacking environmental identity as complex and researchable. This research reports on environmental identity as a socially-constructed and emergent concept. Having an environmental identity means something different for everyone, and it is produced differently across individuals in the figured worlds of environmental education. Further, identifying with nature and having an ethic of environmental care yields an array of behaviors and actions from children, which are dependent upon the context of their

lives and their own unique experiences. Thus, I advocate for an expansion and broadening of environmental identity as a concept in environmental education research.

I argue that theoretical conceptions of environmental identity should consider and include: 1) A stronger emphasis on children's history-in-person as a factor in environmental identity production; 2) The social and powered components which limit or expand identity possibilities within the social spaces of environmental education; 3) A more explicit discussion about the link between environmental identity and the artifacts and capital that benefit and motivate children toward certain behaviors and identities in the field; and 4) A greater emphasis on the child and her own unique, environmental identity story. Conceptualizing environmental identity as a static concept that embodies particular behaviors presenting at particular times prevents certain individuals from becoming "environmentalists." Utilizing this definition in research and practice limits environmental identity as a researchable concept. Further, utilizing this limited definition with children in the garden communicates that environmentalists are an elite group of people who look and behave a certain way. These political messages are dangerous for our future, as the Earth needs more diverse and caring individuals acting on its behalf.

Considering the complex and re-conceived definition of environmental identity this research purported, investigating environmental identity in the field calls for the use of rigorous theoretical and research frameworks. To fully articulate children's experiences in environmental education, I position the figured world concept as a useful framework for accomplishing this task. The figured world framework provides a useful lens through which to observe and deconstruct children's environmental positionings or identities taken up and enacted by children as they engage in emergent gardening

experiences. Examining children's practices and imaginative narratives through a figured world framework also complicates their motivations and movements within a self-directed process of environmental identity formation in the public school garden, thus, revealing the richness and layered nature of children's environmental identity formation in this context.

My use of the figured world framework provided a successful roadmap for this work. Utilized in data collection and analysis, it identified some of the freedoms, constraints, and power plays taking place in the garden space. The complexities of the children's environmental identity experiences in this research raise special considerations for environmental educators as well.

Environmental Educators. A history of questionable environmental practices in the United States has left a trail of economic, social, and aesthetic destruction that younger generations must now learn to manage. Thus, educating children about their roles in healing and protecting the planet could be one of the most vital responsibilities of today's teacher. If local, environmental issues are overlooked as valuable content for children in schools, children today will continue to have a limited knowledge base or the necessary skills to navigate the challenges of the world (Monroe & Fien, 2005). Working with children in spaces where they are not indoctrinated through formal curriculums may impact their developing identities, which could affect long-term changes within society (Brooker, 2006). Providing opportunities for children to discover and express their environmental identities can provide for healthier children and a more sustainable future.

When given the opportunity to do so, children are able to negotiate challenging situations and reason with difficult content quite knowledgably (Malaguzzi, 1994;

Wexler, 2004). Further, young children seem to understand more about the natural world than was previously assumed (Hillcoat, Forge, Fien, & Baker, 1995; Sobel, 1996). Engaging children with environmental topics when they are young and naturally curious builds their interest and capacity to engage with these topics later in life (Smith & Williams, 1999). Also, as children are assisted with building connections between their classroom context and larger environmental issues they begin to understand that their actions have consequences on both a small and large scale (Ernst & Monroe, 2006).

Environmental education opportunities can challenge the historical, social, and cultural experiences children bring to school with them (Kahn & Kellert, 2002). As an education program is carried out in a social context, opportunities for identities to develop must be carefully created by those holding positions of power within the community. While teaching students to be globally-minded and ecologically conscious is one step toward cultivating an environmental identity in young children, having an environmental identity means more than understanding environmental issues or the basic principles of organization in ecological communities (Smith & Williams, 1999).

Developing an environmental identity requires a certain amount of time and social experience, and it is constructed through one's feelings, background, and knowledge of nature (Thomashow, 1996). The elementary school years, then, are an ideal time for instilling environmental understandings and personal connections with nature (Orr, 2004). Within this time period, the key to uncovering how young children feel about themselves in relationship with the natural world is to provide appropriate contexts and experiences in which they can build connections and understandings (Sobel, 1996). Without experiences in nature and opportunities to examine existing beliefs, the

probability that young children will form environmental identities and ideologies which center on stewardship of the Earth diminishes (Kitchell, Kempton, Holland, & Tesch, 2000).

The ways in which individuals connect to and act toward the environment greatly affects the health and welfare of both local and global communities. Schools have become an even more important place to inspire the next generation of environmental stewards. These settings play a crucial role in constructing education initiatives that encourage environmental identity and care development in children (Monroe & Fien, 2005). I believe that public school gardens create powerful spaces for environmental identities and environmental care behaviors to take root. The mere presence of a garden at a school, however, does not automatically denote a school community full of caring, environmentally-minded children. While some care is indicated by a school community who constructs a school garden, I believe that the structure of the garden and the day-to-day experiences shared by its caretakers are what truly shape the hearts and minds of a school community.

Public schools have the opportunity to help connect children to the natural world. Through carefully crafted garden programs, schools can aid children in developing stewardship behaviors (Malone 2004; 2007; Sobel, 2004). This research underscores for environmental educators the importance of creating living, emergent, garden spaces in public schools. Environmental education in emergent contexts can lead to new environmental identity possibilities, and even a strengthened commitment to the environment. If environmental educators support emergent garden frameworks such as the Reggio-inspired one employed in this research, their students may also have

opportunities to guide their learning and experiences, and to some degree, their environmental identities. As shown in this work, children can benefit from experiences in garden environments that are emergent and provide opportunities for them to explore and bond with nature. It was through positive moments and interactions in nature that the children grew their love for the garden, or their caring environmental selves. And it will be from this place that they can grow their desire to protect the Earth for future generations.

The children in this study built an affinity toward the garden, in part, because of the ways it positively contributed to their lives. Because of the challenges they were facing in their lives, they were all more intentional about where they invested themselves and why. As seen in the data, each of their motivations were different. In order for this garden to have the impact and effect it did on the children, however, they needed to be able to make personal meaning of their experiences. They needed choice, time for reflection, and outlets for expression. They needed to be able to define what the experience meant for them. And most importantly, they needed to be able to define environmental identity for themselves. While my ideas on environmentalism and why an environmentalist forms may have been different from theirs, they did not love the garden any less than I did.

Overall this experience reinforces to environmental educators that the encounters a child has in nature do not have to be top-down, organized activities. This research has shown that children can find physical and emotional meaning in free, unfettered exploration. Through this work, I advise garden educators to give their students the

encouragement, opportunity, and supervision they need to explore safely, and then to sit back and watch. The children can and will take it from there.

Closing Remarks

This research highlighted the social importance and weight of the school garden for our future, positing it is a valuable place to provide the time, space, and experiences that public school children may need to understand and define a path to environmentalism. The use of the figured world framework positioned environmental identity as a social construct, holding different values, meanings, and implications for all children as garden participants. The school garden, conceptualized and researched as a figured world, was a social space which shaped and was shaped by its participants. Children's diverse narratives about themselves and their relationships with nature were leveraged as artifacts within the figured world of the garden and their lives. Thus, the garden became an outdoor arena for children to produce caring, environmental selves. The children's experiences and relationships inside the garden allowed them to alter behaviors, invited them to develop new social practices, and encouraged them to ascribe meaning to nature in the context of their own lives.

It was my desire through this dissertation research to reveal the various environmental identity possibilities students have in emergent garden spaces, as well as to complicate the complex processes by which environmental identities develop in social spaces. This work called for an exploration and analysis of the school and garden structure, myself as the garden teacher, and the students' histories-in-person. The children's stories I have revealed within this work were written through and within the intersection of these realities and moments. Considering the varied roles I held in this

research project, it was quite difficult to be powered, present, and reflexive in each of these spaces all at once.

As a researcher, environmental educator, and the biggest cheerleader of this garden space, I come again to a place where it is necessary to attend to my roles in the production of this research. I designed the study, theoretically framed the garden space, guided the learning experiences, collected certain data, interpreted the "researched other," chose which stories to share, and thus, influenced the students' identity production stories. And now, in this final step of this dissertation process, I am writing these stories into existence. While I triangulated my data, empowered the kids over myself in the garden space, and engaged in reflexive processes at every turn, I am and always will be a large part of this work.

And so, I must be transparent about something else: I had many hopes and dreams for my students and our garden. These hopes were a part of the figured world of the garden, thus, they played a part in shaping the space and the students. Therefore, it is important to acknowledge that students may have been socialized to certain behaviors or moments of environmental care through (or in spite of) my influence. As my pilot study indicated, this is one way environmental identity can develop. In an attempt to continue to reconstruct my power as a teacher in this particular garden space, I would like to argue instead that we co-created each other as we participated in co-creating the culture of the garden together. Participation, engagement, care, and relationship are aspects of environmental identity that I could never "force" upon the children in this study. As I previously discussed, I did model environmental behaviors and I did play a large part in defining the school's pro-environmental culture. However, the students could always

choose whether or not they wanted to engage or how far-reaching the experiences would go into their lives. While it would be naïve to think that I did not have some control or power over a day-to-day experience, I had little control over the real work the experiences were doing on the children's identities.

I believe this to be true because of the frustration I encountered and had to overcome in the face of my own limitations. There were moments where I wanted to make connections happen for the children, tell them what to do or how to feel, or point out a missed environmental identity opportunity. I wanted to help the child see the positive impact of an experience, or even make explicit the positive changes I felt an experience was bringing them. There were even moments when I wanted to admit teacher-weakness and take back control of the garden space altogether. These were the moments in which, from my perspective, I doubted that the activities students were creating and engaging in were impacting their environmental identities at all. But it was the children's role to decipher that from within their own experiences. It was never my aim to limit the identity possibilities for the children, who consequently, were opening up identity possibilities that I could have neither created nor imagined. My definition of what was possible for the children in the garden space was limiting for them because it was my own. The real challenge of this work, then, was accounting for my necessary involvement, suspending my hopes and dreams, and simply holding a space for the children to tell their stories.

The means to this outcome, however, were not always comfortable for me. The process of handing so much control over to students was a difficult one. Initially, I was concerned that the ideas I had about this garden space would prevent me from getting

permission to conduct the study in the first place. And since it took me a while to abandon my old ideas about what it looked like to have an environmental identity, I worried at many points that the project was "flopping" and that the garden wasn't producing environmentalists as it should. I searched for grand statements and acts of stewardship. I longed for proclamations that reaffirmed children's relationships with the garden space. It wasn't until I realized that I, too, needed to abandon the limiting ideas I had about environmental identity that I started to see the real work the garden was doing on the children and the children were doing on the garden.

And at the end of it all, I would also be remiss if I did not reveal that the outcome of this study was pleasing to me as a garden teacher and environmental researcher. As was indicated in the student cases, we crafted a beautiful garden space together, and the children loved it tremendously. They formed primarily positive relationships with the space, me, and each other. And they expressed that these relationships positively impacted their lives and shaped their kindred feelings toward our garden. The children constructed personal definitions of environmental care that were based upon their own reciprocal and caring relationships with the garden experience. Within the definition of the caring, environmental self suggested in this work, the children developed caring, environmental selves as they made personal meaning out of their environmental experiences in the context of their own lives. As they discovered new meanings for nature, such as a friend or a provider, they built a profound knowing, bond, respect, and care for the space. These realizations and this work have brought me a deep sense of satisfaction. I feel privileged and humbled to have had this research opportunity, as well

as honored to have been a part of the moments when these children envisioned and produced caring, environmental selves.

These feelings, or implications from my research, now lead me to offer a suggestion for additional research in the areas of environmental identity or garden-based learning environments. Though I attempted to theoretically conceptualize and research environmental identity in this study, continued explorations of the child's process of environmental identity production are needed to further inform when, why, or how children create and leverage artifacts during school gardening activities as a part of their process of *becoming* in the figured worlds of environmental education. As we continue to explore and test a variety of sociological frameworks for doing this type of research, we must also focus on creating a body of research that provides a sense of how children think about and express their identities in garden contexts, what influences their environmental identity development in these spaces, and what tools they use in the process. The insights of such research will be the building blocks of social change that are necessary for the sustainability of our environment.

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Cultivating a Caring, Environmental Self: Using the Figured World Concept to Explore Children's Environmental Identity Production in a Public School Garden Space

Appendix A. Parental Permission Form

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Parental Permission Form

Title of Project:
Cultivating a Caring, Environmental Self: Using the Figured World Concept to Explore Environmental Identity in a Public School Garden Space

Principal Investigator:
Dr. Brenda Brand
Faculty Member
Elementary Education
School of Education, Virginia Tech
Email: bbrand@vt.edu

Co-Investigator:
Megan Sulsberger, M.Ed.
PhD Candidate
School of Education, Virginia Tech
Telephone: (703) 965-5493
Email: mjsuls@vt.edu

I. Purpose of this Research:
The purpose of this research project is to explore the impact of public school gardening experiences on your child, specifically how emergent garden experiences impact your child's feelings about and actions toward nature.

II. Procedures:
Following your consent and your child's assent, your child will be observed by a Virginia Tech researcher during normally-scheduled garden classes or during optional lunchtime garden sessions. Observations will be conducted a maximum of two times per week, lasting no more than 45 minutes per observation. Observations will continue for the remainder of the school year. Nothing outside of regular garden class activities is required of your child in this study. Data gathered will be completely anonymous and will consist of field notes, audio recordings of your child's experiences and interactions in the garden, notes from your child's journal, copies of your child's work, and/or photographs not containing your child's face.

III. Risks:
There are no perceived risks for your child as a participant in this study beyond the everyday risks associated with normal life.

IV. Benefits:
There are no perceived benefits for your child as a participant in this study. No promise or guarantee of benefits has been made to encourage participation. You may contact the researcher at a later time for a summary of the research results.

V. Extent of Anonymity and Confidentiality:
The data obtained in this study will be anonymous and confidential, with only the researcher having access to the data. While the data may be summarized in publications or conferences following the study, your child's name will not be included in any report and will only be noted in comments during the study by an alias. At no time will the researcher release the results of the study to anyone without your written consent. It is possible that the Institutional Review Board (IRB) may view this study's collected data for auditing purposes. The IRB is responsible for the oversight of the protection of human subjects involved in research. The anonymous field notes and audio tapes will be destroyed at the end of the 2013 academic year.

VI. Compensation:
There is no compensation offered for your child's participation.

VII. Freedom to Withdraw:
Participation in the study is completely voluntary for you and your child. You have the right to withdraw your child from the study at any time without penalty. Your child has the right to withdraw from the study at any time without penalty.

VIII. Subject's Responsibilities:
I voluntarily agree to allow my child to participate in this study. He/she will have the following responsibilities: Be observed, audio-recorded, or photographed by a Virginia Tech researcher during normal garden lessons.

IX. Subject's Permission:
I have read the Parent Permission Form and conditions of this project. I have had all of my questions answered. I hereby acknowledge the above and give voluntary consent for my child's participation in this study.

_____Date_____
Parent/Guardian Signature

_____Date _____
Witness (Optional except for certain classes of subjects)

Should I have any pertinent questions about this research or its conduct, and research subjects' rights, and whom to contact in the event of a research-related injury to the subject, I may contact:

Megan Sulsberger, M.Ed.
Graduate Research Assistant
School of Education, Virginia Tech
Telephone: (703) 965-5493
mjsuls@vt.edu

Dr. Brenda Brand
Faculty Member
Elementary Education
School of Education, Virginia Tech
Email: bbrand@vt.edu

David M. Moore
Chair, Virginia Tech Institutional Review Board for the Protection of Human Subjects
Office of Research Compliance
2000 Kraft Drive, Suite 2000 (0497)
Blacksburg, VA 24060
540-231-4991
moored@vt.edu

Appendix B. Child Assent Script

Cultivating a Caring, Environmental Self: Using the Figured World Concept to Explore Environmental Identity Production in a Public School Garden Space

Child Assent Script

"I want to tell you about a research study that I am doing in the garden. A research study is a way to learn more about something. I would like to find out how you feel about nature and the time we spend in the garden.

If you want to participate in this study, I may take notes about our experiences together. I may ask you if I can audio record some of our discussions about the time we spend in nature as a class. I may ask you if I can make copies of your journal. I may ask if I can audio record you describing your work to me.

This study may help us learn more about why people care about the Earth. It could also help us figure out what we can do to encourage others to care about the Earth, too.

You do not have to join this study. It is up to you. You can say okay now and change your mind later. All you have to do is tell us you want to stop. No one will be mad at you if you don't want to be in the study or if you join the study and change your mind later and stop.

Before you say yes or no to being in this study, I will answer any questions you have. If you join the study, you can ask questions at any time. Just tell me that you have a question.

Do you have any questions now?

Would you like to participate in this study?"

Cultivating a Caring, Environmental Self: Using the Figured World Concept to Explore Children's Environmental Identity Production in a Public School Garden Space

Appendix C. Teacher Consent Form

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Informed Consent for Participants
In Research Projects Involving Human Subjects

Title of Project:
Cultivating a Caring, Environmental Self: Using the Figured World Concept to Explore Children's Environmental Identity Production in a Public School Garden Space

Investigators:

Principle Investigator:
Brenda Brand, PhD
Faculty Member
School of Education, Virginia Tech
Email: bbrand@vt.edu

Co-Investigator:
Megan Sulsberger, M.Ed.
Graduate Research Assistant
School of Education, Virginia Tech
Telephone: (703) 965-5493
Email: mjsuls@vt.edu

I. Purpose of this Research:
The purpose of this research project is to explore the impact of public school gardening experiences on children, specifically if and how emergent garden experiences impact children's feelings about and actions toward nature.

II. Procedures:
Following your consent, you will participate in one focus group interview with the members of the first grade team and the co-investigator. This meeting will be held at an agreed upon time in the summer months at the school site. A guided discussion about the data collected throughout the school year will be led by the researcher. Data gathered during the focus group will be completely anonymous and will consist of field notes, an audio recording, and a transcribed audio recording.

III. Risks:
There are no perceived risks for participants in this study beyond the everyday risks associated with normal life.

IV. Benefits:
There are no perceived benefits for participation in this study. No promise or guarantee of benefits has been made to encourage participation. You may contact the researchers at a later time for a summary of the research results.

V. Extent of Anonymity and Confidentiality:
The data obtained in the focus group will be anonymous and confidential, with only researchers having access to the data. While the data may be summarized in publications or conferences following the study, no names will be included in any report and will only be noted in comments during the study by an alias. At no time will the researchers release the results of the study to anyone other than individuals working on the project without written consent. It is possible that the Institutional Review Board (IRB) may view this study's collected data for auditing purposes. The IRB is responsible for the oversight of the protection of human subjects involved in research. The anonymous field notes, audio tape, and transcribed audio tape will be destroyed at the end of the 2013 academic year.

VI. Compensation:
There is no compensation offered for participation.

VII. Freedom to Withdraw:
Participation in the study is completely voluntary. You have the right to withdraw from the study at any time without penalty.

VIII. Subject's Responsibilities:
I voluntarily agree to participate in this study. I have the following responsibilities: 1) Participate in one audio-taped focus group meeting to occur over the summer months on an agreed upon time.

IX. Subject's Permission:
I have read the Consent Form and conditions of this project. I have had all of my questions answered. I hereby acknowledge the above and give my voluntary consent:

_____ Date_____
Subject Signature)

_____ Date _____
Witness (Optional except for certain classes of subjects)

Should I have any pertinent questions about this research or its conduct, and research subjects' rights, and whom to contact in the event of a research-related injury to the subject, I may contact:

Megan Sulsberger, M.Ed.
Graduate Research Assistant
School of Education, Virginia Tech
Telephone: (703) 965-5493

Dr. Brenda Brand
Faculty Member
Elementary Education
School of Education, Virginia Tech
Email: bbrand@vt.edu

David M. Moore
Chair, Virginia Tech Institutional Review Board for the Protection of Human Subjects
Office of Research Compliance
2000 Kraft Drive, Suite 2000 (0497)
Blacksburg, VA 24060
540-231-4991
moored@vt.edu

Appendix D. Teacher Focus Group Questions

Cultivating a Caring, Environmental Self: Using the Figured World Concept to Explore Environmental Identity Production in a Public School Garden Space

Teacher Focus Group Guiding Questions

1. "What are some of your thoughts about your student's experiences in the garden this year?

2. "What do you think your student liked or disliked doing in the garden this year? Why?"

3. "Do you feel that the garden experiences had an impact on your student this year? How do you know this?"

4. "I will share a couple of specific observations made of the children, and then ask you for your interpretations of these observations."

5. "Are there any suggestions or corrections you would like to make about the data I have discussed with you regarding the focal students?"

6. "Are there any other things you would like to add to the data based on your own observations in the garden or in the classroom?"