

THE ART OF EMPATHY: A MIXED METHODS CASE STUDY OF A
CRITICAL PLACE-BASED ART EDUCATION PROGRAM

by

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(Under the Direction of TRACIE COSTANTINO)

ABSTRACT

This mixed methods case study examined middle school students' empathy with the environment within a critical place-based art classroom. The curriculum was informed by the ecological imagination, which calls for a new mode of education: education that embraces the arts as a way to conceive of pro-ecological perspectives, other ways of being in relation to the earth, better ecological alternatives, and new dialogues about our role in the world. Empathy with the environment was examined since empathy has close ties to aesthetic experience and, much like place-based education, is able to facilitate connections between students and living things. Operating in the pragmatic paradigm, I asked the following questions: How do middle school students demonstrate empathy with the environment throughout a critical place-based art program? How does participation in a critical place-based art education program affect students' pro-environmental orientations (ecological paradigm)? Which aspects of a critical place-based art education program, if any, contribute to students' empathy with the environment? Why? Drawing exercises, interviews, pre and post surveys, reviews of visual/verbal journals, observations, and focus groups were used to answer these questions. Data revealed that students experienced increased levels of empathy with the environment and increased pro-environmental orientations as a result of their participation in the curriculum. Students exhibited empathy with

the environment as they cared for nature, developed an awareness of the environment, and began to accept responsibility for the state of the environment. Curricular components that contributed to students' experiences of empathy included opportunities to experience the world directly, to care for nature, to affect change, and to make curricular choices. In addition, the social dynamics of the class and the teacher's investment were able to facilitate these experiences. Overall, this study demonstrates that a critical place-based art curriculum is capable of increasing students' empathy with the environment and pro-environmental orientations.

INDEX WORDS: Art Education, Place-Based Education, Empathy, Environment, Ecology, Imagination, Ecological Paradigm, Middle School, Curriculum

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DEDICATION

To my husband David who continues to inspire me with his sense of empathy and mindfulness for the feelings of others. I am encouraged to be a more empathetic individual because of his example.

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CHAPTER 1

INTRODUCTION

The modern era's legacy of isolation and alienation can be seen in a myriad of spheres—in the worldwide ecological crisis as humans have become estranged from the earth (Gablik, 1991), in the breakdown of established senses of community as the central role of place has dwindled (Orr, 1992), and in the high level of high school dropout rates as students have become disaffected with an educational system which bears little resemblance to their everyday lives (Smith, 2002b). Orr (1992) mourned, “. . . our immediate places are no longer sources of food, water, livelihood, energy, materials, friends, recreation, or sacred inspiration” (pp. 263-264). Place-based education seeks to remedy these disconnections by infusing place back into the curriculum and, in the process, making connections between students and the community, students and the environment, and students and schooling. It operates through an ecological paradigm, which emphasizes the interconnectedness of all living things. Empathy can facilitate these connections and, thus, is an integral component in the development of such a paradigm. Art, with its capacity to convey emotion and connect viewers in an embodied empathy, may be an ideal medium for helping students develop and expand that empathy into an increased consciousness for all living things. The purpose of this mixed methods case study is to examine how middle school students in a critical place-based art education program experienced empathy with the environment.

Statement of the Problem

This problem affects everyone as we are all in the midst of an ecological crisis. We hear of the global effects of it every day in the latest headlines warning of rising global temperatures,

escalating extreme weather, declining populations of fish, increasing pollutants in the ground and water, and mounting miles of trash in the Pacific Ocean. But these warnings are not abstract; we can see this ecological crisis in our own communities, neighborhoods, and backyards. As the local economy has dwindled and given way to an uncaring global one, we can feel the effects everywhere. The rise of industrialization, capitalism, and consumer culture has contributed to our current crisis. Berry (1993) described the dangers of “an absentee economy, once national and now increasingly international, that is without limit in its greed and without mercy in its exploitation of land and people” (p. 8). This global economy stretches to every community, and its destruction comes in many forms. Berry detailed the pressures that farmers encounter when they are forced to compete in a global market due to revisions in the General Agreement on Tariffs and Trade. This global competition can lead farmers to adopt abusive practices toward the land in order to survive in the global market. In 1949, Leopold (1949/1966) described the destruction of the local flora surrounding his Wisconsin farm due to clean farming, woodlot grazing, and good roads. Even as far back as 1854, Thoreau (1854/2000) lamented the impact of the railroad and the hundred Irishmen who took the ice “skin” off of Walden pond in order to ship it to faraway locations (pp. 237-238).

While the rise of the global economy may have led to these many destructions, our unbalanced philosophies and cultural myths are at the heart of the crisis. Bowers (2001) identified several “root metaphors” or “meta-schemata” (p.403) that underlie the rise of the Industrial Revolution, economic globalization, and our ecological crisis. The first root metaphor is that change is linear and always leads to progress. This Western notion can lead us to assume that the youngest members of a culture should determine cultural life and that traditions are oppressive. This view of progress can lead to the loss of proven traditions, practices, networks,

and customs that may still be relevant to living sustainably in an area. The second root metaphor is the belief that humankind is superior to and separate from the natural world. This view goes back centuries and is founded in the “biblical mythopoetic narrative of creation” (Bowers, 2001, p. 407). Humans as conquerors of the natural world relates to a patriarchal psyche, which has been overemphasized in Western culture (Gablik, 1991). Gablik described how our Eurocentric, patriarchal thinking has led to our current “hypermasculinized modern culture,” which emphasizes detachment from, neutrality toward, and domination of the land (p. 4). The emphasis on humanity’s separation from the natural world also relates to Cartesian dualism in its emphasis on a rational, separate individual. Dualism marks this ecological crisis and modernity through its emphasis on the dichotomy between self and nature, spirit and matter, self and community, and art and society. The third root metaphor is the belief that the individual is a basic social unit (Bowers, 2001). This view becomes dangerous because when we see individuals as separate from society, we imply that individuals have no sense of responsibility toward the community or standard of behavior (Berry, 1993). The implications of these root metaphors can be seen in every facet of Western life including our economy, our art, our communities, and our land.

As a culture, we need a change in our root metaphors or paradigms. We cannot add new ecological knowledge and attitudes to our existing schemas. Bowers (2001) positioned this new root metaphor as one based in ecology. Through a worldview rooted in ecology, we can see ourselves as participating interdependently with the natural world in a “complex web of interacting systems” (p. 410). Rather than change as linear and progressive, we need to see change as non-linear patterns (Bowers, 2001); rather than humans as separate from nature, we need to see ourselves as connected with and interdependent with nature (Gablik, 1991); rather than humans as dominators of the natural world, we should embrace a more feminine

consciousness and see ourselves as empathizing with, caring for, protecting, and healing it (Gilligan, 1982; Noddings, 1984); and rather than individuals as autonomous units, we should see ourselves as socially and ecologically responsible members of households and communities (Berry, 1993). Such a worldview embraces cultural diversity, which we need in order to learn ecologically sustainable practices from cultures that were able to live on the same land sustainably for generations (Bowers, 2001).

The ecological paradigm calls for a recognition of the self as part of a larger, more complex whole, and, thus, requires an expanding of consciousness. Through a deeper awareness and understanding of the “other,” we can move past the traditional distinctions and definitions that divide us. This moving is possible because worldviews are not stable and fixed (Boeve-de-Poew, Donche, & Van Petegem, 2011). Rather, they are continually influenced by interactions between individuals and their contexts. Evolutionary theory suggests that we each have an open window in our early years, before deep, long-lasting attachments and social identifications have formed, when we are universally drawn to all humans and even to living things (Schwartz, 2009). This open window provides a wonderful opportunity for education that could aim to encourage children’s openness to continue despite acculturation and, thereby, maintain students’ universal empathy for all living things.

Education seeking to maintain this open window and expand students’ consciousness must cultivate empathy. Empathy evolved from the German concept of *Einführung*, which literally translates as “to feel within” or “to feel into” (Franklin, 1990, para. 15), and was developed to describe an individual’s embodied response to an image, object, or space (Koss, 2006). Empathy involves traversing the empty spaces that divide, finding a common intersecting point, and then constructing an understanding of the other. Aesthetic experience has the capacity

to facilitate such understanding. Much like its predecessor, *Einführung*, which was developed to explain an aesthetic experience, empathy is intimately tied to aesthetic experience. Because of the strong connection between aesthetic experience and empathy, art education is an ideal ground for developing empathy and, thus, an ecological paradigm. As art educators, our goal should be to help students develop an empathy that moves beyond the immediate, embodied empathy that occurs when a student engages with an artwork. For instance, Lindsay experienced a connection with the vines she drew as she observed them and discovered the interesting negative spaces formed by the twisting lines. By drawing them and reflecting on her relationship with the natural materials, she may have been able to expand her immediate, empathetic connection. This empathy can then become an expanded empathy, an inclusive level of consciousness, which allows for caring feelings for people and other species, regardless of how diverse and distant (Herron, 2009). Herron explained how this expanded empathy can be accomplished by helping students refine their feeling from an aesthetic experience through reflection and then allowing that feeling to “nudge its way into the psyche as a whole displacing, replacing, and educating other functions” (p. 121).

Education that aims to help students develop this expanded consciousness must be experiential. Traditional environmental education, with its knowledge-based focus and traditional pedagogical structure, is not effective in changing students’ environmental attitudes (Stevenson, 1987, as cited in Smith, 2007). Students must directly experience the environment. They must have the freedom to interact with it and respond to it. Leopold (1949/1966) claimed, “We grieve only for what we know” (p. 48). Experience and interaction is critical in cultivating a relationship with the environment, as with any relationship. In order for this to occur, education must be rooted in the local environment. Place-based education fulfills this role. It

offers students the opportunity to learn through an experiential, student-centered approach and situates education directly in the realm of the local—in content and context. This strong connection with the local environment makes education relevant by connecting it to students' real lives, providing real-world experiences, meeting the emotional and spiritual needs of students to connect with nature, and better preparing students to protect land and communities (Gruenewald, 2008).

The visual arts are a way to facilitate this process by cultivating the imagination. Greene (1995) professed that the arts enable empathetic understandings. Because of this power of art, artworks representing the natural world or addressing ecological issues can be valuable in cultivating an ecological imagination. Through informed aesthetic experiences with works of art, we become defamiliarized with our own way of viewing the world as we become open to new perspectives and possibilities (Greene, 1978). A multitude of ecological perspectives are available through art. In our current ecological crisis, where our current ways of relating to the world are harmful, education must respond. We need to release students' imaginations to create change. A critical place-based art education curriculum has the potential to release the ecological imagination to affect change.

Purpose of the Study

My dissertation study aims to examine the field of critical place-based art education, a pedagogy that offers bright promises for impacting students' ecological attitudes but lacks empirical research. Specifically, it aims to understand how middle school students in a critical place-based art class experience empathy with the environment. In this study, I will ask: How do middle school students demonstrate empathy with the environment throughout a critical place-based art education program? How does participation in a critical place-based art education

program affect students' pro-environmental orientations (ecological paradigm)? Which aspects of a critical place-based art education program, if any, contribute to students' sense of empathy with the environment? Why? I approached this study through a pragmatic paradigm as I embraced mixed methods and the dissolution of traditional boundaries between induction and deduction, subjectivity and objectivity, context and generalizability, and mind and matter. Through a mixed methods case study, I operated as a teacher researcher to study one of the middle school introductory art classes that I teach. As a case study, this investigation strove to understand a single bound system—the 20 seventh grade students within this one introductory art class at a public middle school—and, as such, aimed more for an in-depth understanding of the phenomenon rather than for generalizability to a range of contexts.

Definition of Terms

Aesthetic experience. I am defining aesthetic experience as an individual's meaningful, cognitive engagement with a work of art (Costantino, 2005), where cognition encompasses both mind (conceptual thought) and body (sensory and emotional thought) through an embodied, naturalistic view of the mind (Johnson 2007). As the mind and body are both engaged, aesthetic experience becomes both an empathetic experience as the viewer empathizes with the subject matter and/or formal elements of the work as well as an imaginative one as the viewer engages his or her imagination to empathize with the work and to create new meaning. Dewey (1934) claimed, "[A]n imaginative experience is what happens when varied materials of sense quality, emotion, and meaning come together in a union that marks a new birth in the world" (p. 267). An aesthetic experience brings new understandings and ultimately transformation.

Empathy. Empathy represents a "capacity to share and understand another's emotions and feelings" (White, 2009, p. 49). This ability to understand another's emotions is often linked

with sympathy, compassion, and empathetic concern, although White (2009) reminds us that it can be found even among uncaring behaviors. Empathy can be distinguished from sympathy, then, which is an active concern for the well-being of another without sharing what the other is feeling (Green, 2008). Empathy does not necessarily imply a concern for another, but rather an understanding.

Embodied empathy. Embodied empathy refers to an initial, automatic empathy that occurs in response to a stimulus and is rooted in physiological processes. In an aesthetic experience, the viewer experiences this type of empathy by non-consciously imitating the subject matter or formal qualities of an artwork (Freedberg & Gallese, 2007), which in turn activates his or her emotions.

Expanded empathy. Expanded empathy moves beyond the initial, embodied empathy that we experience in response to a stimuli to become an expansion of consciousness for all living things.

Ecological paradigm. This paradigm or worldview involves recognizing oneself as part of a series of complex, interrelated systems. It relies on the concepts of relationship and interdependence. This paradigm represents a departure from the traditional Western worldview rooted in ideas of change as linear and progressive, humans as separate from the natural world, and the individual as the basic social unit. Likewise, the ecological paradigm deviates from Cartesian dualism by dissolving unnecessary and irrelevant boundaries to embrace connections.

Ecological imagination. The ecological imagination is an adaptation of Greene's (1995) theory of the social imagination and is informed by theorists in various disciplines addressing ecological issues. In discussing the ecological imagination, I am referring explicitly to the imagination engaged in envisioning different ecological realities—different ways of being in

relation to the natural world. Through using an ecological imagination, students can empathize with the environment, imagine better alternatives for the environment, recognize the harshness of its current conditions, and begin to act for a better ecological future.

Place-based education. Place-based education situates the educational experience in the local environment, including the local social, cultural, political, natural, and economic arenas (Smith, 2002a). Other educational traditions and pedagogies also aim to foster a connection between learners and the outside world and often overlap or are interchangeable with place-based education, including these pedagogies: *Earth Education*, experiential learning, environment as an integrating concept (EIC), environment-based education, conservation education, sustainable-development education, cultural journalism, real-world problem solving, context-based learning, problem-posing education, outdoor education, environmental and ecological education, bioregional education, natural history, critical pedagogy, service learning, community-based education, and Native-American education (Anderson & Guyas, 2012; Conaway, 2006; Gruenewald, 2003; Knapp, 2008; Powers, 2004). For the purposes of this study, I will use the term “place-based” to refer to any environmental education program rooted in the local environment.

Critical place-based art education. Critical place-based art education represents the intersection of critical education, place-based education, and art education. This educational approach aims to engage students’ ecological imaginations to envision different ways of being in relation to the ecological world. Critical place-based art education is infused with a critical component that aims to inspire students to question institutionalized philosophies and practices that may be harmful to the environment. Graham (2007) suggested three components of this curriculum: natural history, cultural journalism, and transformative education.

Significance of the Study

This study aims to understand how middle school students' demonstrate empathy within a critical place-based art education program. While this study is designed as a case study in order to gain an understanding of a specific group of students within a specific context, ultimately, it aims to broaden our understanding of critical place-based art education. Through this understanding, we can determine the role and direction art education may play in helping students cultivate ecological attitudes. This study is especially relevant for art educators and administrators who seek to develop schools and curricula that are relevant to students and capable of producing empathetic, ecologically-minded, active citizens who are capable of working toward social and ecological change in their communities.

This dissertation begins by addressing its theoretical framework, the concept of the ecological imagination, in Chapter 2. Later in this chapter, I will review the theoretical and empirical literature related to place-based education, ecologically-responsive art education, and empathy. In the third chapter, I will outline the mixed methods case study design I employed as a teacher researcher and how the pragmatic paradigm is particularly appropriate for this study. Chapter 4 will outline the critical place-based art curriculum I employed within the 7th grade introductory art class and my rationale for specific curricular decisions. In Chapter 5, I will provide an overview of the case including a description of classroom relationships, student responses to the activities, and students' general reactions to the curriculum. Chapters 6 through 8 analyze the findings of the other three research questions, and Chapter 9 provides profiles of select students' experiences of empathy. In Chapter 10, I will conclude with a discussion of the implications of these findings for the field of art education.

CHAPTER 2

LITERATURE REVIEW

Theoretical Framework

The imagination has the power to break through familiar and often arbitrary definitions and distinctions, to facilitate empathy, to expand our consciousness, to envision alternative realities, and to begin the process of working toward a better world. Greene (1995) described these powers applied to the social world through her conception of the social imagination, and she saw the arts as facilitating this process. Although the imagination is needed to bridge the social boundaries that isolate us and to work toward a better social order, we should not neglect its potential power within an ecological context, where arbitrary boundaries between humans and living things exist that need to be bridged and new ecological realities need to be constructed. An ecological imagination is needed. While the term *ecological imagination* may have first been used in literary criticism as a way to describe certain authors' writings of imaginative accounts of place (Worster, 1993), it has recently been used to respond to a call for an imaginative approach to ecological education. In discussing the ecological imagination, I recognize my conception of the ecological imagination overlaps in many important ways with the ecological imagination called for by ecological education theorists (Jardine, 1998; Judson, 2010; Karrow & Kentel, 2007; Payne, 2010). Nevertheless, for the purposes of this dissertation, I will focus on a conception of the ecological imagination, which is largely an adaptation and expansion of Greene's idea of the social imagination, and is designed to respond to our need for a better ecological future.

In seeking to help students cultivate a relationship with the natural world, a curriculum founded on the ecological imagination is imperative. In presenting my theoretical framework, I will first discuss Greene's (1995) conception of the social imagination and how I have appropriated this concept in service of the ecological. Then I will discuss the role that the imagination plays in facilitating empathy, in particular empathy with the environment. Next, I will discuss how education can cultivate the ecological imagination. Then, I will conclude with how the ecological imagination specifically informed my development of a critical place-based art education curriculum intended to cultivate an appreciation for the natural world. Later in the chapter, I will examine the current state of ecologically responsive art education. I will begin by examining its development and then considering its current state. I will review several ecologically responsive art pedagogies that were influential in my own development of a curriculum, and then, I will review the existing empirical research on the impact of these pedagogies. This chapter concludes with a review of empirical literature on empathy including empathy with the natural world, empathy and aesthetic experience, and empathy and art education.

The social imagination. Greene's (1995) book *Releasing the Imagination* introduced her visionary theory of the social imagination aimed at a recasting of our world. It is utopian in that it is a means to a more fulfilling social order. She defined the social imagination as "the capacity to invent visions of what should be and might be in our deficient society, on the streets where we live, in our schools" (p. 5). Through the imagination, we envision better states of affairs: classrooms where students are fully engaged in learning, neighborhoods that embrace diversity, and communities that facilitate relationships and support. These visions of better states of affairs function to awaken us to the current severity of our situations and to the possibility for

change. For example, in envisioning classrooms of students enthusiastically engaged in learning, we notice the apathy that defines too many of our classrooms and the inadequacy of non-experiential educational approaches. In envisioning communities that come together to support one another, we become aware of the isolation and divisions that exist too often in our communities.

Through the imagination, which makes visible the deficiencies in our current situations, we are moved to repair them (Greene, 1995). Greene claimed, “Imagining things being otherwise may be the first step to acting on the belief that they can be changed” (p. 22). This connection between imagination and change rests on the imagination’s ability to make things that are invisible visible, things once nebulous clear, things far away and abstract close and in concrete form. Friere (1970) described the movement from the intangible to the tangible as changing from a “blind alley,” a state of confusion and paralysis, to a workable challenge (as cited in Greene, 1995, p. 61). Situations and solutions need to appear concrete—only then can we act. Imagination makes this possible.

The ecological imagination. Greene (1995) thoroughly outlined the power of the imagination within the social world. While she does not explicitly limit it to the social realm, she also does not explore its role in other contexts. Because the imagination is so transformative, its power should not be confined to the social world. Thus, I have appropriated Greene’s conception of the social imagination and applied it within the realm of the ecological. This appropriation also represents an expansion in that it is reaching beyond the human world to the world of human beings and all living things. In discussing the ecological imagination, I am referring explicitly to the imagination engaged in envisioning different ecological realities—different ways of being in relation to the natural world.

Like the social imagination, the ecological imagination is able to imaginatively bring forth a better state of affairs. These better states might include communities that mobilize to create gardens, local parks, and recycling centers; lands that boast clean rivers, protected forests, and cared-for soil; and local businesses that value and promote sustainability and conservation. Through bringing forth these better states, we become more aware of the dangers in our current ecological predicament. For example, in envisioning a close personal relationship with the land, we become aware of our current lack of access to nature in many communities. In envisioning communities growing in harmony with the land, we become aware of the overabundance of concrete, asphalt, plastic, and metal, which too often define us. In envisioning businesses promoting sustainability, we become aware of the damage so many have done. Like the social imagination, the ecological imagination has an awakening function, often serving to awaken us to detect the divisions that separate us from connecting with the natural world, to acknowledge the degraded state of the earth, and to uncover abuses to the land.

Imagining better ecological possibilities and recognizing the problems inherent in our current ecological situations are critical steps to becoming more ecologically aware citizens. However, to fully respond to this ecological crisis, a propensity to act is required. Imagination has the capability to move ecological awareness into action. As Greene (1995) discussed with the social imagination, the imagination is able to make possibilities appear concrete. We are moved from a state of despondency, cynicism, or paralysis when we can vividly see another way. Because of the tangibility of these visions, they become achievable. They can be seen, felt, and heard. They become a part of us. They become possible. All that is required is a simple breaking forth, a departure from the typical, a leap of faith, a movement to create in tangible form what is already so corporeally felt—a creative act.

The ecological imagination can be assisted in this process when it is employed within the context of the local. The local context serves as a location to draw from in imaginatively constructing better ecological realities, a site to survey with a newly-found awareness of the possibilities, and a physical setting for action to occur. Berry (1993) asserted the importance of a local focus: “You can’t act locally by thinking globally” (p. 23). Though a global awareness is important, an emphasis on abstract, global issues and distant lands does not provide concrete locations for achievable change to occur. The emphasis should begin with smaller, more local issues such as the invasive plant species, kudzu, across the street that is choking the native plant life or the litter in the nearby river. Global visions may temporarily inspire, but local ones are the ones to create sustained change.

The ecological imagination and empathy. In addition to allowing us to envision better alternatives, awakening us to the harshness of conditions, and inspiring us to act for change, the imagination has the capacity to cross boundaries and facilitate understanding and relationships. Greene (1995) claimed the social imagination allows us “to break with familiar distinctions and definitions” (p. 3). She depicted how our society is often fraught with distinctions as historically, groups of people who varied from the dominant group in terms such as gender, age, ethnicity, religion, culture, education, health, and geographic location have been regulated to the category of the “other” (p. 3). Now, we live in an age where we have begun to recognize our shared human condition and the dangers of marginalizing groups of people. To truly break with dividing definitions, we need the ability to understand those whose lives and ways of being vary significantly from our own. This understanding should also extend to the natural world. In light of our ecological crisis, we now see how the dangers of distinctions extend to those between humans and the environment, where living things are often seen and treated as the “other.” This

false dichotomy positions humans as conquerors of the land instead of components of an interconnected set of systems. In our age of such separation, empathy is necessary to bring understanding and connection.

Greene (1995) declared, “. . . imagination is what, above all, makes empathy possible” because it allows us to “give credence to alternative realities” (p. 3). Greene expressed how the social imagination allows one to grasp another person’s reality. She illustrated how it can be a means of extending our own experiences so that we can take hold of the world of another as a “human possibility” (p. 3). It involves a recognition of the “integrity and coherence” of another’s world without necessarily approving or appreciating it (p. 4). It is a crossing over the empty spaces, a pushing of boundaries, a merging of horizons. But this crossing, pushing, and merging should not be seen as a simple transference of one’s world to another or a grasping of an external, objective reality. Rather, it involves an active construction of the reality of another, which is affected by situation and life experience (Immordino-Yang, 2008). Such constructed understandings are vital to opening new perspectives and pushing past traditional divisions that inhibit and harm.

In order to push past the destructive boundaries that separate humans from nature, empathy with the natural world is necessary and possible. Although Greene (1995) focused principally on empathy between persons and social groups, empathy is not restricted to the social domain. The very derivation of the term attests to this. Late nineteenth century German aesthetician Robert Vischer developed the concept of *Einfühlung*, which literally translates as “to feel within” or “to feel into” (Franklin, 1990, para. 15). Vischer developed this concept in order to describe an individual’s embodied response to an image, object, or space (Koss, 2006). Vischer wrote of the experience, “I transport myself into the inner being of an object and explore

its formal character from within” (as cited in Jeffers, 2010, p. 32). The concept of empathy evolved from this rich tradition of an embodied experience. In 1909, E. B. Titchener translated *Einfühlung* into “empathy,” and soon after, American scholars adopted the word (Lanzoni, 2009, p. 333). Its origination in an aesthetic experience to describe the dialogic understanding that occurs between a viewer and a work of art (White, 2009) demonstrates that empathy can occur between a human and a non-human entity.

Buber’s (1937/1947) writings described how this empathetic connection occurs between humans and nature. In describing the *I-Thou* relationship—an engrossing, fully empathetic relationship—he outlined three “spheres in which the world of relation arises” (p. 6) including the sphere between humans and nature. He gave the example of being bound in an *I-Thou* relation with a tree. In this temporal relation, one experiences only the tree and experiences it as a whole with all of its qualities indivisible. This experience is empathetic in that it involves a loss of sense of self and a holistic embrace of the *Thou*. Through this sort of empathetic, all-encompassing embrace of the natural world, divisions dissolve and relationships form.

The ecological imagination and art. The visual arts are a way to facilitate this process by cultivating the imagination. Greene (1995) claimed the arts enable empathetic understandings. Our ability to construct understandings often relies on our ability to use our imaginations poetically, “to enter into the ‘as if’ worlds” created by artists “and to be in some manner a participant in artists’ worlds reaching far back and ahead in time” (p. 4). For instance, when we experience Romare Bearden’s (1980) *Out of Chorus*, we feel the vibrant energy of the jazz club. We can imagine sitting in a crowded Harlem nightclub in the 1920s listening to the drums beating and the saxophones and trumpets playing. We extend our own experiences of listening to jazz music to imagine the pulsating experience of listening to this jazz band.

Likewise, we experience the world of Kathe Kollwitz's (1919) widows and orphans in her charcoal drawing *Widows and Orphans*. The bleak, hollow-eyed faces of the women and children stare out at us. We extend our own experiences of pain and loss to imagine their world—a world full of devastation, fear, hunger, and despair. We can imagine the shock of witnessing the brutalities of war and the despair that accompanies the loss. While one may not have lived during the 1920s, visited a jazz club, or experienced the horrors of war, the arts provide an avenue with which to imagine and empathize with such experiences.

Because of this power of art, artworks representing the natural world can be valuable in cultivating an ecological imagination. These artworks provide an opportunity for viewers to empathize with others' experiences of nature and possibly even with nature itself. For example, when we experience Albert Bierstadt's (1868) *Among the Sierra Nevada Mountains, California*, we can imagine Bierstadt's sense of awe at the dramatic landscape. The viewer can imagine his feelings as he walked through a grove of trees and stepped out into a clearing that suddenly revealed towering cliffs and majestic waterfalls. Similarly, when we experience William Kentridge's (1998) stop motion animation film *Weighing. . . and Wanting*, we enter into his protagonist's world. We can imagine the character's sense of loss as he gazes out at the devastated Johannesburg landscape, stripped of vegetation and punctuated with metal structures. We may also enter into the tortured world of the land itself. In seeing the depleted gold mines mutilated by twisted metal, we may imagine the pain of the earth. By entering into these artists' imaginative worlds, we are awakened to ecological realities and possibilities.

Through informed aesthetic experiences with works of art, we are roused from our present states and modes of seeing the world to become receptive to new perspectives (Greene, 1978). These new perspectives may involve regarding the land with a sense of awe and wonder,

as with Bierstadt's work, or mourning the devastation of the earth, as with Kentridge's work. A multitude of ecological perspectives are available through art. When we experience a work of art outside the fringes of our own experiences, we must reach beyond our own limited world to connect with it. In so doing, we begin a process of "reconceiving and revisualizing" the world (pp. 4-5). In viewing Bierstadt's painting, we may now recast our world as more majestic than previously considered. In viewing Kentridge's film, we may recast our world as precious and worthy of protection and care. This reframing of the world involves a "de-centering" of the self and an expanding of consciousness (p. 31). In this act, we move beyond the "given"—beyond our everyday acts of "non-being" (p. 23)—to moments of awareness. We are moved to moments of expanded consciousness where we are inspired to break from the habitual to ask a crucial question: "why?" (p. 6). Through this wakefulness and subsequent recasting of the world, a state that Greene often refers to as *wide-awakeness*, we revise the scope and terms of our own lives in relation to the earth.

The ecological imagination and education. Greene (1995) positioned the release of the imagination as a way to cultivate empathy, expand consciousness, conceive of better possibilities, and engage in critical dialogue for change. In our current ecological crisis, where our current ways of relating to the world are harmful, education must respond. We need to release students' imaginations to create change. Art education, critical education, and place-based education offer bright promises for releasing the ecological imagination.

Art education. Because of this power of art and its role in cultivating the imagination, Greene (1978) advocated for pedagogy that fuses art education and aesthetic education. Her aim is not merely to increase students' experiences with the arts but also to prepare them for informed experiences with the arts. Greene (1995) agreed with Berger (1984) that given our

current culture, which separates art from the masses in a number of ways, young people are unlikely to openly and spontaneously engage in aesthetic experiences with works of art without education. In aesthetic education, the teacher must work against the culture of the “passive reception” of knowledge in most classrooms and instead encourage a culture of active participation with art through aesthetic experience (p. 123). Active participation with art through aesthetic experience allows students to imaginatively enter into the artists’ worlds. This entering is not a simple transference of reified meaning but an active construction. Self-reflection and dialogue provide for further construction and reconstruction of meaning. Art making is also a method for constructing and communicating meaning. It is an imaginative and transformative act. Sartre (1949) declared, the act of art making is aimed at the “total renewal of the world” (as cited in Greene, 1995, p. 21). A combination of aesthetic education, a pedagogy that inspires students to “attend” through their continued conscious participation with works of art (p. 125), and art education, a pedagogy that inspires students to create, is capable of releasing students’ imaginations and empowering them to act.

Because students are imaginatively entering into artists’ worlds, the artworks that form the curriculum are critical. Gablik’s (1991) book *The Re-Enchantment of Art* provided insight into the types of artworks that may be capable of cultivating the ecological imagination. In this seminal work, Gablik critiqued contemporary art and called for art responsive to our social and ecological crisis. This art rejects isolating and harmful modernist myths and immobilizing deconstructionist tendencies. Rather, it falls within a reconstructionist approach with a focus on ecological attunement, interconnectedness, responsibility, recovery, and healing. She cited the works of contemporary artists Andy Goldsworthy, Lynne Hull, David T. Hanson, Rachel Rosenthal, Fern Shaffer, and Richard Rosenblum among others as examples of this new

responsive art. While Gablik's focus is on Western contemporary art, we should not discount the artworks from other cultures and times, which may also emphasize ecological interdependence and wholeness. Through a curriculum including such artworks, education can cultivate the ecological imagination and critical dialogues.

Critical education. Greene (1995) advocated for education to create social change. Her emphasis on the need for critical dialogue and the release of the imagination to create change moves her curricular theory into the social reconstructionist realm. Typically, humanist curricular theory brings an emphasis on developing self-actualization, emotional attachment, and empathy; and, social reconstructionist curricular theory brings an emphasis on improving the real world. Although her advocacy for a curriculum that cultivates empathy through the imagination aligns with humanist curricular theory, her advocacy for a curriculum that critically works for change aligns with social reconstructionist curricular theory. Both theories are necessary to inform a curriculum that is capable of cultivating self-actualized, empathetic students who are capable of addressing real-world problems.

Through this blend of humanist and social reconstructionist curricular theory, Greene (2001) described how education can provide an opportunity for reshaping dialogues to occur, where students are inspired to pose critical questions about their worlds. Greene drew upon Gadamer's (1975/2006) hermeneutical concept of horizons to describe each person's range of vision based upon their own lived experience. She is also influenced by Freire's (1970) notion of *conscientization* where learners are liberated to break through established mythologies to achieve an expanded awareness through dialogue in order to initiate change. In Greene's (1995) critical pedagogy, the imagination is deeply intertwined in this transformative process. The relationship between imagination and dialogue is a circular one: the imagination provokes

dialogue and dialogue further releases the imagination. The first step toward dialogue is freeing students to tell their own stories, and affirming the validity of those stories even when their interpretations differ from our own. By telling their own stories and naming their own horizons, students are better able to construct multiple realities and engage more fully in dialogue. This dialogue can occur among youth from different cultures and ethnicities and people who gather to solve relevant problems or protest injustices. In classrooms, such dialogue is likely to move students beyond the passivity and indifference too often permeating our schools and to spur students to engagement. This critical dialogue moves students to question “the given”—the oppressions that are often taken for granted and perceived as natural (p. 52). Through imagining a better state of affairs and engaging in critical dialogues, students can move toward freedom. Regarding the ecological imagination, this freedom includes the freedom to voice ecological concerns, to challenge prevailing environmental assumptions, to thwart environmental abuses, and to live in the world in a more harmonious way.

Education must cultivate this freedom because it will not naturally occur on its own. Greene (1995) contradicted the idea that the young will be able to create better worlds because of the creativity and freshness of their youth. She argued that this view ignores the challenges and oppressions of our time. She claimed, “We must acknowledge the fixities and corruptions of our consumer-based and technicized culture. We must take into account the languages of technology and violence, even as we do the miseducation in much that is done in schools” (p. 56). Schools are often devoted to maintaining the status quo and are largely resistant or at least not conducive to critical dialogues. However, openings can be made and change achieved.

Greene’s (1995) call for dialogue instead of an encompassing narrative rests on her view of the world as in a constant state of flux. She stated, “All we can do is cultivate multiple ways

of seeing and multiple dialogues in a world where nothing stays the same” (p. 13). This idea of ever-present change is similar to Heraclitus’ concept of the ever-flowing river: “You could not step into the same river; for other waters are ever flowing on to you” (Knierim, 2011, para. 9). In a world always flowing and changing, dialogue becomes a communal and ongoing quest of incomplete persons to search for wholeness through an expanding of consciousness. Persons are incomplete in the sense that everyone has a limited perspective based upon their own situated experiences. Thus the search involves a fusing of horizons to come closer to a more comprehensive understanding of the phenomenon.

Place-based art education. This search for wholeness is fundamentally linked to the realm of lived experience. Education must be linked to this realm if it hopes to engage the ecological imagination. Since students’ day-to-day experiences occur locally, education should be rooted in the local—in context and content. Place-based education situates educational experiences in the local environment, including the local social, cultural, political, natural, and economic arenas (Smith, 2002a). It makes education relevant by connecting it to students’ real lives, enhances learning by providing real-world experiences, meets the emotional needs of students to connect with nature, and better prepares students to protect land and communities.

Place-based education evolved in the early 1990s from environmental education as a more experiential alternative grounded in the local community and land (Knapp, 2005). It seeks to avoid the four main deficiencies of environmental education that Stevenson (1987) has noted—standardized knowledge, teachers as sole knowledge providers, dependence on unauthentic assessments, and focus on control of students—by providing authentic, experiential education rooted in the local environment (as cited in Smith, 2007).

Place-based education is very compatible with art education. Inwood (2008) described how place-based education and art education have much to offer each other: place-based education offers art education a way to connect art to the real world, and art education offers a creative voice and a “sensory, subjective orientation” to place-based education that may shift ecological attitudes and behaviors (p. 70). Place-based education is particularly relevant to art education as art educators aim to move art education beyond the modern era. Milbrandt (1996) described how art educators over the past 30 years have identified the deficiencies in a modernist approach to art education, which emphasizes creative individualism and leads to isolation (Bowers, 1993). This trend within art education is correspondingly found within contemporary art as artists have embraced real-world issues through postmodern approaches. Aesthetic theorists (Apter, 2002; Bourriaud, 1998/2002; Gablik, 1991) have extolled these works for their relational approach and have called for relational art—art that reaches beyond the isolation of modernism to an engagement with the outside world.

In seeking to engage students with the outside world through place-based education, critical education is also necessary to spur students to dialogue and to work toward change. Gruenewald (2003) merged the two pedagogies when he proposed a critical pedagogy of place—a pedagogy combining place-based education with a transformative critical pedagogy in order to produce change. Ball and Lai (2006) considered the implications of this pedagogy for the arts and humanities, and Graham (2007) later appropriated it specifically for art education. He claimed a critical pedagogy of place emphasizes the “activist, restorative possibilities of artmaking” and supports the need for learning to involve experiences outside of school (p. 379).

This critical place-based art pedagogy responds to the call of the ecological imagination for a new mode of education: education that embraces the arts as a way to conceive of new

ecological perspectives, other ways of being in relation to the earth, better ecological alternatives, and new dialogues about our role in the world. Through this approach, education becomes a means of awakening the ecological imagination—opening the world to new possibilities, new critiques, and, most importantly, new acts. Since the literature on the impact of the ecological imagination is limited, this study is intended to examine a curriculum inspired by the ecological imagination and to examine students' empathy with the environment. I will now conduct a thorough examination of the theoretical and empirical literature related to this topic beginning with an ecologically-responsive art education and then moving to empathy.

An Ecologically-Responsive Art Education

Since the late 1960s and early 1970s, artists and writers have begun to address ecological concerns. Closely following this environmental movement was a growing push for environmental education. Over the past two decades, art educators have begun to respond to this movement by calling for art education to respond to ecological issues. To answer this call, ecologically-responsive art pedagogies have emerged in the forms of the Ecological Vision (Graff, 1990), ecological stewardship in art education (Lankford, 1997), eco-art education (Inwood, 2008), a community-based environmental design education (Neperud, 1995), an art education of place (Blandy & Hoffman, 1993), ecological design for transformative education (Gradle, 2007), art education informed by a critical place-based pedagogy (Graham, 2007), and *Earth Education* (Anderson & Guyas, 2012). I intend to adopt and slightly modify Graham's (2007) critical place-based art pedagogy for my research with middle school students.

To explore how the environment has been treated within the field of art education and how these writings have informed my curriculum, I will first examine how art education has addressed the environment historically. Next, I will outline the various pedagogies that have

emerged to address environmental issues in relation to art education and will focus in particular on an art education informed by a critical place-based pedagogy. Then, I will review the empirical research on place-based education and place-based art education to ascertain the current state of the field and to demonstrate the need for research with middle school students.

The environment and ecology in art. In discussing the history of the treatment of the environment and ecology in art education, one must first examine the historical treatment of the environment in art. Art has a long-standing tradition of exploring the natural world through drawing and painting, most notably through natural history illustrations and landscape paintings (Graham, 2007). These two art forms have been dominant genres in Western art for centuries. While the issues surrounding representations of nature and land are complex, we cannot escape considering themes of exploration, conquest, control, colonization, and property ownership. We should consider the ecological narratives these works convey and the ramifications of these narratives for an art education curriculum.

Art education theorists have weighed in on the benefits and dangers of these two artistic traditions. Graham (2007) called for art educators to revisit natural history illustrations because of their capabilities for promoting a care for and relationship with the land. In contrast, Garoian (1998) took issue with traditional landscape paintings. He identified underlying metaphors in Western representations of the land, which he labeled as uncaring, uncompassionate, and in opposition to community. He included pictorial space, linear perspective, the sublime landscape, mapping, and the machine as examples of such potentially ecologically harmful metaphors. Through these metaphors we see the environment as a place of conquest as the painting itself represents a space for containment, hegemony, and control; the environment as the exotic other as it is either praised for its serenity or derided for its power; and the environment as a surrogate

and a consumer object within a domineering capitalistic society. Garoian claimed these metaphors could affect exploitive attitudes and behaviors toward the environment. While he demonstrated the dangers of these conventions, he did not explicitly call for art educators to abandon them but rather to explore them through critical dialogue as part of the art education curriculum. Students should engage with these concepts through dialogue and become aware of ecological incongruities. In addition, these artistic conventions can be appropriated for ecologically-responsive works as in the art of William Kentridge and Alexis Rockman.

An examination of the environment within art demonstrates that while the environment has an established presence within the history of art, its presence does not necessarily imply the existence of ecological attitudes. The underlying dualistic metaphors in traditional representations of nature are unfortunate given that artmaking itself is inherently an ecological process. Graff (1990) declared that artmaking is a process that resolves divisions between body and mind and self and nature. He cited Merleau-Ponty's (1972) and Shadbolt's (1981) comparison of the development of a work of art to the development of an organism. While he emphasized the ecological nature of all art, he also declared that certain artworks are more ecological than others. Certain works have evolved from an awareness of our position within a complex set of interrelated, interdependent systems within the natural world. Perhaps no works have done this more than those of ecological and environmental artists.

The rise of an ecologically-responsive art education. Environmental concerns began to take shape in society beginning in the late 1960s. During this time, artists began to create art directly addressing ecological issues. This art came to be known as environmental art, which Lynne Hull defined as art that “helps improve our relationship with the natural world” (as cited in Inwood, 2008, p. 60). Since the late 1960s and early 1970s, this movement has expanded to

include the art of artists such as Agnes Denes, Dominique Mazeaud, Andy Goldsworthy, Mel Chin, Ana Mendieta, Helen Mayer Harrison and Newton Harrison, Lynne Hull, and Mierle Laderman-Ukeles (Inwood, 2008). In addition, art education theorist Smith (1970) argued that aesthetic experience can be responsive to the maintenance of a healthy environment. In the midst of the early environmental art movement, many art educators assumed art had the power to solve ecological problems and believed art education should work to create a society of individuals concerned for the community and the environment (Graff, 1990). However, this emphasis on the environment in art education was short-lived. Overall, art educators were slow to respond to this new movement in art as evidenced by the general lack of research in this field (Graff, 1990; Inwood, 2008).

Around 1990, a second wave of environmental consciousness emerged influencing a variety of sectors of society. In education, environmental education found adherents in multiple disciplines. jagodzinski (1987) was one of the first to consider the ramifications of environmental education on art education. He also called for a new aesthetic—a green aesthetic, which rejected traditional dualisms and embraced ecofeminism in order to form new myths that reconceive our relationships with nature. In a similar rejection of dualisms, Gablik's (1991) book *The Re-enchantment of Art* called for art education to move beyond modernism's nonrelational aesthetic to an art engaged in the realities of our world through a more postmodern approach. She described how art can be used as an agent for social change and can respond to environmental concerns. Soon art education theorists began to call for art education to consider these issues and define a position. Several theorists (Adams, 1991; Graff, 1990; Gurevitz, 2000; Lindholt, 1999; Orr, 1992) advocated for an arts-based approach to environmental education (as cited in Inwood, 2008). For example, Orr (1992) argued that environmental education needed to

be integrated within a wide range of subject areas, including the arts, in order to instill ecological literacy in students. The environmental art movement provided the inspiration for an ecologically-responsive art education and educational theorists provided the theoretical frameworks (Inwood, 2008).

The current state of an ecologically-responsive art education. Since these two waves in environmental concern within the art education community, art education theorists have proposed several modes of art education responsive to the environment. While these proposed pedagogies have a variety of titles, they have much in common. They share similar theoretical frameworks as they often cite each other along with the ecological theories of Leopold (1949) and Berry (1987, 2005); the tenets of ecofeminism (Gaard, 1993; Griffin, 1989; King, 1989); the environmental education movement including its various forms such as place-based education (Smith, 2002a, 2002b, 2007), eco-justice education (Bowers, 2001), and community-based art education (McFee, 1970); the aesthetic writings of jagodzinski (1987) and Gablik (1991); and the works of eco-artists. Through relying on these theorists' contributions, they all describe the severity of our current ecological crisis, the problems inherent in dualisms that separate humans from nature and contribute to the ecological crisis, the importance of working for a better ecological future, and the need for art education to respond to this crisis. In this review, I will focus on Blandy and Hoffman's (1993) art education of place and on Graham's art education informed by a critical place-based pedagogy since they most inform my development of a critical place-based art curriculum.

An art education of place. Blandy and Hoffman (1993) examined eco-theory, which has implications across disciplines, and derived their own "eco-theoretical orientation" (p. 29) from eco-artists' and eco-activists' conceptions of the environment. They proposed for this theory to

intersect with the discipline of art education to fuse art, community, and environment to create an art education of place. They described the body of scholarship on community-based art education and commended its emphasis on a sociocultural approach to art education but claimed it is often anthropocentric. Therefore, they called for a bioregionalist perspective to green community-based education, which would be implemented within the discipline of art education. This bioregionalist perspective reveals the connections between the health of the natural systems and the health of humans, and effectively connects community to environment.

Through this art education of place, students can learn about the interdependence of all life on earth. This learning requires openness on the part of students to investigate their own lives and the lives of others around them, to consider alternative ways of living, and to identify current harmful relationships between humans and nature. Blandy and Hoffman (1993), as well as Gradle (2007), argued that a critical component is necessary to inspire students to question institutionalized philosophies and practices that may be harmful to the environment. In addition, they claimed the artworks which form the curriculum are critical. They agreed with Graff (1990) that certain artworks are more ecological than others and that well-chosen works can be influential. They cited the criticism of Gablik and the artworks she described as examples of artworks that may be capable of changing conceptions of place. Art educators can also further this aim by asking students to examine images and metaphors of place within popular culture and the media. Through examining these visual representations of place, students are able to uncover critical issues surrounding our culture's beliefs and values regarding our communities and our environment.

Art education informed by a critical place-based pedagogy. Even though Blandy and Hoffman's (1993) art education of place has many similarities with place-based education, it was

not informed by place-based education, which developed several years later. However, place-based education does form the foundation for Graham's (2007) critical place-based pedagogy. Three components are essential to an art education curriculum informed by a critical pedagogy of place: natural history, cultural journalism, and transformative education. As part of the natural history component, Graham (2007) identified drawing plants and mapping communities as ways to bond with the natural world. Such activities may help students form a closer connection with nature, but as Garoian (1998) reminded us, these activities may also contribute to harmful ecological philosophies. Therefore, teachers should lead students in critically exploring the underlying metaphors of the activities themselves. In regard to the cultural journalism component, Graham claimed it can connect students to local cultural productions, and transformative education can stimulate critical dialogues surrounding our place in the world. In this pedagogy, transformative education is linked with studies of visual culture. Through critically studying visual culture, students have the opportunity to reflexively consider their cultural assumptions and the surrounding issues of representation, power, and justice. I will be adopting this pedagogy for my own research because of its foundation in place-based education, its emphasis on first helping students to form a relationship with nature, and its inclusion of a critical component.

My critical place-based art education curriculum. My critical place-based art education curriculum responds to the call of the ecological imagination. This pedagogy has much in common with Graham's (2007) art education informed by a critical place-based pedagogy. Like Graham's pedagogy, it represents a critical pedagogy of place within the discipline of art education and includes the same components of natural history, cultural journalism, and transformative education. While they share essentials, my pedagogy differs in

its reliance on the ecological imagination as a theoretical framework and in its approach to critical education. In discussing art education informed by a critical place-based pedagogy, Graham (2007) cited many of the same theorists who form my conception of the ecological imagination including Thoreau (1854/2000), Berry (1993), Gablik (1991), Greene (1995), and Bowers (2001). However, he did not use the term *ecological imagination* to describe the theoretical framework or emphasize the role of the imagination. This distinction is important because the ecological imagination plays such a key role in my conception of this pedagogy, in particular within the critical component where the imagination is released to affect change.

In addition to varying in relation to the ecological imagination, the critical component of my pedagogy is informed by Bowers' (2008) writings. Bowers critiqued Gruenewald's (2008) critical pedagogy of place, which synthesizes place-based education's focus on the local community and environment with critical pedagogy's focus on challenging the widely believed, oppressive assumptions and practices of the dominant culture. By combining the agendas of the two pedagogies, critical place-based theorists claim that students can learn reinhabitation, learning to live well in their local environment and community, and decolonization, learning to recognize destructive practices and to challenge them (Gruenewald, 2008). However, Bowers (2008) argued that a critical pedagogy is incompatible with a place-based pedagogy in its root metaphors, which perpetuate the current ecological crisis rather than challenge it. In particular, he critiqued Gruenewald's emphasis on reinhabitation, which assumes that ways of living harmoniously in the world do not already exist in some form within the community or within the worldwide cultural commons. Bowers claimed the root metaphors surrounding reinhabitation reveal an ethnocentrism, a view of language as non-contextualized, an assumption that change is

linear and progressive, and a belief that a rational individual's critical thinking leads to overcoming oppression.

Instead, Bowers (2008) advocated for an eco-justice pedagogy that does not assume that all cultural practices are harmful and that everything needs to be transformed. In Bowers' proposed pedagogy, students engage in thick description about the differences between their "local cultural commons" (p. 334) and consumer and industrial culture. The teacher serves as a facilitator and mediator helping students "give voice" to their experiences in both arenas but does so without assuming the experience will necessarily be transformative. Through this process, students can gain the language necessary to determine which attitudes, assumptions, and practices are harmful and need to be challenged and which are positive and sustaining and need to be preserved or renewed. While I am not adopting Bowers' eco-justice pedagogy in its entirety, I am using it to amend Gruenewald's (2008) critical pedagogy of place for a less assuming approach that actively seeks and embraces the sustainable practices of other cultures.

Research on Ecologically-Responsive Art Education

The empirical literature demonstrates the need for research on a critical place-based art education curriculum as well as the need for such research with a middle school population. Although many theorists have proposed for art education to respond to ecological concerns, the empirical literature on the topic is scant. Most accounts of ecologically-responsive art programs are anecdotal (Anderson, 2000; Birt, Krug, & Sheridan, 1997; Holmes, 2002; Keifer-Boyd, 2001). Systematic investigations in this field are needed to examine the curriculum, implementation, and effectiveness of these programs.

Since little empirical research has been conducted in this field, I used fairly broad search criteria. I searched for all place-based education programs, even those solely in academic subject

areas. I did so with the belief that what works with place-based education in general education might have a strong transferability to art education. I did not include programs labeled “place-based” that were exclusively community-based education without an environmental component and did include programs even if they were not labeled “place-based” if they involved environmental education through the local environment. In particular, I searched for place-based art education literature. I did not restrict the search by date in case there were any pioneering studies earlier than I expected, but all of the studies I found occurred within the last 12 years since the environmental education movement is relatively new and place-based education and place-based art education still newer. In order to learn as much as possible about the impact of these programs, I did not restrict the search by age of the participants, including studies conducted with preschool students, K-12 students, higher education students, teachers, and artists.

Therefore, I conducted a search of literature examining place-based programs and any intersection of environmental education and art education to gain an understanding of the various effects of the programs on students.¹ Ultimately, the search revealed that researchers and

¹ First, I searched online databases, such as ERIC, Education Research Complete, JSTOR, Environment Complete, and Art and Architecture Complete for scholarly journal articles and ProQuest Dissertations and Theses to identify relevant dissertations and theses using a combination of relevant subject search terms including: eco*, education, eco-art, ecological, environment, environmental, pedagogy, place, place-based, art, art education, pedagogy, community, study, research, effects of environmental education, outdoor education, and education. Next, I searched for specific authors once I had identified particular theorists who focused on place-based education hoping that this search might yield additional articles. Then, I

administrators have begun to implement place-based and place-based art education programs. These programs seem to be especially popular in communities with a high percentage of indigenous peoples. However, little research has been conducted on the efficacy of place-based education and even less with place-based art education programs. This lack of literature is not surprising considering place-based education programs are not yet widespread (Smith, 2007).

Place-based education. I will first investigate studies and evaluations on place-based education programs in general, which include school-wide initiatives and subject-specific programs, excluding those within the discipline of art, which I will address within the next section. The studies and one evaluation that I found on place-based education in general explored the effects of place-based education on K-12 participants (Athman & Monroe, 2004; Azano, 2011; Buxton, 2010; Conaway, 2006; Cook, 2009, Ernst & Monroe, 2006; Howley, Howley, Camper, & Perko, 2011; Lieberman, Hoody, & State Education and Environmental Roundtable, 1998; Powers, 2004; Santelman, Gosnell, & Meyers, 2011; Takano, Higgins, & McLaughlin, 2009); the effects of place-based professional development with teachers, pre-service teachers, and related professionals (Meichtry & Smith, 2007; Rosenthal, 2011; Semken & Freeman, 2008; Tarr, 2008; Triggs, 2009; Upitis, 2009); and teacher attitudes related to place-based education (Inwood, 2005). The majority of these studies and evaluations used mixed

reviewed the reference lists from the articles I identified for additional sources. I ultimately identified 17 relevant peer-reviewed articles, theses, and dissertations. I read through each source, wrote a summary, categorized it, and then analyzed and critiqued it according to a framework for analyzing research developed from the American Education Research Association's Proposal Peer Review Guide.

methods to examine the outcomes of place-based education (Athman & Monroe, 2004; Buxton, 2010; Cook, 2009; Conaway, 2006; Ernst & Monroe, 2006; Lieberman et al., 1998; Powers, 2004; Takano et al., 2009; Upitis, 2009), which can be complex and multi-faceted.

The entire body of literature on place-based education demonstrates that place-based programs can positively impact students' environmental knowledge, awareness, and appreciation; sense of place; academic achievement; achievement motivation; and critical thinking. According to the research, place-based education programs are effective in a variety of geographic locations and with a range of populations, regardless of race, achievement, or age. Research also suggests that certain populations, such as special needs students and indigenous populations, may especially benefit from a place-based approach (Powers, 2004; Takano et al., 2009). Studies examining the more affective outcomes of place-based education on K-12 participants are especially relevant to this study. These studies include those examining environmental awareness (Buxton, 2010; Conaway, 2006, Howley et al., 2011), sense of place (Cook, 2009), and connection to the land (Takano et al., 2009).

Buxton's (2010) study focused on middle school students' environmental knowledge and awareness during a summer science place-based program. Buxton used Gruenewald's (2003) theory of a critical pedagogy of place, which emphasizes decolonization and reinhabitation, as his conceptual framework. Decolonization involves recognizing aspects of the dominant culture that cause harm, and reinhabitation involves relearning to live in harmony with the local environment (hooks, 1992; McGinnis, 1999; as cited in Buxton, 2010). Within this program, Buxton emphasized social problem solving with the idea that adolescents benefit from critically questioning the world, globally and locally, and then taking action. The qualitative component of this transformative, mixed methods study examined students' abilities to "take action to

decolonize and reinhabit their lived environment” (para. 14). Through a parallel form, conversion design approach, Buxton analyzed pre-and post-interviews qualitatively through open-coding and quantitatively through a scored rubric. This design gave him the ability to determine the change in student responses holistically through examining the results from the rubrics and examining the depth and breadth of their responses through the qualitative analysis. Qualitative results suggested a change in environmental awareness. Buxton claimed the responses indicate students were using broadened thinking and were beginning to exhibit decolonized thinking with an emphasis on reinhabitation. However, since students were responding in the interview to topics that were taught during the one-week program, they may have been merely reciting information they heard from the instructor on these topics. Perhaps interview questions could also include topics not taught in the workshop to determine if students were able to exhibit decolonized thinking and the desire for reinhabitation independently. Also, additional research is needed to examine the application of this thinking to other situations and the long-term impact on students’ decolonized thinking.

Like Buxton (2010), Conaway (2006) found a positive impact on middle school students’ environmental knowledge and awareness. Her mixed method, quasi-experimental study examined the effects of an interdisciplinary place-based curriculum on students at a Montessori school. Conaway developed her own questionnaire designed to measure students’ environmental knowledge and beliefs. She found a significant improvement between pre- and post-survey scores for the experimental group and no improvement for the comparison group. These results indicate that participation in the place-based program contributed significantly to students’ environmental knowledge and personal beliefs about the environment. A qualitative analysis of student reflective papers supported the quantitative findings and revealed a connection between

environmental knowledge and a “stewardship ethic” (p. 50) with students using the words “care,” “protect,” and “respect” frequently (pp. 50-51).

The results of Cook’s (2009) study do not converge with the rest of the literature; however, it does not necessarily indicate that place-based education in general is ineffective. Cook’s mixed method, action research study examined sense of place with students at a small, private, place-based high school, where she served as a student-teacher. After identifying methods non-formal educators use to help students develop a sense of place in the first part of her study, she then examined whether these methods would be effective in a formal educational setting. She used quantitative pre and post surveys to measure place identity and place dependence and qualitative pre and post focus groups. Both measures indicated that students’ did not develop a stronger connection to place during the thirteen weeks that Cook student-taught them. Cook cited various possible explanations for the lack of change: perhaps the thirteen week period was too short to significantly impact students’ sense of place or perhaps students had reached a ceiling on their sense of place since their school was already place-based. Additionally, Cook’s status as a student teacher could have affected her ability to administer these methods as effectively as a traditional classroom teacher.

Takano, Higgins, and McLaughlin’s (2009) study examined secondary students’ connection to the land, among other factors, as part of a mixed methods, longitudinal study. Participants from 6th to 12th grade attended a place-based school situated in a small town in northwestern Alaska with a high percentage of indigenous people. Takano et al.’s initial 2002 study found that the place-based program had impacted students’ views of the land. Some described nature as “home,” and others said they found “peace” through the land (p. 362). In the follow-up study, all of the 2007 interview respondents reported a greater connection with the

land. This longitudinal study is significant in that it indicates a long-term impact of a place-based program.

Overall, the literature on affective outcomes of place-based education on K-12 participants demonstrates that place-based education can impact ecological attitudes, specifically environmental awareness and connection with the land. This capacity of place-based education to produce positive affective outcomes suggests empathy with the environment could also be a possible outcome of these programs. In addition, the effectiveness of place-based education in a variety of settings and with a range of participants implies that a critical place-based art education program could be effective in a variety of contexts.

Place-based art education. The literature related to place-based art education is less robust; however, it does suggest that this pedagogy can benefit participants. Two phenomenological studies (Gradle, 2007; Triggs, 2009) examined pre-service teachers and teachers' experiences of place within eco-art education programs. Their research suggests that performance art (Gradle, 2007) and an online communication and relationship studio, called Earthshapes Studio (Triggs, 2009), can be effective tools in exploring a sense of place and in opening and extending dialogue about being in a place (Gradle, 2007).

The one study to examine a place-based art education program with K-12 students was a participatory action research study (Creel, 2005). As an elementary art teacher, Creel worked with 3rd -5th grade students with "at-risk tendencies" in an environmental art education program that met the criteria of place-based art education. Operating in the transformative paradigm, Creel described the challenges the students faced with their low socio-economic status and other risk factors. As a significant portion of the program, students cooperated with each other, students at other schools, and professionals in the community to build an environmental

sculpture garden. Through a variety of qualitative data collection methods, including observation and three open-ended questionnaires, Creel found that students' participation in the environmental art education program helped them develop empathy, "empathetic understandings" (p. 177) and behaviors, pro-social skills, self-esteem, and confidence. The strength of her study lies in her variety of methods and extensive engagement with these students.

More research is needed to examine the impact of ecologically-responsive art education pedagogy on K-12 students. Though Creel's (2005) study demonstrates positive changes in ecological attitudes and empathy, her participants were solely upper elementary, at-risk students. Research is needed to explore the effectiveness of such a program with other populations. These populations could include participants who vary from Creel's population by age, race, income-level, geographic region, and achievement level. Studies with middle school students in particular are needed since no research I am aware of has been conducted with this population on this topic.

In addition, this population may be particularly important to study since, according to Piaget's (1971) cognitive theory of development, adolescents are capable of formal operational thought (as cited in Santrock, 2001). This capacity for abstract thought would be important since it is often accompanied by idealism and awareness of possibilities (Santrock, 2001). In addition, Selman's (1980) developmental theory of perspective taking claims that adolescents are capable of mutual perspective taking and of social and conventional system perspective taking. This capacity may allow middle school students to better engage in critical dialogue and reflection than younger students. Yet, middle school students are still young enough that their identities are continuing to undergo formation (Santrock, 2001), and they may more readily develop

ecological attitudes than older students. Sobel (1997) described this period between 11 and 12 years old as a critical period for bonding to occur between students and the earth.

Empathy. Since place-based education programs have demonstrated positive affective outcomes related to the environment and empathy is closely connected to art, empathy with the natural world is worth examining as a possible outcome of a critical place-based art education program. Therefore, in this review I will first investigate the theoretical and empirical literature related to empathy and the environment to establish the existence of an empathy with the natural world and empathy's connection to ecological attitudes and other related phenomena. Next, I will review the literature related to the connection between empathy and aesthetic experience. Last, I will conclude with the implications of this literature for art education.

Empathy with the natural world. As discussed in the theoretical framework, empathy is not limited to empathy between humans. Empathy with the natural world is possible. Sobel (1997) asserted that one important goal of environmental education should be to help students develop empathy with the natural world. This goal is important given the connection between empathy and more responsible environmental attitudes (Schultz, 2000; Shelton & Rogers, 1981; as cited in Berenguer 2007) and pro-environmental orientations (Karlegger & Cervinka, 2009).

Karlegger and Cervinka (2009) conducted a survey study designed to understand connectedness with nature and its influences. As part of this study, they examined the relationship between empathy with the environment, which they termed "connectedness with nature," and pro-environmental orientations. They measured 178 secondary students' connectedness with nature through the Connectedness with Nature Scale (CNS) and pro-environmental orientations through the New Ecological Paradigm Scale (NEP) and found that CNS scores were significantly correlated with NEP scores. These findings support the link

between empathy with the environment and pro-environmental orientations, the two phenomena I am examining in this study.

Since empathy with the environment is linked to ecological attitudes and pro-environmental orientations, it is worth aiming to cultivate it in students. Several studies suggest that empathy with the environment can be encouraged and can have a strong ecological impact on participants. The Batson Model of Altruistic and Prosocial Behavior (Batson, 1991) assumes that inducing empathy can improve attitudes and behaviors toward subjects and objects. This model informed two of Berenguer's (2007, 2010) experimental studies as he sought to determine the relationship between empathy and pro-environmental attitudes, behaviors, and reasoning.

In both of Berenguer's (2007, 2010) studies, he used a factorial design (2 x 2) to determine the relationships between empathy level, empathy object, and either pro-environmental attitudes and behaviors (2007) or pro-environmental moral reasoning (2010). In these studies, he hypothesized that those who were induced to feel a high level of empathy for the environment would increase in pro-environmental attitudes, behaviors, and reasoning. In the 2007 study, participants were instructed to examine an image of an empathy object (oil-covered birds or chopped tree stumps) by remaining objective (the low empathy condition) or by taking the perspective of the object (the high empathy condition). Next participants completed a questionnaire designed to measure their level of empathy and a community outreach fund budget recommendation form to determine their willingness to allocate resources toward environmental initiatives. Berenguer found that those in the high empathy condition were more likely to display empathetic attitudes toward the environment on the questionnaire and to allocate resources toward environmental issues. Thus, induced empathy contributed to stronger environmental attitudes and behavior.

In Berenguer's (2010) study, he hypothesized that moral reasoning about the environment, defined as the number of moral reasons given for pro-environmental behaviors, would increase by manipulating empathy. Researchers first gave participants instructions designed to help them develop high or low empathy for a human or a vulture, and then asked participants to self-rate their empathy level. Next, they presented participants with four environmental dilemmas and asked participants to determine a course of action. Participant responses were rated as ecocentric, anthropocentric, or nonenvironmental. Researchers found that when the empathy object was a vulture, participants' arguments were more ecocentric, and when the empathy object was a man, participants' arguments were more anthropocentric. This result was especially significant when the empathy level was high. This study establishes the strong link between induced empathy and pro-environmental reasoning. Both of these studies suggest that helping students to cultivate empathy with the environment in a classroom might contribute to pro-environmental results.

Empathy and aesthetic experience. In addition to its connection to pro-environmental attitudes, behaviors, and moral reasoning, empathy is closely tied to aesthetic experience much like its predecessor, *Einfuhlung*, which was developed to explain an aesthetic experience. Vernon Lee wrote in 1912 of how "bodily resonances" could sharpen and focus an aesthetic experience because the body and mind are engaged (as cited in Lanzoni, 2009). Since its inception in the early twentieth century, empathy's role in an aesthetic experience has crested with the writings of Heinrich Wofflin, Aby Warburg, Bernard Berenson, Theodor Lipps, Vernon Lee, and Wilhelm Worringer (as cited in Freedberg & Gallese, 2007; Koss, 2006; Lanzoni, 2009), waned with the rise of an emphasis on intellectual concerns dealing with abstraction (Koss, 2006), and waxed strong again in the 1980s with the support of simulation theorists in the

midst of an interdisciplinary debate about the role of folk psychology (Stueber, 2008). Today, many scholars consider empathy to be an essential component of an aesthetic attitude and experience (Franklin, 1990). Worringer (1916) equated empathy during an aesthetic experience to losing oneself and dissolving into another (as cited in Koss, 2006). However, Koss's (2006) definition of empathy as "a process of emotional and psychological projection" (p. 1) may better describe the constructive nature of the process. In the process of internalizing another's emotions and feelings, the self is actively involved since one cannot simply absorb the objective state of another. Rather, one constructs a representation of another's state based upon one's own subjective experiences, memories, culture, emotions, and neurological predispositions (Immordino-Yang, 2008).

In an aesthetic experience, the viewer's construction of a representation could best be described as a dialogue occurring between the viewer and artwork. White (2009) equated this relationship to Buber's "I-Thou" interaction where the "I" and the "Thou" are "equal partners in meaning making—a sharing rather than an imposition of views" (p. 126). Thus, this dialogue becomes a relationship between viewer and art object. As part of this relationship, both have a responsibility to the other and must bring something meaningful to the aesthetic experience (as cited in White, 2009). Oremland (1984) defined art appreciation as "the dialectic of art's evocative power and the viewer's empathetic intricacies, enhanced by the historical knowledge about the piece and the artist" (pp. 239-240). Empathy is an essential component for this dialogue to occur.

The empirical literature demonstrates the close connection between empathy and aesthetic experience. For instance, Hoge (2003) found that museum visitors report empathetic experiences while viewing artworks. Writing on this topic now extends to recent neurological

and psychological research, which can now better explain the mechanics of how this empathetic reaction occurs. Moreover, the latest discovery of mirror neuron systems suggests the critical role that physical and emotional imitation plays in developing empathy during an aesthetic encounter (Freedberg & Gallese, 2007). Freedberg and Gallese (2007) attributed the viewer's physical reaction to an artwork to mirror neurons within the human ventral premotor and posterior parietal cortex. When a viewer views a work of art, the body responds through an automatic mimicry. This mimicry can occur in response to the subject matter and form of an artwork. For example, when a viewer observes an artwork, particularly one where the gestural qualities are evident, the viewer's brain attempts to reconstruct an imitation of the action that the artist undertook to create that gesture. Freedberg and Gallese (2007) referred to the gestural, "drip" paintings of Jackson Pollock and the slashed canvases of Lucio Fontana as dramatic examples of works that might induce such motor responses. Also, observing others' facial expressions or images of those expressions activates viewer's facial muscles and the corresponding emotions (Bush, Barr, McHugo, & Lanzetta, 1989; Sonny-Borgstrom, 2002; Vaughan & Lanzetta, 1981). In addition, research on somatosensory systems (Keysers, Wicker, Gazzola, Anton, Fogassi, & Gallese, 2004) suggests that artworks representing humans touching an object or objects touching each other can create an embodied empathy.

Empathy and art education. The literature on empathy and aesthetic experience suggests that empathy could be closely tied to art education. In addition, Creel's (2005) study, described earlier, explicitly demonstrated the presence of empathetic behaviors within a place-based art classroom. However, more research is needed specifically within art education programs, especially since empathy is an integral component of an aesthetic experience. Though the embodied empathy during an aesthetic experience may be a quick, initial response to a work

of art, it may become a springboard for further expansion and development. Art education may be an ideal location for cultivating this response into an extended empathy. In particular, a place-based approach may be ideal since its primary aim is to foster connections. Critical place-based art education offers bright promises for cultivating empathy in middle school students, but more research is needed to explore this potential. This dissertation study sought to address this need.

CHAPTER 3

METHODOLOGY

Paradigm and Assumptions

In researching students' empathy with the environment, I adopted a pragmatic paradigm. The pragmatic paradigm is an alternative paradigm to the metaphysical paradigm, which rests on the premise that metaphysical assumptions such as epistemology and ontology are interlocked with methods, and, therefore, assumes that paradigms are incommensurable (Morgan, 2007). Instead, pragmatism functions as an alternative paradigm, which reconciles this traditional incommensurability. It avoids the dualisms between the quantitative and qualitative approaches—the divide between induction and deduction, subjectivity and objectivity, context and generalizability.

Pragmatism also avoids the dualism between mind and matter (Morgan, 2007) and in so doing aligns itself with an ecological paradigm. Dewey, an influential pragmatist theorist, described a *transactional realism*, which emphasizes the intimate connection between the living creature and its environment (as cited in Biesta & Burbules, 2003). Through this interaction or *transaction*, reality reveals itself. These transactions relate to pragmatist theorist, Johnson's (2007) concept of horizontal transcendence, an embodied spirituality, where one connects, not vertically to a higher being, but horizontally to the world around them. It involves recognizing one's participation as part of a broader human and non-human world. Because of pragmatism's inherent emphasis on relationships, it is a particularly appropriate paradigm for researching concepts defined by connections—specifically place-based education and empathy.

The curriculum was informed by the ecological imagination, a theory that emphasizes relationships but also transformation. Thus, this theory shares similarities with the pragmatic paradigm as well as the transformative. Therefore, one might assume that the transformative paradigm would be appropriate for this study, especially because of the curriculum's critical component. However, the transformative paradigm's strong emphasis on confronting social oppression is less relevant for this study. While the curriculum did aim to address the how ecological systems are often oppressed by human actions, the study itself did not make significant strides to confront this oppression, particularly at an institutional level. Therefore, pragmatism best aligns with the ontological and methodological tenets of this study.

Research Questions

In keeping with the pragmatic paradigm, the research questions determined the methodological approach for this study. The research questions are:

1. How do middle school students demonstrate empathy with the environment throughout their participation in a critical place-based art education program? (qualitative)
2. How does participation in a critical place-based art education program affect students' pro-environmental orientations (ecological paradigm)? (quantitative)
3. Which aspects of a critical place-based art education program, if any, contribute to students' empathy with the environment? Why? (qualitative)

Pilot Study

In August 2011, I initiated a pilot study at the middle school where I am employed as an art teacher. I conducted the pilot study with all six of my introductory art classes, which ranged from 6th to 8th grades. This pilot study spanned the entire fall semester and concluded in December 2011. It utilized similar data collection methods as those used for the final

dissertation study including pre and post drawing exercises, interviews, focus groups, observations, reviews of visual/verbal journals, and pre and post surveys. The overall design as a mixed methods case study was also similar, but it diverges in that I collected data with six classes rather than one and conducted fewer interviews than in the final dissertation study. For the pilot study I chose to collect data with six classes in order to have more experience with administering the data collection measures. However, for the final study, I focused on one class for a more in-depth approach. To begin the pilot study in August, I first obtained consent from students' parents and assent from students. Then, I administered a survey to participating students, the Revised NEP Scale for Children (Manoli, Johnson, & Dunlap, 2007), and administered a drawing prompt. Throughout the semester, I implemented a critical place-based art curriculum, recorded my observations, and reviewed selected students' visual/verbal journals. In December, I administered the NEP Scale for Children and the same drawing prompt. I also interviewed three students and conducted two focus groups with select students from two different classes.

One primary aim in conducting the pilot study was to discover the strengths and weaknesses of the curriculum and instruction so that I could make adjustments for the final study. The data collection methods helped me to make these determinations. The student feedback during the focus groups offered insights into which aspects of the program were most helpful in cultivating ecological attitudes. I listened to their feedback and kept the projects and elements of the curriculum they found most helpful. From my own observations, I determined that the pace of the curriculum needed to be adjusted. Specifically, I found that the first unit of the curriculum on harmony was so long that we did not have time to cover the final unit on transformation. Since the transformation unit represented the culminating unit of the curriculum

designed to empower students to work creatively for ecological change, I did not want to neglect it. Therefore, I decided to eliminate one of the projects from the harmony unit, one that students in the focus group indicated that they liked but did not impact their ecological attitudes as effectively as the others. The survey results indicated a minimal improvement in students' ecological paradigms. Based upon survey results, I determined that the level of explicit ecological instruction needed to be increased. In implementing the curriculum, I encountered several logistical issues that did not allow me to fully and successfully implement the new curriculum. I encountered problems related to taking nature walks, growing plants, finding a community venue for a student art exhibit, finding funding for a field trip, and scheduling guest speakers. Therefore, some of these activities did not occur or did not occur with all six classes. After the pilot study, I reflected on these problems and found solutions before the final study.

Another purpose for conducting the pilot study was to identify the strengths and weaknesses of the data collection methods so that I could make improvements before the final study. I assumed the survey was developmentally appropriate since students did not ask questions regarding the meaning of the items. In the focus groups, I found that students appeared very comfortable and that these group interviews were able to yield a wealth of data regarding students' experiences during the program. In reviewing visual/verbal journals, I realized that students were demonstrating empathy but often in response to specific, teacher-provided prompts. Therefore, I determined that the entries may better provide data of students' demonstrations of empathy rather than their experiences of it so I changed the research question to "How do students demonstrate empathy. . . ?" rather than "How do students experience empathy. . . ?"

The drawing exercises and corresponding post-interviews were the most problematic data collection method in the pilot study because I found that they were not able to provide the data necessary to describe how students experienced empathy with the environment at the beginning and end of the program. In all the drawing exercises I examined, students chose separate experiences of connecting with the natural world for the pre and post drawings, as I expected. However, both the pre and post experiences normally occurred previous to the program while students were on vacation. While the drawings did not portray events that occurred during the program, they could still be valuable because of the experiences that students chose to represent or the way they verbally described them. However, the drawings were difficult to interpret without verbal data, and the verbal data from the post-interviews was not able to provide a pre and post comparison. Therefore, I decided to include a written component with the drawing exercise so that students would have the opportunity to describe the experience verbally, both pre and post for comparison. I hoped that by comparing students' written descriptions of their experiences, I could better understand how students' experiences of empathy might have changed since the beginning of the program, even if they were revisiting experiences that occurred previous to the program. In addition, I hoped the existing post-interviews could supplement the written descriptions to allow for additional clarification of the drawings and writings and for in-depth discussion of their experiences. Because of the need for adjustments in the data collection methods, the obstacles I encountered in fully implementing the curriculum, and my recognition of the need for adjustments to the curriculum, I did not elect to use the pilot study data to compare with the final study results.

Methodology and Research Design

Mixed methods purpose. This study is designed as a mixed methods case study. My purpose for mixing methods is expansion (Greene, 2007). In a mixed methods study with an expansion purpose, mixed methods are used to expand the range of the study by expanding the research questions to examine different phenomena. In this study, the primary phenomenon, students' experiences of empathy with the environment, is expanded to include a secondary phenomenon, students' pro-environmental orientations (ecological paradigm). Because empathy with the environment and pro-environmental orientations are positively correlated (Karlegger & Cervinka, 2009), the two phenomena are appropriate to examine within the same study.

I used qualitative methods to examine students' empathy with the environment and quantitative methods to measure students' pro-environmental orientations. I expanded the design to also examine students' pro-environmental orientations since an ecological paradigm, a paradigm defined by the recognition of relationships and interconnection, is closely tied to empathy, the ability to connect with and understand another. I expected that the development of empathy with the environment would also increase students' development of an ecological paradigm. By examining both of these phenomena through a mixed methods approach, I hoped to gain additional understanding of participants' relationships with the environment while they participated in a critical place-based art education program.

Teddlie and Tashakkori (2006) argued for researchers to define the mixed methods design typologies they are using so that the typologies can guide the research practice, determine a common language for the field, legitimize the field, and serve as pedagogical tools. Creswell, Plano Clark, Gutmann, and Hanson (2003) described four factors that help researchers to determine the mixed methods typology: 1) the data collection implementation, 2) the priority of

qualitative or quantitative research, 3) the integration stage, and 4) the possible use of a transformational value-oriented or action-oriented perspective. Using these factors, they identified six major designs: sequential explanatory, sequential exploratory, sequential transformative, concurrent triangulation, concurrent nested, and concurrent transformative. The design of this study does not fit neatly into one of these mixed methods typologies because of its variance in its implementation of data collection (Factor 1).

Table 1

Implementation of Data Collection Measures

Type	January	February-April	May
Pre and Post	Drawing exercise		Drawing exercise
	Survey		Survey
Periodic	Student visual/verbal journals		
	Observations		
Post			Focus groups
			Individual Interviews

=qualitative data collection measure

=quantitative data collection measure

Factor 1: Implementation of data collection. Implementation for this study is both simultaneous and sequential. At the beginning and end of the study, the implementation of qualitative and quantitative methods was simultaneous. The drawing exercise (qualitative) and the survey (quantitative) were administered pre and post. In addition, focus groups and interviews (qualitative) were administered post. However, throughout the data collection period, I employed qualitative methods: observations and reviews of student visual/verbal journals.

Thus, these qualitative methods were sequential to the quantitative and qualitative ones that occurred before and after. Table 1 above demonstrates the order of implementation.

Factor 2: Priority of qualitative or quantitative research. Greene, Benjamin, and Goodyear (2001) claimed that the researcher should determine the most important research question and then prioritize the qualitative and quantitative methods accordingly (p. 306). Since the most important question in this study is Research Question 1, related to how students demonstrate empathy with the environment, this study is qualitative dominant. In addition, I employed more qualitative research questions. Two of the three research questions are more qualitative. Also, the qualitative data lent more data related to my primary goal: to understand how students demonstrate empathy with the environment in a critical place-based art education program. The dominance of a qualitative or quantitative approach is also contingent on which method provides more insight into the inferences and conclusions. In this case, the qualitative findings weighed more heavily. Table 2 in the data collection methods section demonstrates the dominant data collection methods.

Factor 3: Integration stage. To address where the mixed methods were integrated, I will first address where the mixing occurred. Mixing occurred in the research questions, data collection methods, and inferences/conclusions stages. The research questions were mixed with two qualitative questions and one quantitative question. The sampling strategy was not mixed. Data collection methods were mixed with a variety of qualitative methods (drawing exercises, interviews, focus groups, observation, and student visual/verbal journals) and one quantitative method (a survey). Data analysis occurred for both qualitative and quantitative data separately. I drew inferences by comparing the results of both the qualitative and quantitative data analyses.

Though mixing occurred in a variety of stages in the study, integration only occurred in the inferences and conclusions stage. Therefore, I used a component design with a parallel-track analysis. Greene and Caracelli (1997) described component designs, “. . . the methods are implemented as discrete aspects of the overall inquiry and remain distinct throughout the inquiry. The combining of different method components occurs at the level of interpretation and conclusions rather than at prior stages of data collection or analysis” (as cited in Greene, 2007, p. 121). Greene, Benjamin, and Goodyear (2001) claimed this design fits well with the pragmatic approach; whereas, the integrated design fits well with the dialectic stance, with its strong emphasis on dialogue.

Rationale. A mixed methods case study approach. I chose a case study design (Stake, 1995) in order to understand student experiences of empathy within the real-world context of a classroom. A case study design provides rich, in-depth understanding. Stake (1995) claimed, “Case study is the study of the particularity and complexity of a single case, coming to understand its activity within important circumstances” (xi). For this study, the single case or “bounded system” was one of my middle school introductory art classes. Therefore, my role within this case study was that of teacher and researcher (Stake, 1995).

The case study is instrumental: the issue determined the case selection (Stake, 1995). Therefore, I expected that studying my middle school introductory art class would be instrumental in understanding student experiences of empathy with the environment. My goal was to select a “typical” case, a case that in many aspects may be transferable to other contexts. A “typical” case is important since little research has been conducted in this field. More unusual cases may be necessary later as this field expands. However, I understand that the true focus of

the case study is the “particularization” and “uniqueness” of the case (Stake, 1995, p. 7) and that no case can be truly “typical.”

In catching the complexity of a single case (Stake, 1995), mixed methods have been a great ally. As demonstrated in the review of place-based education, mixed methods have commonly been used to study the various effects of place-based education. I examined experiences with the environment and effects of the program through a mixed methods approach. This mixed methods approach allowed me to expand the scope of the design to better understand the various phenomena. Through this mixed methods case study approach, I operated as a teacher researcher.

Teacher research. Teacher research is a form of practitioner research defined as “systematic and intentional inquiry carried out by teachers” (Cochran-Smith & Lytle, 1993, p. 7), which often occurs in collaboration with university faculty (Cochran-Smith & Lytle, 2009). Though traditionally research into teaching involves teachers receiving knowledge about teaching from outside researchers, teacher research takes the reverse approach, an “inside/outside” approach, which shifts the role of teachers from receivers of knowledge to constructors of knowledge (Cochran-Smith & Lytle, 1993). Boundaries between inquiry and practice dissolve as teachers perform the dual roles of teacher and researcher (Cochran-Smith & Lytle, 2009). Teachers are uniquely suited for the role of researcher because they observe students over long periods of time and in a variety of situations and because they bring a wealth of knowledge about the classroom, school, and community (Cochran-Smith & Lytle, 1993). I brought this knowledge as I had taught at the school for five years and lived in the area for almost 20 years. Cochran-Smith and Lytle (2009) claimed the emphasis for this type of research is often on developing local knowledge. Because teacher research focuses on local knowledge

and the community, it is well suited for a case study approach and to investigate place-based education, a topic rooted in the local community. Through a teacher research approach using a case study, I was able to produce knowledge useful in my classroom as well as knowledge applicable to the larger community of educators.

Case selection. Since I operated as a teacher researcher, I selected one of my 7th grade introductory art classes to be the case. I believe that using one of my own classes provided me with greater accessibility than researching in someone else's classroom. I hoped that my closeness to the subject would provide additional insight. In addition, I expected that the class that I selected would represent a typical case in many aspects that may be transferable to other contexts. Although I taught three introductory art classes in the spring, I selected this one particular class over the other two because its larger size was more representative of a typical art class than the other two smaller classes. The sampling for qualitative and quantitative methods was identical, with the entire class participating in both the drawing exercises and surveys (Collins, Onwuegbuzie, & Sutton, 2006). However, the sample for the other qualitative methods, such as the interviews, visual/verbal journal reviews, and focus groups, is an exception. The sample for these qualitative methods was nested within the larger sample of the entire class (Collins, Onwuegbuzie, & Sutton, 2006). For the focus groups, I used criterion-based selection based upon a preliminary analysis of the existing qualitative data to select those students who most indicated a change in empathy during the semester. For the other methods, I selected students who represented a range of perspectives and the possibility for rich data.

Characteristics of the case. This case is situated in a mid-sized city in the southeastern United States, in the foothills of the Blue Ridge Mountains. Agriculture and textiles once formed the bulk of the economy, but the area has gradually transitioned to a more diverse

economy and now boasts a range of international businesses. Over the past decade, the community has shown a commitment to revitalize the city, including efforts to bring various corporate headquarters to the downtown area, to renovate the city square, to renew a dilapidated historic neighborhood, to protect natural waterways and the surrounding land, to repurpose old textile mills, to establish and update cultural centers, to support the local artistic community, and to facilitate bicycle transportation. The city boasts several colleges and hosts a farmers' market as well as various events in the city square.

The middle school is located just outside of the city limits. Approximately 700 6th through 8th grade students attend the public school. The school's 29-acre campus includes several landscaped courtyards, including one with a small waterfall leading to a pond with fish, and segments of running trails lined by trees and natural growth. Due to the efforts of two committed teachers, the school established a recycling program several years ago that recently expanded to include all of the schools within the district. In addition, the school offers Environmental Awareness as an elective class, where students participate in consolidating the school's recycled items as part of the class requirements.

Students at this school attend seven 50-minute classes a day, three of which are elective classes. Students have the option to select their elective classes from a range of academic and related arts classes, and they attend these elective classes every school day for an 18-week semester. The art department at our school offers a range of art classes with an introductory art class as the prerequisite.

The school has two visual art teachers including me. The other teacher and I share a large, semi-open classroom. The room, with high vaulted ceilings, is separated by a loft, which is supported by a partial wall separating the two spaces. However, above the loft is open space.

Therefore, sound from each class travels freely from one room to the other as it passes over the loft. My section of the room, which I will refer to as my classroom, has cabinets and shelves on two walls, a row of computers, a rolling cart with a computer and LCD projector, a dry erase board, a critique wall to display student art, square tables that can accommodate four students each, and a teacher work station. One wall of my room is primarily composed of windows. It has a glass door that leads out onto a concrete patio with benches.

The class I selected was composed entirely of 7th grade students—15 girls and 5 boys ranging in age from 12-13 years old. The class included 14 Caucasian students and 6 African American students, and 9 of the students received free or reduced lunch. Students varied significantly in achievement levels, but the class had a significant percentage of high achievers. Regarding grades, only one student had a failing semester average in a course from the previous semester. On both the English/Language Arts and Math portions of the 2011 administration of our state's standardized test, the Palmetto Assessment of State Standards (PASS), 10 students scored Exemplary, 7 scored Met, and only 3 scored Not Met. In addition, half of the students in the class were classified as academically gifted and talented. No students were diagnosed with learning disabilities, but one student was labeled as speech handicapped. One student was diagnosed with ADD, and another was diagnosed with ADHD.

In the overrepresentation of girls, of high achieving students, and of gifted and talented students, this class was somewhat atypical. However, it is typical in that it represented students from a range of socio-economic levels and racial backgrounds within a traditional public school. Additionally, its class size of 20 students is close to the national average of 22 students in visual arts classes (Parsad, Spiegelman, & National Center for Education Statistics, 2011).

This introductory art class employed a critical place-based art curriculum, a place-based curriculum with a critical component implemented within the discipline of art education. This curriculum was informed by the ecological imagination as it sought to incite students to conceive of new ecological perspectives, to embrace other ways of being in relation to the earth, to envision better ecological alternatives, and to engage in new dialogues about our role in the world. The curriculum involved Graham's (2007) recommendations for a critical place-based art pedagogy including natural history studies, cultural journalism, and transformative education. In addition, it interwove typical place-based components including hosting guest speakers, taking a field trip, studying local artists and art forms, and engaging with local social and ecological issues. See Chapter 2 for a description of the theoretical underpinnings for this curriculum, Chapter 4 for a full narrative of the curriculum, and the appendices for related curricular documents.

Data collection methods. As a mixed methods study, this study incorporated both qualitative and quantitative data collection methods. In qualitative designs, the researcher is the data collection instrument (Mertens, 2010). I engaged in a high level of participation since I functioned as a teacher researcher. As the data collection instrument, I conducted drawing exercises, interviews, focus groups, observations, and student visual/verbal journal reviews to address the following topics related to Research Questions 1 and 3: 1) student demonstrations of empathy with the environment during the semester, and 2) the aspects of the program that contributed to student empathy with the environment and how they contributed (if so). Research Question 2 is a more quantitative question. The quantitative variables that relate to this question are students' pro-environmental orientations and their participation in a critical place-based art education program. This question was addressed through a survey, the New Ecological

Paradigm (NEP) Scale for Children (Manoli, Johnson, & Dunlap, 2007) that was implemented pre and post (see Appendix E). Table 2 below outlines the qualitative and quantitative data methods that were used to collect data for each research question and their priority.

Table 2

Research Questions & Data Collection Methods

Research Question	Drawing Exercises & Interviews	Focus Groups	Observations	Visual/Verbal Journals	Surveys
1. How do middle school students demonstrate empathy with the environment throughout their participation in a critical place-based art education program?	X	x	X	X	
2. How does participation in a critical place-based art education program affect students' pro-environmental orientations (ecological paradigm)?					X
3. Which aspects of a critical place-based art education program, if any, contribute to students' sense of empathy? Why?	x	X	X	x	

=qualitative method X= primary data collection method

=quantitative method x= secondary data collection method

Drawing exercises and individual interviews. Participant drawing is an image-based research method that provides a valuable research approach, particularly when working with young people. Its strength includes its participant-focused approach, its alternative form of communication, and its elicitation of young people's unique perspectives. First, students are already very familiar with the process of drawing and the necessary tools and materials

(Einarsdottir, Dockett, & Perry, 2009). As a non-verbal mode of communication, drawing provides an alternate way for students with low literacy skills to articulate their experiences (Barker & Weller, 2003). Additionally, drawing united with participant interpretation combines the non-verbal and verbal, a more comprehensive form of communication that many young people may prefer (Einarsdottir et al., 2009). Through these modes of communication, students are able to convey their own unique perspectives, stories, and narratives (Georgakis & Light, 2009). As they creatively reveal their imaginative and lived worlds, emotions and feelings emerge that may have been latent or inarticulate (Leicht, 2008; Freeman & Mathison, 2009). This process reveals these valuable perspectives in an intrinsically motivating way and in ways that may be less threatening than other methods (Leicht, 2008). Moreover, these perspectives are often revealed in their fullness and complexity (Freeman & Mathison, 2009).

During this process, participants are actively engaged in constructing meaning. Thus, this research method is very participant-focused (Georgakis & Light, 2009). Although I provided the prompt for the drawing, participants had a good deal of control of the process (Barker & Weller, 2003). They were able to choose the specific subjects they drew from the general topic and had the freedom to represent them visually using different art materials. Such freedom empowers participants, responds to their developmental needs, and provides a range of data. In addition, when students are asked to interpret their drawings, the discussion often becomes student-led (Georgakis & Light, 2009). These discussions further engage the participants in the research process and alter the traditional power dynamic between participants and researchers.

As a participant-focused approach, the analysis of young people's drawings relies on discovering the participants' intentions (Einarsdottir et al., 2009). Bosacki (2008) described how

drawing and the artist's intentions are intimately related. The researcher takes a stance of not knowing and positions the participant as the expert. In this case, I asked participants for their interpretations of their drawings in an interview. This method allowed me to gain a better understanding of participants' intentions. I used participants' interpretations in conjunction with the visual data so that the drawing itself was not the only data source. This de-emphasis on the actual drawings occurred because the meaning of images resides more in the participant's intention than in the images themselves (Einarsdottir et al., 2009). Thus, the drawing itself served more as an elicitation device as a means to rich verbal data. This verbal data was also generated through participants' written description on the back of the drawing describing the experience.

Participant drawing was appropriate for this study and context. Though older participants are more likely to be resistant to drawing methods (Barker & Weller, 2003), Einarsdottir et al. (2009) claimed that classroom contexts that emphasize creativity and the artistic process over the final product are more likely to influence participants to embrace drawing. Thus, I did not expect my art students to be resistant to drawing as an activity. Second, participant drawing is best suited to answer research questions that seek participants' perspectives, narratives, stories, emotions, or feelings—in this case, students' experiences of empathy with the natural world.

Because a drawing exercise is appropriate for this study's context and research topic, I administered pre and post drawing exercises along with a corresponding writing prompt with all students (see Appendix A for the drawing and writing prompt). Like the other pre and post measures, the pre drawing occurred within the first two weeks of the program (January), and the post-drawing occurred within the last two weeks of the program (May). In both cases, I provided the entire class with a drawing prompt, which asked students to draw a time they felt connected

to the natural world and to describe the experience in writing on the back of the prompt. Eight select students had the opportunity to describe their pre and post drawings in individual, semi-structured interviews toward the end of the program (see Appendix B). I used primarily maximum variation sampling to select participants for the interviews. In selecting participants, I first conducted a preliminary analysis of the qualitative data to identify those participants who represented cases of interest either in their strong levels of empathy, their lack of empathy, or the ambiguity of their response. During these semi-structured interviews (Roulston, 2010), I asked each student the same open-ended questions included on the protocol but asked additional probing questions as needed. The interviews lasted approximately 10-20 minutes with each student and were conducted during students' study hall periods or during one of their elective classes with their teacher's permission. They occurred individually in a small guidance office conference room so that we could have privacy since interviews in my open classroom would have been easily overheard by the other art teacher's class. I audiotaped these interviews with participants' permission and then transcribed them.

The drawing and writing prompt as well as the accompanying interviews were primarily intended to address Research Question 1, students' experiences of empathy with the environment throughout the program. In both pre and post drawing, students were depicting a time they experienced empathy with the environment. Because drawings are often difficult to interpret without corresponding verbal data (Freeman & Mathison, 2009), I included a verbal component by asking students to describe the experience in writing on the back of the prompt. This verbal data allowed for a pre and post comparison that would have been difficult with the visual data alone. My aim in comparing students' written descriptions of their experiences was to better understand how students' experiences of empathy might have changed since the beginning of the

program, even if they were revisiting experiences that occurred previous to the program. By supplementing the written descriptions with post-interviews, I aimed for clarification of the visual and verbal data from the prompts and for rich description of their experiences.

In the tradition of phenomenological interviewing, I approached the interviewee as an interested learner, eager to learn about the participants' life experiences without influencing their responses. Therefore, I took a neutral but interested stance. I aimed to provide a "supportive, non-therapeutic environment in which the participant feels comfortable to provide in-depth descriptions of the life experiences of interest to the researcher" (Roulston, 2010, p. 17-18). I listened carefully without interrupting and followed up participants' descriptions with questions relating to specific details stated previously by the participants. I aimed to minimize my own conversation and refrain from evaluating participants' responses.

Focus groups. Focus groups bring groups of people together to discuss a topic provided by a facilitator (Roulston, 2010). These topics often surround an experience participants have in common (Freeman & Mathison, 2009)—in this case, participants' experiences as part of a critical place-based art education program. Group interaction is encouraged as a way of generating data (Kitzinger & Barbour, 1999) and can generate a wide range of ideas and viewpoints in a short period of time (Roulston, 2010). Therefore, focus groups were particularly appropriate to address Research Question 3, which sought to understand which aspects of the program were most effective since participants all had the common experience of participating in a critical place-based art education program. I expected that the group interaction might stimulate memories, insights, and understandings that would not be possible through other methods. In addition, the group setting might have been particularly appropriate for research with this age group since it lessens the power imbalance and possible discomfort that can

typically result in research between teachers and students. Freeman and Mathison (2009) claimed that focus groups can reduce adult power, alleviate pressure to answer questions, and offer group support to individuals.

Because of these benefits of focus groups and its appropriateness to address Research Question 3, I conducted two post focus groups, lasting approximately 45 minutes with four participants each, to understand which aspects of the program were most effective in facilitating empathy with the environment (see Appendix C for the focus group guide). Each of these focus groups was conducted after school in the art classroom, which provided a quiet, uninterrupted setting during after school hours. I used intensity sampling (Mertens, 2010) to select participants who clearly demonstrated empathy with the environment during the semester, which I determined through a preliminary analysis of the qualitative data. I audiotaped these focus groups and then transcribed them.

In conducting the focus groups, I followed a similar approach as with the individual interviews in that I sought to provide a supportive, non-therapeutic, non-judgmental environment. However, I also sought to foster and facilitate group interactions. I remained mindful that one or two vocal participants might seem to dictate the shared consensus of the group (Hurworth, Clark, Martin, & Thomsen, as cited in Freeman & Mathison, 2009) and provided opportunities for dissenting voices. My role was to initiate the topic through opening questions; to ask probing questions as necessary for clarification and additional meaning; to engage those who do not readily join in the discussion; and to ensure that the conversation stays on topic.

Observations. Wolcott (2008) described how participant observation is founded on “firsthand experience in naturally occurring events” (p. 49). The researcher’s participation can

vary on a continuum from complete participation to nonparticipation. As a teacher researcher, I took the active role of a complete participant observer as I fully participated in the classroom activities as well as gathered evidence related to students' experiences of empathy with the environment and the aspects of the program that were most effective. Observations provided support for the qualitative research questions and allowed for thick description of the case. These observations occurred throughout the data collection period—one 18-week semester. As a teacher researcher, I recorded observations periodically in order to record how the curriculum and methods were implemented, to detail examples of students' empathetic behaviors and understandings, and to document possible influences on these behaviors. I defined empathetic behaviors as any behavior that demonstrates a consideration of another, whether human, animal, plant, or environment. Examples of these types of behaviors might include expressing interest in watering their growing radish plants, requesting to return snails from the nature walk back to their natural habitats, volunteering to share personal art materials, and asking questions to the guest speakers that show a concern for the health of the environment. I recorded these observations at least once a week in my researcher journal. Due to my active status as observer, I usually did not have time to take field notes during class. However, I recorded my observations before the end of the day in most cases.

Student visual/verbal journals. The use of image-based research has increased over the past few decades and has been increasingly accepted within the social science research community as a valid form of data (Freeman & Mathison, 2009). Image-based research can include found, researcher-generated, or participant-produced images. For this study, I used participant-produced images through student visual/verbal journals as a way to provide students with an alternative form of representation of their experiences, to tap into latent emotional

perspectives, and to provide data triangulation. Students' visual/verbal journals were created as part of the course requirements.



Figure 1. Emma's visual/verbal journal entry. 2012. Collage.

Visual/verbal journals are a form of journal or sketchbook in which students are encouraged to create or include images and write interchangeably. Both writing and drawing as research methods give students control of the data and have the potential to provide them with a sense of ownership (Freeman & Mathison, 2009). As part of this process, students responded to teacher-created prompts and freely sketched and reflected periodically as well, approximately twice a week (see Appendix D for a list of visual/verbal journal prompts). In addition, students used their journals to sketch ideas for their five art projects throughout the semester. Like the observations, reviews of student visual/verbal journals occurred throughout the semester and provided data for Research Questions 1 and 3 on students' experiences of empathy with the environment and which aspects of the program had most impacted these experiences. I defined

evidence of students' experiences of empathy as any image, text, or combination thereof that represents an understanding of or concern for another, whether human or non-human.

In reviewing these documents, I did so with the view that students' empathetic responses could represent actual empathetic experiences because although students were responding to teacher prompts, the prompts were open-ended enough that empathetic responses would likely stem from an actual empathetic experience. Nevertheless, I was also aware that these visual/verbal journals are also products (Prior, 2003). In reviewing them, I considered the reader of the document—in this case, the students and myself. Prior (2003) argued, “. . . those who use and consume documents are not merely passive actors in the communication process, but also active in the production process itself” (p. 16). As the teacher, who assigned visual/verbal journal entries, loosely instructed students in how to complete them, and graded them based upon participation, I was an important consumer of the products. In addition, the students themselves were consumers of each other's journals as they often shared entries with the class and discussed them at their tables as they worked. Thus, the content and ways of representing the content in these entries might have been critically shaped by their awareness of their audience—their desire for approval from the teacher and their classmates and the desire to receive a good grade.

Surveys. I administered the New Ecological Paradigm (NEP) Scale for Children (Manoli et al., 2007) with students both pre and post. This survey is a modification of the revised New Ecological Paradigm (NEP) Scale (Dunlap, Van Liere, Mertig, & Jones, 2000), which is a revision of the New Environmental Paradigm (NEP) Scale (Dunlap & Van Liere, 1978). While the revised NEP Scale (Dunlap et al., 2000) has a reliability of .83 and has been widely used in a variety of countries, this modification of the revised NEP Scale occurred so that the scale, originally intended for adults, would be appropriate for use with upper elementary children, ages

10-12. I decided to use this scale since its design was much more developmentally appropriate for my 12-13 year-old students than the original designed for adults. Manoli et al. (2007) modified the language in order for it to be more developmentally appropriate, and reduced the number of scale items. Like the original, the scale contains a 5-point Likert type scoring system, which ranges from 1 (strongly disagree) to 5 (strongly agree). When scored, four items are inversely scored. The total scale score ranges from 10, indicating an endorsement of the dominant social paradigm (DSP), to 50 indicating an endorsement of the new ecological paradigm (NEP). A score of 30 indicates a neutral stance between the two opposing paradigms. This scale was revised and validated through a three-year study with 672 participants (Manoli et al., 2007). They found the scale is appropriate for use with children ages 10-12. They also found it measures three interrelated aspects of students' pro-environmental orientations: the rights of nature, the eco-crisis, and human exemptionalism—the idea that humans are exempt from following the rules of nature. In addition, they found that it is capable of providing an overall score to indicate a student's position on a continuum between an anthropocentric and ecocentric orientation.

Through administering the NEP Scale for Children to students, I aimed to discover how the critical place-based art curriculum might have impacted students' pro-environmental orientations. The survey provided an overall score of students' environmental orientations, on a continuum between a Dominant Social Paradigm (DSP) and New Ecological Paradigm (NEP), and also provided information on their views on the rights of nature, the eco-crisis, and human exemptionalism (see Appendix D). By administering the survey pre and post, I learned how students' views might have changed, which might suggest the impact of the curriculum.

Quality of data. Greene (2008) declared that the methodological traditions should determine the methodological criteria of quality one should adopt. Therefore, I judged the quality of quantitative data by the validity criteria of postpositivism. In selecting the survey instrument, I selected an instrument that has been well tested for validity and reliability (Manoli et al., 2007). In administering surveys, I assured students that their responses would remain anonymous and would not influence their grades. In analyzing the data, I tried to remain as neutral and objective as possible. Likewise, I judged the quality of the qualitative data by the trustworthiness criteria from constructivism. I used prolonged engagement and thick description to contribute to the trustworthiness of the findings (Guba & Lincoln, 1989).

Functioning as a teacher researcher presented strengths and weaknesses. For example, my role as teacher researcher might have caused students to feel pressure to indicate high levels of empathy in the interviews and the focus group. Visual/verbal journals might have also carried the risk since they were not anonymous. One way that I sought to minimize this threat is through the protocols. For example, before the interviews, focus groups, and visual/verbal journal prompts, I assured students that I wanted their honest responses and that their responses would not factor into their grade in any way. Hopefully, through my prolonged engagement with the students, students felt comfortable being open and honest.

Data analysis. Li, Marquart, and Zercher (2000) described a parallel track analysis as both qualitative and quantitative components proceeding separately through data reduction and transformation until the data comparison and integration stage. In this component design, I used a parallel track analysis. By keeping each set of data separate during data reduction and transformation, I was able to uphold the procedures of both qualitative and quantitative methodological traditions (Greene, 2007), and, thereby, add validity to the results (Cook &

Reichardt, 1979). In addition, Greene (2007) claimed this approach presents less challenges than an integrated design.

To analyze the qualitative data, including the drawing exercises, interviews, focus groups, observations, and visual/verbal journals, I used the constant comparative method from the grounded theory tradition (Glaser & Strauss, 1967). First, I conducted an initial coding of the data. I used incident-by-incident coding to code each incident in the observations and line-by-line coding to name each line of data in the other verbal data sources. The visual data in both the drawing exercises and visual/verbal journals was secondary and supplemented the verbal data. After the initial coding, I used focused coding to reduce the codes to a small set of emerging themes. Next, I used axial coding to compare themes across each set of qualitative data. Some of these codes included: appreciating the beauty of nature, opening eyes, affecting change, experiencing a new experience, enjoying curricular choices, and experiencing the world firsthand. With these codes, I formulated criteria for comparison and identified relationships between categories. Throughout the coding process, I wrote memos detailing the analytic process and exploring relationships among categories. Additionally, I created individual student matrices compiling key data from each data collection method for students who represented cases of interest. Analyzing the data on an individual basis provided a better understanding of individuals' development of empathy with the environment throughout the program and the varied responses to the curriculum.

To analyze the surveys, I consulted with the University of Georgia's Statistics Lab to tabulate and translate the data into descriptive statistics. Together, we determined the frequency distribution (counts and percentages), the central tendency (the mean and median), and the dispersion (the standard deviation and range) for each item. Additionally, we determined the

distribution of difference between pre and post surveys for each dimension as well as the total score, and then we presented these figures in tables and graphs. Last, we conducted paired *t*-tests to ascertain whether the change in scores between pre and post surveys was statistically significant. In conducting this significance test with such a small sample size, I was aware that it could lead to a Type II error, an acceptance of a null hypothesis since the treatment effect with a small sample would have to be large in order to indicate significance (Wilkerson & Olsen, 1997). However, this test was worth administering to discover if the treatment effect was large enough to determine significance even with a small sample. After analyzing both the quantitative and qualitative findings separately, I then compared and integrated both types of findings to build the case study.

Limitations and Advantages

Limitations to this study are closely tied to its strengths, including its use of a case study format and teacher as researcher. The case study design limited the transferability of the study, but provided an in-depth study of one particular case. It was not designed with a large sample size so that the results could apply to a broad range of contexts. Rather, the study was tightly situated in a certain time and place. The thick description of the case, particularly in Chapter 5 allows readers to gain insight into the context of the study and then make comparisons between this study and the context with which they would like to transfer the results. The teacher's role as sole researcher adds credibility to the study, particularly in the inferences and conclusions stages because of the researcher's prolonged engagement and proximity to the phenomenon.

The short time frame of the study, one 18-week semester, was a limitation without a corresponding strength. Since art classes at this school are only semester-long, this limitation could not be easily avoided. The empirical literature is mixed regarding the length necessary to

observe changes due to a place-based program. Ernst and Monroe's (2006) study examining the effect of a place-based education program on high school students' critical thinking dispositions suggested that one semester might not be long enough to observe significant effects in student dispositions. They found that 12th grade students who had been involved in the place-based education program for four years reported significant levels of critical thinking dispositions whereas 9th grade students did not. They assumed that critical thinking dispositions may take years to develop and prolonged exposure to a place-based education program might have been the difference. However, Creel's (2005) study suggested that prolonged exposure might not be necessary to observe the effects of a place-based education program. Although her study only encompassed a nine-week period, she found demonstrations of empathetic behaviors and positive changes in empathetic understandings. Her findings may have more bearing on this study since she, too, specifically studied empathy within an art education classroom.

Protection of Human Subjects (IRB)

Participants stood to benefit from participation in this study. They had the opportunity to engage in an innovative art education program that involved direct experiences with nature, which might have assisted them in further developing a connection with nature. Risks for participants were minimal since they were engaged in voluntary activities, most of which they would already be participating in as a normal part of the school day. The results of participation in this research were confidential, and will not be released in any individually identifiable form, unless otherwise required by law. Pseudonyms were used to ensure participants could not be identified in any way. Identifiable information on visual/verbal journals was removed before publication. The interviews and observations were audiotaped and access to these tapes was restricted to the researcher. The files of the audio were stored in a secure location. These files

will be destroyed two years after the completion of the study. The researcher scanned visual/verbal journals so that the originals were returned to students three months after the conclusion of the data collection period.

Subjectivities Statement

While research studies are informed by gaps in the literature, one cannot deny the influence of personal factors in the topic and execution of a study. My decision to study an ecologically-responsive pedagogy was influenced by my love of nature and desire to protect the earth. I believe this desire has grown since childhood as a result of frequently engaging with the land, participating in ecologically-responsive educational programs, and absorbing the ecological attitudes of teachers and family members. My decision to study empathy for the environment was influenced by my experiences as an avid reader, writer, art appreciator, art teacher, volunteer, and nature lover. Through all of these roles, I had the opportunity to experience empathy—empathy with the characters in novels, others’ art, my students, and nature. In addition, my experiences as a woman and attending a women’s college for my undergraduate education may have stimulated my interest in empathy.

Because of my background, interests, and role as teacher, I was aware that I had a strong desire to see students develop empathy for the environment. By acknowledging this desire as a researcher, I hoped to minimize its impact on the data collection and data analysis phases. I realized that I would be negotiating my role as teacher and researcher throughout the semester, and that these roles might occasionally conflict (Cochran-Smith & Lytle, 2009). As the teacher, my goal was for students to develop empathy for the environment and pro-environmental orientations as well as a thorough understanding of art concepts. This integration of ecological concerns within the discipline of art education presented challenges as I struggled to balance

teaching art content while incorporating ecological and environmental content. In implementing the curriculum, I acknowledged that as the teacher, I represented an important component of it. During the semester I aimed to produce a culture of empathy and pro-environmental concern within the classroom by exhibiting empathy and concern for others, both human and non-human.

While fulfilling my roles as researcher, my own personal characteristics played a role in the data collection and analysis. I had some characteristics in common with participants in that I lived in the same community and was enmeshed in the culture of the school. However, I differed from participants in my position as teacher, age, and education level. In addition, in some cases, I differed from participants in my female gender, White race, and middle-class socioeconomic status. I tried to be mindful of these differences as I collected and analyzed data, especially as I conducted observations and interviews.

Implications for Conducting and Generalizing the Study

This study has practical implications for policymakers, administrators, and teachers who are interested in implementing ecologically responsive education programs. In addition, teachers who are currently implementing ecologically-responsive art education programs may gain insight into the process of cultivating empathy within their classrooms and which aspects of the program are most influential.

CHAPTER 4

CURRICULUM

Because the ecological imagination suggests students must first develop a relationship with the land before they are asked to protect it, this critical place-based art education curriculum represents a progression. It begins by helping students develop a relationship with the natural world and with place. Then it asks students to imaginatively and critically consider alternatives of place. Last, it provides students with the opportunity to work toward protecting or healing the earth. This last step of engaging students to take ecological action, in many ways represents the apex of this curriculum. In the following chapter, I will outline the three units of the curriculum, provide my rationale for the inclusion of various artists and activities, and discuss relevant issues. A full curriculum outline, detailed unit plans, and a list of visual/verbal journal prompts are available in the appendices.

Harmony

Harmony is the first unit of this critical place-based art curriculum. Harmony is especially appropriate for a place-based art curriculum because it is an important principle of design as well as an integral ecological concept. During this unit, I wanted students to gain the following understandings: art can communicate harmony, elements and principles of design harmonize with ideas, artists empathize with their subjects, and craftsmanship is care. To prepare students to engage with these understandings, we began with lessons to review the elements of design, to introduce the concept of visual/verbal journals, and to encourage the exploration of various media. These lessons are outlined in the first section of the harmony unit plan in Appendix G. Students were encouraged to explore how harmony operates within the

discipline of art as well as within other arenas including the ecological. For instance, as a class we discussed the harmony among elements of design in an artwork, between elements of design and the subject matter of an artwork, between different groups of people, among plants and animals in an ecosystem, and among humans and other living things.

According to Graham (2007), three components are essential to a critical place-based art education: natural history, cultural journalism, and transformative education. This unit encompassed both natural history and cultural journalism. During this unit, students created two projects: drawings of natural objects and ceramic planters. These two projects were designed to provide students with the opportunity to develop their observation skills as they studied their natural environment through natural history illustrations and to develop a relationship with the natural world as they observed it, cultivated it, and responded to it artistically.

Natural history illustrations. We began by studying the art of William Bartram, an eighteenth-century American explorer and natural history illustrator, who traveled through our region as well as many of the Southeastern colonies to study and record the local flora and fauna. In including natural history and William Bartram in the curriculum I acknowledge the criticism of natural history for its connection with colonialism. Critics have noted that the field of natural history reached its height in tandem with European imperialism in the 18th and 19th centuries as colonization uncovered a wealth of diverse flora and fauna for explorers and naturalists to study (Buell, 1995; Kipling, 2011). As an explorer during this period, Bartram could be accused of perpetuating colonizing projects. However, Buell (1995), writing on the pastoral imagination, argued that Bartram could represent an exception. He claimed, “Bartram’s idiosyncratic spirituality leads him to the brink of cultural relativism and biotic egalitarianism” (p. 63). He went on to describe Bartram’s open attitude toward the Native Americans he

encountered in his journeys. Like Buell, art education theorist Graham (2007) has looked past the criticism of natural history to extol its benefits. He called for art educators to revisit the illustrations because of their capabilities for promoting a care for and relationship with the land. I included natural history illustrations within the curriculum as a way for students to increase their observation skills and, thus, improve their drawing skills, to facilitate direct experiences with nature, and to develop a relationship with the natural world. Bartram represents someone who modeled these behaviors through his careful observations of nature; his ability to capture the liveliness of his subjects, which was unique among the natural history illustrations of his time; and his continued interactions with nature.



Figure 2. Bartram, William. (1788). *Franklinia alatamaha* [pen and ink with watercolor].

Retrieved from http://en.wikipedia.org/wiki/File:William_Bartram01.jpg

To introduce students to Bartram's life and art, we first watched an educational video segment on naturalists who catalogued the American colonies. Then we reviewed some of the themes from the video segment including the innovation of drawing animals from live observation rather than from dead specimens or from previous illustrations and the innovation of

drawing animals interacting with the plants that form their natural habitat. Then we viewed a PowerPoint presentation on William Bartram that included his portrait, a short biography, a map of his travels, short excerpts from his writing, and, most importantly, his natural history illustrations. As I introduced the PowerPoint, I briefly addressed how many explorers and natural historians were connected with colonialism, and briefly discussed Bartram's possible connection or lack of connection with colonialism. Then throughout the presentation, we discussed his desire to describe the native plant life through his art, the influence of the art of previous naturalists on his life-like illustrations that often included his subjects' natural habitats, and his strong relationships with the Native Americans. In all these ways, he represented harmony—harmony with nature and with other groups of people.

Next, we considered the relationship between science and art in studying nature. First, we read a section on nature studies in our textbook, which discussed how both scientists and artists have studied nature. To consider how science and art overlap, we worked in groups and then as a class to complete a Venn diagram comparing and contrasting studying nature through art and through science. Students mentioned how observation is common to both, and I emphasized its importance. I exhorted students to observe the natural objects carefully as they drew them. We also discussed how art aims more for expression and embraces subjectivity, whereas science aims for objectivity. I explained that art has the power to communicate emotions and ideas about the world in creative, expressive ways.

We concluded the lesson with a discussion on the concept of harmony. First, I asked students to describe what their associations with the word "harmony." Students mentioned music and peace among other associations. Then I provided students with a dictionary definition of harmony, synonyms for harmony, and a few sentences related to harmony. Next we discussed

how harmony could be found in a variety of arenas including art, music, nature, interpersonal relationships, racial relationships, and global politics. While viewing Bartram's illustrations, we discussed how his illustrations demonstrated harmony. Last students responded in their visual/verbal journals by describing harmony in their own words and describing various harmonious relationships.

Next, the class engaged in sketching outdoors in their visual/verbal journals and took nature walks. First, we visited our school's courtyard filled with a garden, a small waterfall, and a pond. Students spread out with their visual/verbal journals and sketched various natural objects. Later, the class embarked on the old running trails through the woods surrounding segments of the school campus. We found natural objects while on these trails and brought them back to the classroom to sketch for our final sketches and first project. Through spending time outdoors and on the nature trails, students had the opportunity to experience nature directly. In addition, they had the opportunity to observe and study real natural objects as they drew them. The experiential nature of this approach is a critical component of a place-based curriculum. This direct interaction was designed to make education relevant as it connects education to students' real lives.

During this time, we spent time discussing and practicing different approaches to drawing. First, I introduced students to contour line drawing, an approach Bartram often used in his illustrations. We practiced contour line drawing in the classroom before using the technique to sketch objects outside. This technique tended to come naturally to students because it was so similar to the way that they already drew. Next, I introduced students to gestural line drawing, a more expressive approach to drawing. Then, like with contour line drawing, they practiced

gestural line drawing in their outdoor sketches of nature. This approach was a little more challenging for students because it was so unfamiliar.

In addition, I brought in a guest speaker, a retired social studies teacher who was a member of a local gardening club and taught adult classes in the community on drawing plants. Similar to my own endeavors with students, he worked with them to help them learn to observe plants carefully as they drew them. I invited him because I thought he would provide an additional perspective on drawing. In addition, I hoped he would motivate students through his obvious enthusiasm for drawing plants and his personal example of how art can be a lifelong endeavor. Inviting guest speakers is a common component of place-based education. It provides a means of involving the community, establishing intergenerational relationships, and making real-world connections.



Figure 3. Emily's nature drawing. 2012. Mixed media.

In creating their drawings, students were exhorted to use their drawings to communicate ideas and emotions. Students sketched and reflected on their ideas in their visual/verbal journals. They had the choice of using contour lines or gestural lines to draw the natural objects they collected outside. Students also had the choice of various media, including charcoal, chalk

pastels, oil pastels, colored pencils, markers, and watercolor, to use to represent the natural objects they found on the nature trails. I encouraged students to select the mode of drawing, whether contour line or gestural, and the art media based upon the ideas and emotions they would like to communicate through their artwork. Through providing students with choices—the choice of the natural object or objects they would like to draw, the choice of the ideas and emotions they would like to communicate in their drawing, the choice of the drawing technique they would like to use, and the choice of art media—I hoped students would have more ownership of the artistic process and, correspondingly, more interest in the project.

Finally, we critiqued the students' drawings through an oral critique. We posted each student's drawing on the critique wall, gave each student the opportunity to present their drawing to the class, and then opened up discussion to the rest of the class to describe, analyze, interpret, or evaluate their classmate's art. After discussion subsided on the first artwork, we continued the process by giving the next student the opportunity to present. I especially encouraged students to discuss the elements of design and the techniques they used and how these aligned with the ideas they were trying to communicate. We concluded this section of the unit by journaling on how their drawings exhibited harmony. Through these nature drawings, students had the opportunity to improve their observation and drawing skills, to study nature, and to communicate ideas about nature. I intended for this project to provide the first step in helping students develop an awareness of the natural world.

Ceramic planters. For the next segment of the harmony unit, we studied the life and art of Dave the Potter, an African-American slave potter from the Edgefield Pottery District, a pottery district within our region known for its alkaline-glazed stoneware during the 19th century (Todd, 2008). Dave the Potter was a prolific potter with a long career. His pottery stands out

from others of his time because of the unique and prominent way he signed his name on the shoulders of his vessels and because of his inclusion of poetry on the surface of some of his vessels. These unique features demonstrate his literacy, which was uncommon among slaves of his time due to laws in the South forbidding the education of African-Americans (Sambol-Tosco, 2004). While Dave the Potter's work does not directly relate to ecological issues, it does relate to harmony. His works demonstrate harmony between elements of design in their harmonious proportions and between artist and art object in their excellent craftsmanship. In addition, his lines of poetry, "I wonder where is all my relation/friendship to all—and, every nation" (as cited in Todd, 2008, p. 101), written after he was sold and separated from his friends and family, offer a place to discuss harmony and disharmony. Students responded in their visual/verbal journals to the prompt: "How does harmony relate to the life and art of Dave the Potter? Where is there a lack of harmony?"

Dave the Potter's close geographic proximity and his participation within the long pottery tradition of the region position his work as especially relevant to my students. Within this unit his works function as cultural journalism as they represent local cultural artifacts that function to connect students to the cultural traditions of their community. Graham (2007) claimed that cultural journalism honors local artistic traditions and seeks to nurture traditions and intergenerational relations. I sought to connect Dave the Potter's practice to the practice of current artists within our community by informing students about groups of potters who currently practice in our area and local resources for potters.

Dave the Potter's pottery provides examples of an artist pursuing self-expression in the midst of oppressive circumstances. Our class also sought to express ideas through ceramics, in this case, ideas about the plants we grew. The students sought to make planters that were

functional as well as expressive. Through cultivating a plant, in this case, a radish plant, students had another opportunity to interact directly with nature. Whereas in the first project students were observing and studying nature, in this project students were caring for it and cultivating it. Specifically, students planted radish seeds, watered them, and watched them grow. I selected radishes because they are easy and fast to grow and because they are edible. I hoped that through growing a vegetable, they might learn how growing their own food is very feasible, and they might be more willing to try it on their own later. For this project, students designed planters specifically to hold their radishes. They studied the qualities of the plant, reflected on it and its growth in their visual/verbal journals, and then responded to it by writing a few lines of poetry and designing a planter for it. We also discussed the basic characteristics of planters that are necessary for the plants to grow healthfully. These features included a hole for excess water to drain, a large enough opening for the plant to emerge, and a large enough body for the roots to grow. As with all projects, students created thumbnail sketches of possible ideas in their visual/verbal journals and consulted with me and their classmates to determine their strongest design before beginning construction.

Students used clay to create their hand-built planters. First, I modeled how to use the coil method to create a vessel. Next, students used this method to create the basic form of the planter according to the design they had chosen previously. Then, I demonstrated different techniques such as incising, appliqué, modeling, and pulling handles so that students would have additional techniques to use in adding features and designs to the basic form of their planters. Once the vessels were bisque fired, students glazed them, and then they were glaze fired. Last, students transplanted their growing radish plants into their finished planters and added additional soil to fill the larger vessel.



Figure 4. Glazed planters. 2012. Ceramics.

After the planters were glaze fired, the class critiqued the planters. Similar to the first critique, students described, analyzed, interpreted, and evaluated their artworks. I especially encouraged students to consider the relationship of harmony to their artwork in the relationship between the elements of design and the plant and the planter, in design and function. The unit concluded with a written summative assessment describing, interpreting, and evaluating their nature drawings and planters and a visual/verbal journal assignment on harmony. At the end of the unit, students were allowed to take their planters and plants home. Those whose radish plants were failing were encouraged to plant basil seeds instead. I encouraged students to harvest their radishes and basil at home and to enjoy eating them with their families. My idea in having students cultivate a radish plant and design a home for it was for students to have additional experiences with nature, to exercise care for it, and to begin to understand how harmony is possible within the natural world.

Place

After considering how harmony operates in art and in the natural world, we moved on to explore the role of place. An exploration of place is fundamental to a place-based education program as it provides a physical arena to examine the intersection of different social, ecological, and artistic concepts. In this case, I wanted to particularly highlight how art can respond to the

social and ecological issues of a place. During this unit, I aimed for students to gain the following understandings: art can communicate ideas about place and art can envision alternate realities. This unit began by encouraging students to consider their relationship with a place and to express that relationship through a painting. Then, after students had thoroughly considered this relationship, they were encouraged to contemplate the future of a place in the community and to represent that future through a drawing. Through these two projects, I hoped students would identify how place plays a role in their lives and would consider how our actions can impact place.

A special place. We began by studying the art of local, contemporary painter Isabel Forbes. Forbes grew up in our city and even attended schools within our school district. After high school she moved away to attend college and eventually returned to our city almost two decades later (Knight, 2009). Now, she is a practicing artist and actively involved in our local artistic community by serving on the artists' guild's board of directors and exhibiting frequently in local, regional, and state exhibits. Her paintings depict local, and often historic, recognizable locations within our city including water towers, railroad tracks and overpasses, abandoned mills, vintage diners and restaurants, and old mill homes. These paintings are somewhat nostalgic in that the places she depicts are all from an earlier era. Some of these places continue to be utilized by the community while others represent only the remnants of the past. One striking example is her painting *Rainy Night, Krispy Kreme* (2011), an eerie painting of an abandoned donut shop. People familiar with the community would know that the shop she depicted is closed and has been replaced by a brand new version situated across the street. Through these paintings that nod toward the past, Forbes manages to discover beauty within the crumbling remains of our city's landscape. However, her style is not overly romanticized

(Knight, 2010). One community member saw parallels between her work and that of Edward Hopper in her realism and careful compositions (Coburn, as quoted in Knight, 2010).



Figure 5. Forbes, Isabel. (2011). *Rainy Night Krispy Kreme* [oil on canvas]. Retrieved from <http://isabelforbes.com/artwork/hub-city/> Copyright 2011 by Isabel Forbes. Reprinted with permission.

Her art was especially appropriate to include within this unit on place given that she is an artist actively involved in our community, the subject matter of her works directly addresses our community, and her works reveal a clear vision of place. In viewing Forbes' work, we discussed her possible purposes in selecting her subject matter, her style of painting, and the ideas her works communicate. Students were extremely familiar with the subjects of these paintings and often responded with enthusiasm after recognizing the locations. Many were eager to share their connection with the places she represented. I shared quotes from Forbes about her paintings to help students understand her relationship with place and possibly how that relationship could be embodied in her paintings. These quotes included: "I sure love when I hear some really heartfelt stories associated with the places I paint" (as quoted in Knight, 2010, para. 6), "This [focusing on

local scenes] all started when I painted my stepfather's drug store, Heinitsh Walker.

Unfortunately he never got to see the painting because he passed away a year ago,” and, “My inspiration comes from the scenes I come across in my daily life. . . .” (Knight, 2009, pp. 2-3).

Later in the unit as students were developing their own paintings, the artist Isabel Forbes visited the class and shared her inspiration for painting places in our city and answered questions about her career as an artist. In addition, she provided each student with a small print of one of her paintings at the end of her visit.

After examining Forbes’ works and discussing how art can reveal ideas about place, we concluded the lesson by journaling on our definitions of place. While the term *place* was a very familiar one for students, this focus on the term allowed students to examine their own conceptions. After journaling, students had the opportunity to share their responses with the class. This sharing stimulated a discussion on issues surrounding place including boundaries, emotional connections, and community relationships.

In the next lesson, we began to consider our own relationships with place. I displayed Caspar David Friedrich’s painting *Wanderer above the Sea of Fog* (1818), in which a lone figure stands high on a rocky ledge facing an immense landscape of mountains and fog. Then, I asked students to journal about their favorite place to go to be alone and how they feel when they are there. This exercise was designed to reveal students’ connections to particular places. I encouraged students to select a place that they go to somewhat regularly, at least twice a year, so that their responses would reveal a close and continued connection rather than a momentary one that might have occurred once on a vacation. I had hoped that including an example image of a person outside and telling a story of how I often walk to a river a few miles from my house might stimulate students to consider outdoor places. However, when a few individual students

mentioned different indoor locations, I told them that response was completely acceptable. My aim was for students to reflect on a meaningful experience with place. I did not want students to fabricate an experience in order to meet my expectations of their close relationship with nature. In addition, I believed a relationship with any location could provide a foundation that could later be expanded on to include a relationship with a more natural environment. I soon informed students they would be creating a painting that represented their relationship with this place.



Figure 6. Friedrich, Caspar D. (1818). *The Wanderer above the Sea of Fog* [oil on canvas].

Retrieved from http://en.wikipedia.org/wiki/File:Caspar_David_Friedrich_032.jpg#file

Following these reflections on place, we delved into the art concepts and techniques students would need to effectively represent place and their relationship with it. First, we focused on color theory. We learned about the color wheel including primary colors, secondary colors, tertiary colors, complementary colors, and neutral colors. Students created their own color wheels so that they could practice mixing these colors. Next, I presented students with some examples of various painting techniques and styles from Western artists with very distinct styles, such as Vincent Van Gogh, Edvard Munch, and Georges Seurat. I gave students the

opportunity to experiment with these various techniques and styles and encouraged them to either adopt one of these styles or adapt one to create their own painting style to use in their project. Students identified their chosen style and reflected on it in their visual/verbal journals.

In the next lesson, students began developing their paintings. They first created thumbnail sketches in their visual/verbal journals of the place they go to be alone. I encouraged them to draw the place using the style they selected or adapted in the previous lesson. Students drew the places from memory. By not asking the students to draw from observation, I realized that the paintings would tend to be less realistic. However, I hoped that by drawing from memory, students would focus on their relationship with place as they visualized it and, correspondingly, would use more expression in their paintings. After students consulted with their peers and with me, they selected their strongest sketch to use in their paintings. Students sketched the place and then used their painting style of choice to paint the place with tempera paint.

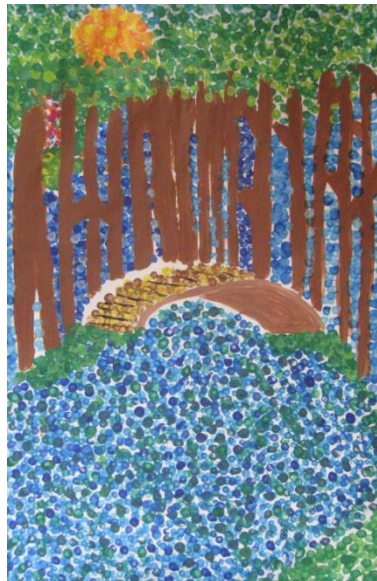


Figure 7. Emma's special place painting. 2012. Tempera.

This section of the unit concluded with a class critique of their paintings. We followed the same process as with the nature drawings. In addition to the standard process of describing, analyzing, interpreting, and evaluating their works through a discussion, I encouraged students to communicate how their paintings represent their relationship with their chosen places by specifically discussing their choice of subject matter, painting techniques, styles, and colors. Through this project, students began to contemplate the nature of place, individuals' relationships with place, and their own relationships with specific places. I intended for students to develop an enhanced awareness of place and maybe even a stronger relationship with the places in their lives.

Alternatives of place. This second section of the unit began by asking students to map their communities. Students worked in groups of three to four to map important places within their community. I informed students that their emphasis should be on including specific locations rather than drawing the maps to scale. Therefore, students' maps became representations of important places in the community in their approximate vicinity rather than accurate maps. After mapping, students were invited to present their maps to the class. Then, the class engaged in a discussion about which places were most common on the maps and the possible reasons for their widespread inclusion. Through this mapping and sharing activity, students had the opportunity to reflect on the nature of community and which places are most central to their idea of community. Next, I asked students to select one place from their community map that strongly represented community to them and that they would later address in an artwork. To conclude the lesson, students reflected in their journals about their chosen place and their relationship with it.

Next, the class studied the art of Alexis Rockman, a contemporary American artist who paints in realistic detail. His works address the consequences of human actions on the environment in the form of global warming and the genetic modification of livestock and crops. These large-scale paintings often confront us with apocalyptic visions of our future where human civilization is in ruin and nature reasserts control. For example, his mural commissioned for the Brooklyn Museum of Art, *Manifest Destiny* (2004), depicted Brooklyn, New York three thousand years in the future. Due to global warming, the buildings of the city are submerged in water. Human beings are notably absent as an array of wildlife fly, swoop, swim, and burrow through the ill-omened, futuristic landscape.



Figure 8. Rockman, Alexis. (2004). *Manifest Destiny* [oil on wood]. Retrieved from <http://alexisrockman.net/projects/american-icons> Copyright 2009 by Alexis Rockman. Reprinted with permission.

Though the imagination often allows us to envision better alternatives, it also awakens us to the harshness of our current conditions and inspires us to act for change. Rockman's works are capable of rousing such an imagination. His works represent an imaginative, alternative state of affairs, which alert us to the dangers of our current ways of being in the world and stir us to action. While these works could easily be used to incite fear for our world's future, research

suggests that approaches rooted in fear inhibit creative problem solving (Fretwell, 2009). Orr (1994) advocated for helping students develop a love for place instead of instilling fear. Therefore, instead of using Rockman's works to focus on the perils of our global ecological course, they functioned as an example of how artists can be concerned for place, use their imaginations to conceive of ecological possibilities, and communicate their ecological ideas to the public.

In the previous lesson, students chose a particular place that they felt represented an important part of their community. They were informed that they would later be creating an artwork related to their chosen place. With that future drawing in mind, we viewed a PowerPoint presentation on the art of Alexis Rockman. As we viewed his works from his *American Icons* series, we discussed his representations of place and the ideas they communicate. To apply Rockman's concerns to our own community, students used our local newspaper's website to search for local newspaper articles related to their chosen place. While on this website, they completed a worksheet that guided them in highlighting important points about the place, reflecting on what they have learned about their place, and sketching their place.

To help students identify possible features of a better future for their community, I invited four guest speakers from a variety of local organizations dedicated to green initiatives such as land conservation, healthy building design, renewable energy, and local, organic food production. Through learning about these various initiatives in our county, students were able to envision the better futures that could occur if these initiatives were more widely implemented. They also served as a springboard for students to envision other ecological changes. Last, students completed a visual/verbal journal assignment: "How has your chosen place been treated? How do you see the future of your place? Why? How would you like to see the future

of your place?” I encouraged students to sketch ideas for the future of their place in their visual/verbal journals. After students completed the journal entries, we concluded with volunteers sharing their visual/verbal journal responses with the class and a short discussion of our visions for our community. Through these activities, students were able to exercise their imaginations to envision alternate social and ecological realities for places in their community. A few students followed Rockman’s example and depicted devastating realities with the purpose of alerting us to the possible consequences of our actions, and others envisioned brighter futures with more ecologically-responsible measures being implemented in our local communities.



Figure 9. Daniel’s future of place drawing, 2012. Colored pencil.

In order for students to accurately represent their visions for their chosen places, they needed to be able to use linear perspective. First, I introduced students to linear perspective through a PowerPoint presentation. In addition to linear perspective, we also discussed other methods artists use to create the illusion of depth on a two-dimensional surface including using overlapping, varying the size and placement of objects on the picture plane, and adjusting values.

Then, I demonstrated how to draw cubes and rectangular prisms using the basics of one-point linear perspective. Next, I guided the class as they practiced drawing cubes and rectangular prisms using linear perspective. Last, students sketched the future of their chosen place using one-point linear perspective to represent all geometric forms, such as buildings, roads, sidewalks, parking lots, billboards, and signs.

In addition to linear perspective, value aided students in representing their visions of place. Once students had sketched the outline of the future of their place, they were ready to focus on adding value. I explained to students that creating the illusion of three-dimensions on a two-dimensional surface can enhance the believability of their artistic vision so that their work would be more readily accepted as a credible alternative for a place. Through enhancing their understanding of value and developing their shading skills, students could more effectively communicate their ideas to the viewers. To help students develop these skills, I setup a display of geometric forms under a light source. First, we discussed shadows, cast shadows, and highlights. Second, we practiced shading with a range of values by creating value scales. Third, I demonstrated how shadows and highlights can be used to shade geometric forms accurately. Fourth, I guided the class as they practiced shading the geometric forms with graphite pencils and then colored pencils. Then, students reflected in their visual/verbal journals on how value could enhance their drawings of place. Last, students used colored pencils to shade their drawings of the future of a place so that they looked three-dimensional.



Figure 10. Merideth's future of place drawing. 2012. Colored pencil.

This unit concluded with a class critique, a written response to accompany their artwork, a group exhibit, and a journal entry. First, students wrote a paragraph describing the place they represented in their drawing, the alternative future they see for the place, and why they chose to represent this future. During the critique, students shared their writings with the class and any additional information they chose to share. Classmates were invited to describe, analyze, interpret, or evaluate each other's works. The finished artworks were displayed in the student art gallery at the local mall along with students' writings designed to accompany their works. When I first announced that the works would be displayed before students started the project, students expressed some trepidation about the display. However, once they finished the drawings, students were more eager to see their works displayed in the community. The unit culminated as students reflected on their relationship with place in their visual/verbal journals.

This unit conforms to a critical place-based art pedagogy in that students were engaged with local social and ecological issues. They chose places that they had experienced directly, studied these places using local news sources, and envisioned different ecological realities for these places that form the heart of their community. By displaying their artworks and writings in the community, they were able to communicate their ideas beyond the classroom and the school.

They were taking action to affect their community. This step to affect change was their first as part of this curriculum. The subsequent unit on transformation further encouraged students to take ecological action.

Transformation

After studying place, we progressed to a culminating unit on transformation, a unit designed to empower students to actively and creatively pursue change in their communities. Following the tenets of the ecological imagination, students must first develop a relationship with the natural world and with place before they are asked to protect it. Since the previous units aimed to facilitate relationships with the natural world, place, and community and to develop awareness of ecological issues, students were now ready to work toward change. This transformative component was in keeping with Graham's (2007) call for transformative education within a critical pedagogy of place. The critical component of the critical place-based pedagogy is most evident in this unit as the focus shifted from building relationships to inspiring change. Through this unit, I wanted students to gain the following understandings: art can respond to social and ecological issues; art has the power to transform materials, space, attitudes, and communities; and artists can be inventive with materials so that almost any material can be used to create art. To engage with these understandings, students created eco-artworks from consumer waste.

Eco-artworks. This unit began with a field trip to our county's landfill. During this trip, we were able to tour segments of the facility and learn the day-to-day operations including their efforts to reduce and reuse waste. Our guide provided us with information about the county's recycling program and updated us with their recent efforts to channel the methane produced by the decomposing waste to produce electrical power. After the trip, we rode in the bus to a city

park and ate our bag lunches outdoors. The next day we recounted our experiences on the field trip, and students reflected in their visual/verbal journals on their experiences. Then I briefly introduced students to the works of a variety of eco-artists including Lynne Hull, Nils Udo, Jason deCaires Taylor, Chris Jordan, Nicole Dextras, Andy Goldsworthy, Moe Beitiks, and Gabriel DiShaw through a PowerPoint presentation. Next, we discussed eco-artists' different approaches to addressing ecological concerns. These included using natural materials and consumer waste, communicating eco-friendly messages, and improving ecological habitats through art. Soon, we began to make connections between the efforts we saw at the landfill and the efforts of many eco-artists. As a class we used a Venn Diagram to compare and contrast the efforts of both groups.

After our trip to the landfill and the corresponding discussion, we began a more in-depth examination of the eco-art of Steven Siegel, an artist who uses consumer waste to produce large, site-specific sculptures. His body of sited work includes a stacked series, large outdoor sculptures composed of stacked and bound newspapers that decompose over time, and a container series, large outdoor sculptures composed of consumer waste such as cans or e-waste into massive pods held together by ropes or nets. Siegel's stacked series draws our attention to geological processes as the paper withstands and responds to the effects of the elements and also draws our attention to biological processes as the decomposing forms create habitats for a range of microorganisms and creatures. While Siegel likened his container series to the containment found within cells and organisms, his use of waste materials functions more to awaken us to the large presence of waste our society produces. The containers often sit perched on hillsides and on grassy lawns and confront us with the massive stores of waste bulging through the nets. Through these two approaches, his works make us aware of the massive consumer waste that

exists, lead us to question the fate of such waste, and to consider how our lifestyle choices may contribute to its accumulation. As a class, we completed a Venn Diagram comparing and contrasting the composition and use of elements and principles of design in his stacked series and in his container series. Then we discussed Siegel's innovative use of materials and his possible purposes for using those materials. We went on to discuss how his art relates to transformation—transformation of materials, transformation of an outdoor space, transformation of art over time, and transformation of ecological attitudes. To conclude, students reflected on the transformative power of art in their visual/verbal journals.



Figure 11. Siegel, Steven. (1998). *Untitled* [wood and paper installation]. Retrieved from <http://www.stevensiegel.net/portfolio.html> Copyright 2010 by Steven Siegel. Reprinted with permission.

In the following lesson, I set up different stations around the room with different consumer waste items such as newspaper, cardboard, shredded paper, plastic bottles, bottle caps, aluminum cans, and jars. I encouraged students to experiment with creative ways to use these items in an artwork. Students moved in groups from station to station experimenting and

recording their ideas in their visual/verbal journals. Students were invited to share their responses and findings with the class.

Next, students formed groups of three to four students to create eco-artworks from recycled materials. I gave students the option to work alone if they preferred because I knew that a few had very strong ideas for their sculptures and might not be willing to make compromises in a group. However, everyone chose to work in a group. Once students formed groups, I encouraged them to all present their ideas to the group and then for the group to either adopt one group member's design or to infuse several members' ideas into a unified design. I emphasized that in selecting the design all group members must be satisfied with the decision. I conducted conferences with groups as they selected their eco-art designs. Once groups selected a final design, they considered how their design could be transformative as they reflected in their visual/verbal journals. Once groups selected designs, they submitted sketches to me for approval. A few designs required modifications based upon the limitations of the materials and safety concerns. Once the designs were approved, students began to assemble various consumer waste materials to create eco-artworks.

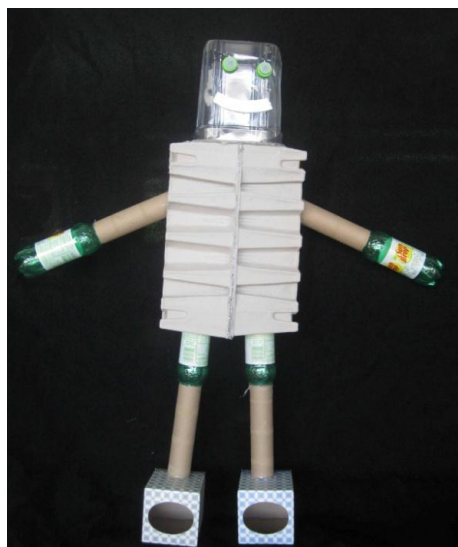


Figure 12. Adam, Austin, Daniel's group sculpture. 2012. Found objects.

Once students completed the construction of their eco-artworks, we critiqued them as a class. Each group presented their projects, and the class provided feedback. Then each group toured the school to determine an appropriate location to display their sculpture. They considered locations where the sculpture would be safe as well as visible to their classmates. Many chose the library, one chose the front office, and one chose the commons. By displaying the sculptures around the school, they were making a statement about the presence of waste and ways it can be repurposed. To conclude the unit, students reflected in their visual/verbal journals about their own response to their artworks and how they expected students and faculty to respond. Through this project, students in the class were able to learn about local ecological issues, to be inventive with artistic materials, to consider how art has the power to transform, to creatively respond to an ecological issue, and to impact other students and teachers at their school. Parent, teacher, and student comments indicated that students in the class had informally explained the project to them. Many students outside of the class responded with enthusiasm for the works and asked if they would be able to create a similar artwork if they signed up for the class or participated in the art club.

Conclusion

This critical place-based art curriculum was designed to release students' ecological imaginations. It facilitates a dialogic, empathetic relationship with place by supporting students' direct experiences with nature, by allowing for their exploration and practice of local cultural art forms, and by inciting their critical examination of environmental practices through art. Through informed and reflective experiences with artworks representing the natural world, openings were made for students to empathize with others and with the natural world. These works were capable of spurring dialogue regarding our relationship with the earth. As students reflected on

the role of special places in their lives, they had the opportunity to expand their appreciation for those places and strengthen their relationships with place. As they envisioned better futures for community centers and learned of ecological initiatives that had already begun in their community, they had the opportunity to release their imaginations to conceive of better ecological possibilities and to awaken their consciousness to other ways of being. As students participated in artmaking experiences, they were positioned to channel their imaginations in order to work for ecological change. In the next chapter, I will explore how students were able to demonstrate empathy through their participation in this critical place-based art education program.

CHAPTER 5

OVERVIEW OF THE CASE

Chapter 4 provided an outline of the curriculum and a rationale for its major components. Now, I will discuss how students responded to this curriculum and how they interacted within the class. I will begin by examining how students related to each other and then how they related with me, the teacher. Next, I will progress through the major aspects of the curriculum and highlight notable student responses and interactions. Last, I will provide an overview of students' general impressions of the course. This description was obtained solely from my observations with students. Through discussing these occurrences, I aim to provide a better understanding of the case and to provide thick, rich description, which may contribute to the transferability of the case. In addition, this description will provide a context for further analyses of student experiences of empathy with the environment in Chapters 6-9.

Relationships

Relating to each other. This class formed into friendship groups early in the semester. These groups began to form on the first day of class when students entered the room and found seats. We did not have assigned seats, but the seating arrangements remained relatively stable throughout the semester. The largest friendship group was a group of eight girls. The group was fairly homogenous in that they were all high-achieving, White girls from middle class families. These students appeared to know each other well and to be close friends. Two girls even playfully claimed to be cousins. Many had been friends in elementary school and had other classes together. Several of these girls talked about how they bonded during an overnight field trip last year. This group of girls chose to sit at two and, sometimes, three tables on the left side of the room. Almost every day they would slightly rearrange their seats but always within the

same group of tables. This group included Emily, Anna, Morgan, Nora, Samantha, Emma, Kristen, and Merideth.

For over half the semester, Ashley also sat with this group, and Lindsay and Jada occasionally interacted with the group. However, Lindsay and Jada usually sat at their own table in the middle of the room. These two students often showed a connection with a group of girls on the right side of the room including Brandi, Kalen, Paige, and April. Both this group of four girls as well as Lindsay and Jada were more diverse in their achievement levels, socioeconomic statuses, and ethnicities. Since Kalen, Paige, and Brandi were absent frequently, the seating arrangements occasionally changed. For instance, Jada or Lindsay occasionally sat in the absent person's seat or the rest of the group occasionally moved to sit with Jada or Lindsay. Of all the students, Lindsay showed the strongest propensity to transition between different friendship groups.

While the different groups of girls interacted somewhat, the boys stayed more to themselves. Anthony and Malik, two African-American boys, formed one group, and they sat at their own table in the center of the room. On the right side of the room, Daniel, Adam, and Austin, three White boys, formed another group. These two groups of boys rarely interacted. These two groups varied in terms of race as well as academic achievement levels. Anthony and Malik had below average achievement on the English/Language Arts and Math standardized tests; whereas, Daniel, Adam, and Austin had average to above average achievement on these tests. Overall, friendship groups remained fairly distinct, and the main interactions between groups occurred during critiques.

Within each group, students were very social, particularly as the class progressed. Before the bell rang each day, some students would walk around socializing. As the semester

progressed, I would have to wait longer for students to stop their conversations so that we could begin the lesson. The amount of socializing became more apparent once students concluded their eco-art projects. The group project encouraged students to work together, and students became very comfortable with interacting with their group. Once the projects were completed, the students were not accustomed to remaining quiet and listening. However, this talking was not a major behavioral issue.

Despite the formation of fairly distinct friendship groups, students treated their classmates with respect and provided one another with artistic support. During critiques, students provided each other with positive and constructive feedback, both for students within their friendship group as well as for those outside of it. In constructing their eco-artworks, students shared materials that they brought from home with other groups. While these situations exemplified the students' positive, respectful actions, the respect was most evident in the types of interactions that did not occur. I will detail one scenario where the lack of hostile interactions was unusual for a middle school art classroom. I was absent one day, and the substitute allowed students to listen to music. When I returned, a few of the students requested to listen to music. I reluctantly agreed and played one of the student's compact discs. I was hesitant to play music because I was so accustomed to the disagreements that surround playing music in a classroom as students often criticize each other's musical selection. However, to my surprise, everyone in the class listened to the music without complaining or criticizing.

Throughout the semester, I was attentive in my observations of students' interactions with each other. Overall, I found that students displayed respectful behaviors toward each other and the lack of disharmony was uncharacteristic of many middle school classes. For instance, when Samantha saw Daniel struggling to reach his planter from the top shelf, she helped him

reach it without being asked. However, I did find a few exceptions. For instance, Anthony said to Paige, “You have man-hands!”² When I questioned Anthony about his comment, he said that Paige had slapped a boy in his last class, and he was repeating what the boy said in response to her slap. In another instance, Merideth spoke out of turn during one of the critiques, and Austin asserted, “I didn’t call on you.” He expressed his frustration with her not following the protocol, but he was not overly rude. In other instances, students used humor inappropriately. For example, when I was taking attendance, I asked the class where Kristen was, and Emily responded, “She died.” On another day, I overheard Paige respond to one of her friends, “I’ll kill you,” but she did not appear serious or angry. This comment provided an opportunity to discuss the appropriate way to express frustration. Additionally, Anthony and Malik occasionally bantered back and forth as they were working on one or two of the projects about whose drawing was better. These few instances of disrespectful behaviors are minimal, considering the middle school population, and that these were the only ones I identified during the 18-week semester. Overall, student behavior was exceptional and did not warrant disciplinary consequences such as contacting parents or assigning detention. The overall atmosphere was one of mutual respect amongst students and between the students and me.

Relating to the teacher. As the teacher, I aimed to be friendly, caring, equitable, firm, and supportive. I made a conscious effort to establish a respectful, kind, and caring environment. For example, one day when working with clay, Kristen’s hands broke out in a rash. I let her

² The student quotes in this dissertation have not been modified to reflect correct grammar and word choices. To contribute to the readability of the text, *sic* has not been included in these instances. In addition, names of particular places and people have been removed and replaced with general signifiers.

wash her hands and take a break from working with clay for the rest of the period. The next day, I asked her if her hands had improved. Then I provided her with a new bag of clay because I assumed the old clay must have had some mold for it to trigger an allergic reaction. However, I also gave her the option to work with another medium if she was concerned about having another reaction. I also tried to be understanding of students. For instance, when students lost their permission forms for the field trip, I provided them with additional forms without chiding them.

To develop a better relationship with students, I seized opportunities to engage with students when I was not involved in whole class instruction. Often, I provided students with feedback on their artworks and their progress on assignments, but sometimes I used the time as a chance to get to know students. For instance, if a student had been absent the day before, I would tell them that we missed them yesterday and would ask if they are feeling better now. Students responded positively. Once Kristen was talking about changing her class schedule, and I said, “Well, I hope you aren’t leaving this class. We would miss you.” She responded, “Oh, no. It’s another class. I wouldn’t change out of this class. This is my favorite class.”

My interactions with students and their responses suggested a friendly relationship. Throughout the semester, I was frequently greeted in the hallways between classes, afterschool, and as students entered the class with, “Hello, Mrs. Bertling!” In addition, Emily would frequently joke that she, Morgan, and Anna were going to show up at my house for a sleepover. Students expressed how they valued our relationship toward the end of the semester as well. One day, I announced that I would be attending a conference and would be absent the next day. Anthony immediately responded, “You’re killing me, Mrs. Bertling!” Toward the end of one focus group, Anna asked if I would be teaching 8th grade next year, and I replied that I would. She responded enthusiastically, “Yes!” Then, on the last day, Emily hugged me, and Samantha

said she would miss me. My relationship with this class was one of the more positive ones that I have experienced as a teacher at this school.

As a teacher researcher, I considered my role as teacher and possible influence on students thoughtfully. I elected to refrain from making overarching statements about the environment and instead elected to provide students with information, opportunities for alternative experiences, and the chance to learn from others' experiences. Because of this approach, I was assured that students were not parroting back my own statements. However, I acknowledge that my views were probably apparent by my choices of curriculum and the questions I asked students. Overall, I endeavored to facilitate dialogue rather than freely volunteering my opinions or preaching to students.

Activities

Drawing in the courtyard. This lesson occurred on a cold morning in January. While I would have preferred warmer weather, I was not willing to postpone the lesson to the next week. We went to the school's central courtyard with our pencils and visual/verbal journals. Because the temperature was slightly below the freezing mark, I gave students the option to sit inside at tables by the large windows looking out on the courtyard. Kalen, Paige, Brandi, April, and Jada accepted this offer and stayed inside to draw. The rest of the class went out into the courtyard. First, students wandered around the courtyard and explored. Students seemed especially interested in the small waterfall and pond area. Then I invited students to draw an area. Some students found places to sit and others stood as they began to draw the waterfall, leafless trees, rocks, shrubbery, and tall grasses. Since I was concerned about the cold temperature, I periodically reminded students that they could draw inside if they were too cold. As time progressed, students slowly began to filter into the commons. After we spent 25 minutes outside,

I gathered the class to return to the classroom although about a third of the class was still outside. One asked, “Can we please stay?” and the rest seemed reluctant to leave. Although a few students seemed to really enjoy drawing outside in the cold, I wanted to consider the class as a whole. Therefore, we returned to the classroom to draw indoor plants.

Walking on nature trails. To find natural objects to depict in our drawings, we went outside to the edge of campus. We found segments of old running trails that were lined by trees and natural growth. While on the trail, most students walked down the path, observed their surroundings, and collected natural objects. A few students ran ahead on the trail, jumped over logs, and laughed loudly. I soon assembled the group and talked to them about how they should maximize their time to observe their natural surroundings and to collect interesting objects to draw. After my instructions, we walked together as a class, and I had the opportunity to point out interesting objects they might consider. When all students had at least one object, we returned to the building and stored our objects on shelves in the classroom.

After students drew their items, we returned to the trails to deposit their natural objects back in the woods. Students were eager to go outside and return the objects. However, as we approached the trails, a group of students took their objects and began to hurl them at a red fire anthill. Soon half the class had pelted the anthill and ants were spilling out onto the lawn. I instructed students to stop throwing objects at the ants. I was concerned about students being bitten, about the objects not returning to the woods because they were deposited in a swarming anthill, and about their aggression toward the ants. Students were so engrossed in disturbing the anthill that they continued to pelt it after I asked them to stop. After students halted, I expressed my disapproval of their actions. Then we placed the remaining objects in the woods and then returned to the classroom.

Drawing nature. Toward the end of the nature walk, students brought in a range of items including pine cones, sections of pine needles, small branches, rocks, dandelions, segments of small vines, and leaves. As students sketched their items in their visual/verbal journals, I encouraged them to observe their objects closely. Five students asked to go outside to the grassy area beside our patio to find an alternate natural object to draw for various reasons. They returned with dandelions, clover, and leaves. Anthony struggled with the idea of drawing natural objects. Before the class, he was most comfortable with drawing cars and cartoonish people. To minimize his frustration, I told him he could include a person as part of the drawing, but I encouraged him to draw the person from observation since drawing from observation was an important focus of the lesson. I recommended that he could include Malik in his drawing since he sat beside him. However, Anthony chose to draw a cartoonish person with a leaf in his hand instead.

Like Anthony, Adam also included a human in his drawing. He drew a large, open hand holding a small rock. Most students elected to draw one or two natural objects large so that they filled the composition, and a few students drew the same objects multiple times from different angles. In these drawings, most students elected to use an abstract background, such as a solid color, pattern, or color gradation, but a few used a realistic context. In depicting the objects, many students were attentive to texture, but several struggled to depict the proportions of the objects accurately. Students asked if they were required to use realistic colors, and I responded that they were free to use unrealistic colors. A few students chose this option.

Growing plants. To grow plants to place in our ceramic planters, we planted radish seeds in small cups and set them beside the classroom's large windows. Students seemed eager to plant their seeds. Many students seemed unsure about the amount of water to use and asked

me to check their soil. Some students overwatered the seeds so that the soil was submerged by an inch of water. A few students claimed that someone else had watered their plant without their permission and had given it too much water. The next day, students came to class asking if they could water their plant. Malik, in particular, came into class almost every morning asking to check on his plant. After a week, over half of the radish plants had begun to sprout. Initially, students were excited about the appearance of their plants. Some plants did not sprout, which we assumed was due to overwatering. I gave those students the opportunity to plant more seeds. Soon almost everyone had a sprout. When Emma's sprouted, she exclaimed, "It's growing! I didn't kill it this time!" as she emerged from the plant area with a big smile.

As the plants began to grow, they soon began to lean toward the edge of their containers. On two separate occasions, students informed me that they were concerned that the plants needed larger containers. I noticed that the plants were somewhat limp and their growth had appeared to slow. We transplanted them to larger containers soon after. However, the stalks continued to become thin and weak. Most shoots grew approximately four inches and then halted their growth. As students discovered that their plants were not growing strong, some appeared disheartened. I noticed that as time passed students were not as eager to care for their plants. I attributed this reduced interest to the passage of time, students' concern that they had been overwatering them, as well as to their disappointment that the plants were not thriving.

Soon, students had finished creating their ceramic planters. They had been glaze fired and were ready to hold plants. However, since the plants were languishing, I gave students the option to plant basil seeds instead of transplanting their radish plants. Most students chose to plant the basil seeds and were excited about the prospect of having basil, although a few students were not familiar with basil. Students took their ceramic planters home before the seeds had a

chance to sprout. Toward the end of the semester, a few students mentioned that their basil plant was growing in their planter at home.

Creating planters. Students created planters designed to hold their growing plant. Students considered the function of the planter in their design. For instance, they created vessels with openings large enough for the plant to emerge, they created the vessel wide enough so that the plant would have enough soil, and some students included a hole in the base so that water could drain. Students' planters were a variety of sizes and forms with a variety of surface treatments. The surfaces of the vessels were decorated with patterns of shapes and lines, natural forms, symbols, and text. While Anthony chose a sports theme and Ashley used a religious theme, the majority of students relied more on abstract shapes and lines or natural themes.

Painting a special place. First, students identified places they often go to be alone. I provided an example of how I walk to a river about a mile from my house and sit on the banks. I hoped this example might encourage students to consider an outdoor place that is special to them. However, when a student asked, "Is it okay if your place is inside?" I responded that they could choose any place they go to be alone—indoor or outdoor. The places students identified included lakes, creeks, parks, backyards, bedrooms, a dining room, a pond, a large rock, a horse pasture, and an old family cemetery. The majority of students chose outdoor locations. A few students included themselves in the paintings but the majority of students did not include a human presence. After we examined several different painting styles and techniques and experimented with them, many students chose pointillism to depict their special place. Others liked Vincent van Gogh's style and utilized short, expressive streaks of paint in their own paintings. Overall, the final paintings tended to represent natural settings and were represented

with somewhat naturalistic colors. In the critique, students described the places as places to relax, calm down, or have fun.

Envisioning the future of place. Students connected with Alexis Rockman's art, when we discussed it as a class and when they later explored his website. Approximately a week after I introduced Rockman's art to the class, we were in the computer lab working on a separate assignment. Daniel asked if he could go to Alexis Rockman's website if he finished his assignment early, and I approved. When students finished, many of them explored Rockman's website including Lindsay, April, Daniel, Austin, and Adam. April expressed confusion with Rockman's painting, *The Farm* (2000), and asked me if I could offer any insight. I discussed the concepts of evolution and the genetic modification of crops and livestock to provide some clarity to the painting of strange, new crops and breeds of animals. After I briefly explained, she responded, "I love his art!" A few minutes later Lindsay turned to me and said, "This is the first artist I have seen that I really felt connected with." A few others echoed their attraction to his art.

Later in the classroom when we were creating thumbnail sketches of an alternative of place, Daniel, Austin, and Adam expressed how they liked Rockman's apocalyptic approach. They requested to follow in his tradition by drawing apocalyptic depictions of our city instead of drawing a better future of place like the rest of the class. Therefore, Adam and Daniel drew our city flooded with the tops of water towers and buildings emerging from the water, and Austin drew viruses floating through the air above the city. The rest of the students focused on better futures for specific areas in the community. Students imagined unused parking lots replaced by community gardens and parks; companies and community centers using renewable energy sources such as solar and wind power; restaurants and grocery stores serving locally-grown,

organic produce; sidewalks, bike paths, nature trails, and bicycle stands reducing our reliance on automobiles; rooftop gardens on structures within the city; energy efficient light bulbs in street lights; local stores selling products made from recycled materials; trees planted to break up the monotony of asphalt parking lots; and recycling bins easily accessible across the city.

Visiting the landfill. This class and one of my 6th grade classes took a fieldtrip on a bus to visit our county landfill. We were greeted by one of the landfill administrators. He acted as a tour guide while we were at the landfill. He rode on our bus and directed us to certain stops throughout the property. We often exited the bus to view the different sites as he provided us with information about the landfill and its function. When we arrived, we exited the bus to stand on a grassy hill. Our guide explained how we were standing on trash covered by 5-8 feet of dirt. One 6th grade student asked if trees could ever grow here, and he explained how trees would puncture the seal around the waste and that they would die once they reached a certain size because their roots would not have enough soil. Later, he pointed out the pipes emerging from the ground and explained that methane is channeled through the pipes, converted to electrical energy, and used to power several hundred homes. We viewed one hill where waste was exposed. Vultures flew over it as a large machine worked to flatten the new waste—approximately a week's worth of trash. In another area, we saw how waste was sorted so that elements of it could be recycled. We saw mounds of metal, a row of refrigerators and propane tanks, and yard waste converted into mulch. Students listened quietly and intently and occasionally asked relevant questions. The visit to the landfill lasted an hour and a half. After the visit to the landfill, we ate lunch at a park within the city. When we returned to the school, students were reluctant to leave the bus, but many of them individually thanked the bus driver.

Creating eco-artworks. Students formed groups of two to three students to work with in creating eco-artworks. Most students chose to work with the students who sat at their table. Students experimented with using a variety of recycled materials, and most chose to work with multiple types of materials. All the groups chose to make a representational sculpture with recycled materials. They created a cow made primarily from milk jugs and cartons; a robot made from Sun Drop bottles, a large plastic container, paper towel rolls, tissue boxes, and pressed paper packing; a mouse made from a bottle with a range of small items including bottle caps and buttons; a cardboard house with a collaged exterior; a chandelier of water bottles and old lace; a flower from colorful newspaper advertisements, a plate, shredded paper, and paper towel rolls; and a boom box from a cardboard box, aluminum cans, shredded paper, old plates, and cloth. When students came in the room at the beginning of each class, they immediately found their sculptures and started working, particularly as they neared completion of the project. As they worked, a couple of the groups expressed concern about storing their sculpture because they were worried that students in one of the other classes might play with it. Several groups elected to store their sculptures in the loft so that they would be safe, and the other groups stored them on the highest shelves in the room. Once the sculptures were completed, students were anxious to display them around the school. Students asked many questions about their options for displaying them and frequently asked when they could display them. The majority of students chose to display the sculptures in the library, but the cow was displayed in the commons and the flower in the front office.

Reactions to the Course

Students demonstrated their appreciation for the class from the beginning of the course. In the second week, Kristen announced that this was her favorite class. A few days later, several

students expressed reluctance to clean up. They expressed that they enjoyed the class and that it was their favorite class. Parents also echoed these comments. I encountered Nora's mother in the hall and Emma's mother several times, and both told me how much their daughters loved the class. Throughout the course, students' actions indicated their interest—as they brought home their sketchbooks over the weekend, as they communicated their reluctance to clean up at the end of period, and expressed their desire to continue the more experiential activities. Students described the projects and activities in positive terms. In the focus groups, students used words like “fun,” “interesting,” “cool,” “nice,” and “neat” to describe the class activities. During class, they often volunteered that they liked certain projects, and, overall, they described enjoying the projects.

However, students did encounter a few frustrations throughout the course. Students expressed some disappointment and frustration with the death of the radish plants. For example, Daniel described it as a “love/hate relationship”: “It could be a joy when they would grow, but it could be a pain in the butt when they didn't.” Toward the beginning, Anthony expressed frustration with drawing plants. He was more comfortable with drawing cars and cartoon people. However, the overall response to the class and projects was positive. Anna summed up the experience: “I would say that it's been fun this year.”

CHAPTER 6

RESEARCH QUESTION 1

Research Question 1 aimed to understand how students exhibited empathy with the environment throughout their participation in the critical place-based art education curriculum. A variety of data collection methods were used to understand how students exhibited empathy including drawing exercises and interviews, focus groups, observations, and visual/verbal journal reviews. These different methods provided different sorts of data on how the class might have impacted students' general experiences of empathy with the environment and on how students exhibited empathy with the environment throughout the curriculum. The drawing exercises and interviews illuminated how students formed connections with the environment outside of the class and provided data to compare pre and post; whereas, the focus groups, observations, and visual/verbal journal reviews provided insight into how students experienced empathy with the environment as they participated in the different components of the course. An examination of both of these types of data provides a more comprehensive understanding of students' empathy with the environment.

General Student Experiences of Empathy

Drawing exercises were administered pre and post. The drawing prompt asked students to draw a time they were connected to the natural world and then asked them to describe the experience in writing on the back of the prompt. In addition, interviews of eight students supplemented the drawing exercises in order to better understand the experiences students depicted in their drawings. I selected interview participants who represented cases of interest either in their strong levels of empathy, their lack of empathy, or the ambiguity of their response.

The written responses accompanying the drawings and the interview responses provided the primary data rather than the drawings themselves. Because the drawings asked students to draw any experience and did not limit the experiences to those that occurred during the class, the drawing exercises provided information about how students experience empathy in general rather than specifically during the class. In addition, the drawing exercises were able to offer a comparison between students' experiences of empathy with the environment before and after the program since these exercises were administered pre and post. Through this comparison, I gained insight into how the curriculum might have impacted students' empathy with environment. I will first illustrate the drawing responses in general and outline a few anomalies, will compare the pre and post responses, and then will discuss the general themes of the experiences.

Drawing responses. In the drawings, students described experiences that occurred in a range of locations. These locations included yards, neighborhoods, nature trails in the community, the beach, the mountains, summer camps, vacation destinations, and a field trip destination. Many of the experiences students described occurred before the school year began (16), such as during summer vacation, although a few students mentioned experiences that occurred in childhood (3). In addition, the exact location and time period of many experiences were unclear (15). Interviews provided additional information but were limited to select students. Excepting Emma who described the same field trip in both drawings, the rest of the students depicted a different experience in their post drawing than they had in their pre drawing.

In the pre and post written responses, many students indicated the presence of others in their experience (18), although, only a few students included more than one person in their drawings (5). The experiences that included others were experiences of fishing, sitting and

singing at campfires, planting flowers with relatives, and hiking with friends. Some students' responses suggested that they were bonding experiences. For example, Anna described the experience of planting flowers with her mom as "fun." She clarified that spending time with her mom was what made the experience fun. Sydney described planting roses with her grandmother. She said, "I guess it was me and my grandma having some time to bond when I was younger." While students were able to show signs of empathy in these experiences, the responses that exhibited the most signs of empathy with the environment described experiences that occurred while the student was alone. Some responses did not provide enough information to determine whether the experiences occurred alone or in a group.

Several students' responses were unlike the others and should be examined. While the drawing exercises were intended to solicit a description of one time students connected with the natural world, a few students described a common activity rather than a single experience. In addition, some responses were unclear as to whether they were habitual activities or a single experience because of the vague and generalized nature of the responses. For example, in her pre-response, Brandi simply wrote, "Me imagining animal in the clouds." Without providing any context or further description, this terse response suggests the activity could possibly be a fictional account or an activity that occurred more than once. Others also wrote of generalized activities rather than one particular experience. Morgan wrote in her post response, "A time when I feel connected to the natural world is when I play soccer. . . ." Emily also described her daily activity of running on a local nature trail.

One student did not describe a particular experience at all. Rather, Malik wrote more of a statement on the benefits of nature than a narrative of a particular experience with nature. In his pre response, he wrote:

What I like about nature is the grass trees and roads. Because if the grass is long, you can hide in it when someone is looking for you. The reason I like the trees some have fruit on them. I like roads because I like hearing cars or trucks.

Similarly, in his post response he wrote, “The tree give you shade when it is hot outside. We used it for paper and other things like house and other thing etc.” Rather than describing a particular experience of emotionally connecting with the environment, he described how he has benefitted from nature or how nature has benefitted humans in general. Perhaps he did not understand the prompt, did not have a more personal connection to describe, or was not interested in describing anything more personal. Overall, these responses suggest that he sees nature as in the service of humans and perhaps without value in and of itself. However, when discussing his prompt in the interview, he claimed that he regularly encounters the trees that he described and often sits in their shade. While he did not provide evidence that he connects with them beyond appreciating the shade they provide, his description of picking pecans with his mom, which he described as a “fun” activity, suggests that he may had more of a connection than he exhibited in writing. When the written response is coupled with interview data and observations of his behavior in class of caring for plants, we can see that his interest in nature goes beyond how it can be exploited. His response will be examined further in Chapter 9.

Another student wrote both pre and post responses in the third person. Anthony’s drawings show a person other than himself. In his pre drawing, he drew a male teenager leaning against a car on the road as a dog stands nearby in the grass. A tree, two birds, and a sun are in the distance. In the pre response, he wrote, “Seeing birds flying people with nice cars the person I drew is taking his dog outside to use the restroom winds blowing through the trees.” In his the accompanying drawing, he drew a car in the center of the paper flanked by a tree and a palm

tree. Flowers and grass are in the foreground. In his post response he wrote, “It’s about Hawaii the palm trees they have and the beautiful flowers all color in them. I drew a Cadillac to show what kind of cars they had back then.” The drawings clearly represent a fictional character and a fictional experience since Anthony is not yet able to drive a car and has never been to Hawaii. We can see the detached way that he wrote about the experience as well as the detached way that he drew it with a cartoonish style in his pre drawing.

In both drawings, the car forms the center of interest. Anthony was comfortable drawing cars and cartoon characters and often found ways to include these in his drawings. During the pre drawing, he expressed his lack of understanding of the prompt and corresponding frustration. After I explained the prompt again, he eventually began to draw. His response perhaps shows his lack of understanding of the prompt as well as his fascination with cars and proclivity to draw them. In addition, we could surmise that he has not had a close connection with nature, at least not one that he was able to articulate clearly either visually or in writing. However, his inclusion of “the wind blowing through the trees” and “the beautiful flowers all color in them” suggests some appreciation for the properties of nature.

In the post responses, three students included discussion of the need to recycle more and to reduce pollution into their experience. These pro-environmental statements might indicate their concern for the environment or that they did not fully understand the prompt. After spending time in class discussing environmental issues the day before, students might have been echoing thoughts from the day before rather than thoughtfully responding to the prompt.

In addition, Emma’s response is somewhat of an anomaly. She described a field trip she took last year to a remote island where students would take nature walks along the beach and in the woods. She described how learning about the plants and animals and how to avoid harming

them really helped her form a connection with the environment. I will examine Emma's, Ashley's, Malik's, and Samantha's responses in more detail in Chapter 9.

Comparison of pre and post responses. The amount of elaboration in the written responses was a major difference between the pre and post responses. In the post written responses, students elaborated much more on their experiences. In particular, students included more discussion of their sensory experience and the emotional tone of the experience, including how they felt at the time and how the experience impacted their mood. In addition, the experiences depicted in the pre drawings included more of a range of experiences and responses.

Changes in themes. The themes varied slightly between the pre and post responses. One theme that emerged primarily in the pre drawing written description was forming associations. A few students saw something in the natural world and associated it with something from human society. This association formed an important part of their experience. For instance, one student described seeing an owl that she associated with her great-grandmother who passed away. Another described standing in a rose garden and how the roses reminded her of love and passion. Because the primary link in these students' connections with nature was something outside of nature, these connections were not direct. Nature appears to be subsidiary in the experience to the object of its association. In contrast, one theme that was evident only in the post written responses was becoming one with nature. This theme's presence in the post response is significant given that these responses showed a high level of empathy with the environment. This theme will be discussed along with the other themes in the next section.

Changes in individual responses. A comparison of individual student responses between the pre and post responses shows that most students' responses became more empathetic. Through this comparison, 12 students' empathy appeared to increase. These students included

Samantha, Jada, Nora, Kristen, Daniel, Emma, Lindsay, April, Kalen, Anna, and Anthony.

April's two responses provide an example of responses that increased in empathy. In her pre response, she wrote, "I'm in an airplane looking out of the window at the clouds." This brief and limited response does not provide enough information about the experience to determine the connection, although we can assume she was appreciating the view from the window. Her post response was lengthier and provided more evidence of a connection with nature. She wrote, "When I was out on the boat I felt a little apprehensive about the water but then I felt like the water had taken me in and I had become one with the sea." By describing herself as at "one with the sea," she indicates a strong connection with nature and thus a strong sense of empathy with the environment.

While many students showed an increase in empathy, some showed no change or a decrease. Three students' responses indicated a stable level of empathy, including those of Malik, Brandi, and Merideth. For instance, in both responses, Malik wrote about the benefits of nature rather than describing one particular experience. In addition, four students' empathy appeared to decrease including Austin, Ashley, Morgan, and Adam. For instance, Morgan wrote in her pre response, "One time I went to the [nature] trail and I explored the wildlife and the aquatic animals in the creek." She described a direct encounter with nature, although she did not express how the experience impacted her. In her post response, she wrote, "A time when I feel connected to the natural world is when I'm playing soccer because I feel like I'm in the mountains playing soccer and running around having fun! Almost like I'm camping." This response is confusing in that it could be referring solely to the experience of playing soccer, which typically includes little interaction with nature, or could be referring to the experience of

playing soccer while camping, which could include interactions with nature. However, overall I considered this response to indicate a decrease in empathy from her previous response.

Themes. The themes that emerged from the data included engaging in leisure activities, sensing nature, appreciating the beauty of nature, changing emotions, and becoming one with nature. Except for the final theme, becoming one with nature, which emerged only in the post responses, these themes emerged in the written portion of both the pre and post drawing exercises and the interviews, although some themes were more present in one administration of the drawing exercises than the other. In the following section, I will describe each theme that emerged and outline how these themes varied between the pre and post responses.

Engaging in leisure activities. In both pre and post drawing responses, many students described engaging in leisure activities. These activities often included traveling or moving through a natural area. Sometimes these activities involved physical exertion on the part of the participants, such as hiking, walking, running, and swimming; and, in others, participants described being transported by vehicles, including cars, boats, inner tubes, and airplanes. Overall, this theme remained stable in both the pre and post responses. In the pre responses, these activities included hiking through the mountains, tubing down a river, walking on the beach, flying on an airplane, walking around a pond, climbing a tree, exploring a creek, walking a dog, and riding a bicycle. In the post responses, these activities included swimming in a pool, in a lake, and in the ocean; running on a wooded trail; canoeing on a lake; walking along the beach; walking through the woods; riding on a boat; playing soccer; walking dogs; flying on an airplane; and picking up trash.

Students' inclusion of leisure activities invites several interpretations. For example, perhaps participants described their engagement in these activities simply to describe their own

actions during the experience as a way of telling their story. In addition, these activities of physically traveling through nature might have been mentioned since moving through nature is a way of encountering it. However, a few students' responses suggested a direct connection between engaging in leisure activities in the environment and connecting with it. Emily's post response especially made a direct link between running and connecting with nature. She wrote:

One time that I felt really close to the earth was when I ran on the [nature] trail. I run at least 4 miles everyday there. I always love running there with the cross country or distance track team. Whether it is hot, humid, or cool and breezy, [the nature trail's] flat, ground is always a great place, to run or walk. One time when I had had a really stressful day, I decided to go on a run. The moment I stepped on the trail, everything went away. All I concentrated on was running, and that made me feel close to earth.

Through this response, we can see that Emily felt connected to nature while exerting herself physically. Merideth's comment in one of the focus groups supports Emily's written response. She said, "And we were snorkeling out in the ocean. . . . I felt connected with the environment because it was just fun being in the water rather than just standing on the side of the ocean in the sand."

While many students described engaging in leisure activities, they differed in the level of physical exertion. For instance, some students mentioned stationary activities such as sitting at campfires or sitting and drawing flowers. However, most of the responses mentioned some sort of physical activity or interaction whether it was exploring a creek, riding a bicycle, climbing a tree, or fishing. This common inclusion of physical activities suggests that movement and interaction may facilitate a connection with nature.

Regarding the inclusion of traveling through nature in vehicles, such as boats and airplanes, many of these experiences were new for students and might have made a strong impression on them. These modes of transportation also allowed students to experience nature in ways they had not previously experienced it. For example, April depicted looking out the window while on her first time on an airplane in her pre drawing and then illustrated seeing dolphins while on her ride on a boat in her post drawing. In an interview, she described how the new experience made a strong impression on her. She said, “. . . I had always wanted to fly, but I didn’t think that was possible. And when the plane took off it was like, ‘Wow! I can’t believe I’m actually leaving the earth.’” She went on to describe how the experience involved a connection to nature as she saw the views from the window and compared the clouds to an ocean. This response suggests the impact of a new experience as well as its capability to facilitate a connection with nature.

Sensing nature. In their descriptions of their experiences, students included how they experienced nature with their senses and often described these sensations in pleasant terms. They described seeing beautiful and interesting views of the land, watching animals interact, feeling cool breezes, smelling pleasant aromas, and listening to the sounds of the ocean and animals. Often these sensations appeared to contribute to students’ comfort and ease. For example, Anna wrote, “I could hear birds chirping and the wind was blowing. I felt very free and happy” Students’ descriptions of how they experienced nature with their senses occurred in both pre and post responses although it was more common and more extensive in their post responses.

In students’ pre drawing responses, some students described nature and how they experienced it with their senses. For instance, Austin wrote, “. . . I saw all of the land. I smelled

the trees.” Anna described how her sensory experiences formed the basis for her connection. She wrote, “I felt close to nature because the wind was blowing and the campfire was bright red.” Several students described seeing nature from a different vantage point, in particular, from high up. One student described climbing a tree, another looking out the window of an airplane, and another hiking. Samantha wrote, “We went on a beautiful hike high above the tree line and mountains. The views were magnificent and Kodiac moments.” However, in general these descriptions were short and limited.

Students’ post drawing written responses included more description of nature and how they experienced it with their senses. More students included description, and students elaborated more as well. Students described the feel of soil, sand, humidity, a cool breeze, and warm water; the sounds of birds chirping, the wind blowing, and the ocean rolling; and the sight of clear water, the blue ocean, sunlight peaking through leaves, brightly colored fish, pointy anemones, colorful flowers, the sun setting over the water, and hills in the distance.

Lindsay’s pre and post responses exemplify the overall difference between the pre and post responses. Below is her pre response:

One day I was walking around our pond and decided to climb a tree. I sat there listening to music and relaxing. I closed my eyes and a few moments later, my nose had a little itch and I opened my eyes only to see red and orange. Then I realized it was a butterfly.

In this response, she included some description of her sensory experience. She described listening to music, her nose itching, and seeing the red and orange of the butterfly. However, her post response shows her sensory engagement during an experience more fully:

My experience happened when we were at our beach house. I had walked out onto the beach, nobody was there, and it was very peaceful and quiet. So I just sat in the sand,

listening to the ocean roll in and out and feeling the warm, salty breeze blow on my burnt skin. The sounds of cars and busy restaurants were blurred out by the oceans howl. It was a beautiful sight and memory. I remember feeling the grainy sand fall through my fingers and blown away by the breeze. The colors of the sunset flashed orange and yellow, reflecting off the deep blue ocean.

She is much more effusive in this response. She communicates the rolling sound of the ocean, the wind's howl, the muffled sounds of civilization, the warm breeze on her skin, the sand on her fingers, and the colors of the sunset reflecting on the water.

Since the pre and post responses were almost four months apart, such description and elaboration might have resulted from students' growth as writers during this period. In addition, students might have become more familiarized with writing in an art class as a result of writing in their visual/verbal journals and on their self-assessment forms throughout the course.

However, students' inclusion of their sensory experiences and elaboration on those experiences also suggests that students were connecting with nature differently. For those who reflected on experiences that occurred during the semester, perhaps they were able to engage more fully with nature. For those who reflected on experiences that occurred previous to the course, perhaps, they were able to revisit their former experiences with an awareness or appreciation for the experience that did not exist before.

Appreciating the beauty of nature. Overall, students' description of nature, as they illustrated how they observed it and encountered it with their senses, shows an appreciation of it. They often highlighted pleasant sensations, and these statements were occasionally accompanied by statements appreciating the beauty of it or noting the pleasantness of the experience. Many students' writings showed their appreciation for the beauty of new experiences with nature and

their accompanying sensations. In some cases, students described scenes that one would typically describe as beautiful, such as the sun setting over the ocean, but did not label it beautiful directly. However, by describing these scenes, they suggested their appreciation for it indirectly. For instance, Daniel depicted swimming in the coral reefs in Maui. He described the colorful fish and clear, blue water but did not explicitly label it as beautiful. However, many students directly stated the beauty they saw by using terms such as “beauty,” “beautiful,” “pretty,” “magnificent,” and “gorgeous.” These terms were present in both the pre and post written responses. For instance, in the pre response, Merideth wrote, “The path was through gorgeous trees, waterfalls, rocks, and valleys full of flowers. It was amazing!” In the post response, Paige wrote, “There was so much beautiful thing everywhere.” Nora’s pre response shows how the beauty of nature captivated her. She wrote of her experience tubing down a river, “All that was going through my mind was the beauty. . .”

Students’ appreciation for the beauty of nature was found in both the pre and post responses but was more common in the post responses. Respondents were even more explicit in their appreciation of beauty in the interviews and expressed their appreciation more freely. Lindsay described her sense of awe toward the natural world during this time. She exclaimed, “I remember looking and just it was beautiful like, ‘Oh, my gosh! Why can’t I see this everyday!’” It was an experience that was beyond words or images. “It was breathtaking because only nature can do that. You can’t put it into words how beautiful it was. It’s just—you can’t describe it.” She said, “It can’t be drawn. . . . It was just amazing. It was beautiful.”

Seeing or experiencing something new in nature seemed to produce an appreciation. For instance, April, in her interview on her post drawing, described her first time on a boat and how she was able to see dolphins for the second time in her life. She described the experience as

amazing and identified seeing the dolphins as the most amazing part. Similarly, in discussing her pre drawing, she described her first time on an airplane and the views she saw from the plane. A few other students in their written responses and interviews described seeing nature from a new viewpoint. In seeing the world from a new view, students described their appreciation for the beauty of the land. For example, in the interview, Samantha explained the experience of hiking and said, “You feel like you are almost on top of the world. . . . It’s just these rolling hills that are just absolutely gorgeous. And you could just—it feels like you could just go on and on and on.” She explained how she appreciated this experience:

When you got up there, there was no looking down because you were as high up as you were going to get. And I really like the feeling of being on top and just getting to look down. And you saw the trees and hills and mountains and we saw—I think it was Shining Rock. . . It’s this huge rock, and it’s just massive. And you just look at it, and it’s just amazing what nature has done and what it’s able to do.

Through the interviews, students had the opportunity to be more effusive about their appreciation for nature and its properties.

Changing emotions. As students described how they experienced nature, many described the experience using emotional terms. Descriptions of students’ emotional experiences were especially common in the post responses. Students described the emotional tone of the experience, their emotions during the experience, how their emotions changed as a result of the experience, and the overall emotional impact of the natural scene. The emotional qualities of the experiences can fall into two categories: those that students found stimulating and those that students found peaceful and relaxing.

Stimulating experiences were experiences that grasped students' attention, challenged them, or surprised them. Students often deemed these experiences as "fun," "interesting," or "cool." For instance, Paige described the experience of walking her dog with a friend as "fun," and Kristen used this term to describe fishing in a canoe at sunset. She wrote in her post response, "Me and my friend Lisa went canoeing at sunset and it was so pretty on the water. We caught fish over the side of our boat, and we threw them back. It was so fun!" Other students used the term to describe planting flowers with a parent, hiking with friends, and picking pecans. Similarly, Emma described how learning more about nature while walking on the beach was "interesting." The inclusion of these terms suggests students found stimulation in the activities they were engaged in as they were connecting with the environment. Students often used these terms when they encountered something new or engaged in a new activity. For instance, Merideth said in one of the focus groups, "I saw a lot of animals that I had no idea lived in the ocean. It was really cool!"

Often stimulating experiences were juxtaposed with relaxing ones. Students occasionally described experiences as fun or interesting as well as peaceful, calm, or relaxing. For instance, after describing the fun of fishing on the lake, Kristen continued, "The sunset was really pretty and it was calm and peaceful." The interviews revealed these coexisting feelings as students often describing the same experience as both stimulating and peaceful. Often students described the landscape itself as peaceful. They described the quietness of the land and stillness of nature. For instance, Lindsay wrote, "I had walked out onto the beach, nobody was there, and it was very peaceful and quiet."

Other students described how they felt peaceful, calm, serene, or relaxed as a result of the experience, particularly in the interviews. Samantha wrote, ". . . the one place where no one ever

is and the peace really enters my body is the sanctuary. . . . Serenity fills my body and I feel the peacefulness and true stillness of nature.” Similarly, Adam said, “It kind of eases your thoughts, like if you are angry. It makes me feel at ease.” Students appreciated this quality of nature that was capable of helping them achieve this peace. Samantha claimed the outdoor sanctuary was “an amazing place humans are lucky to have surrounding them.”

In the post responses and interviews, students described how they were able to relax or release stress. For instance, Emily wrote in her post response, “One time when I had had a really stressful day, I decided to go on a run. The moment I stepped on the trail, everything went away.” Kalen also echoed this feeling of release. She wrote, “My relationship with the beach is peace. Everytime I go, I get really relieved. And it takes everything bad off my mind.” Similarly, Merideth wrote, “My experience is when I was at the beach in Destin, Florida when the sun was setting. I felt very peaceful and relaxing.” Perhaps students were drawn to experiences where they were able to relax and release stress. The post drawings and interviews occurred early in May, when students were completing final projects, preparing for final exams, and nearing standardized testing. Perhaps students were able to look to nature as a place for respite during a possibly stressful time. In addition, their reflections on their emotional connection with places during the special place project earlier in the semester might have contributed to their free discussions of their emotional states.

In the interviews, Kalen, Samantha, and Lindsay depicted similar experiences of being alone in nature, finding escape, peace, and release of stress. Kalen described how the beach represented a place of escape from the entrapment she associated with home. She said:

When I’m here in [our city], I feel like I’m trapped sometimes because people expect a lot from me, and I’m pressured by other stuff. And then I have stuff going on here at

school and stuff going on at home. But when I'm at the beach, it's like none of it exist.... She emphasized how she enjoyed being able to be alone at the beach. She said, "I go out there when there's not a lot of people out there." Later she said, "It's just me and the world. It's just me by myself." Similarly, Lindsay said, "So I felt alone at that time. I felt like no one was watching me. No one was doing anything. And it was just me and nature." For both Lindsay and Kalen, the beach represented a place of freedom and a refuge from society. Kalen explained:

See when I'm at home I don't think I can actually be free because I always have people watching me and people always have something to say or to take advantage of me and try to hold it against me. But when I'm at the beach, and I'm by myself, then I just feel like I can do anything. It's peaceful for me.

Like Kalen, Lindsay expressed how her time at the beach represented an escape:

It was calm and peaceful away from society and stuff so no one was there. Nobody, no one was talking. It was just nature talking you could say, just rolling back and forth and the breeze blowing. It was the sounds of nature that made it so calm and peaceful without the sounds of cars and horns and all that stuff.

In her pre drawing, she also expressed a time when she needed a break from the stresses of her everyday life. She explained, "One day I got home from gymnastics, and it had been a really, really, really long day. And I just wanted to get away and so about, not even half a mile from my house is a pond." She continued to explain how she approached the pond as a place of escape.

In her interview, Samantha echoed many of Kalen's and Lindsay's sentiments. She described how visiting the outdoor sanctuary at summer camp became a way to find an inner calm. She used terms such as "serene," "calming," and "peaceful" to illustrate her experience. She claimed, "It's just a really, really peaceful time." She found the stillness and quiet of the

sanctuary facilitated her connection. She explained, “You kind of feel connected in a way that you don’t when you’re in [our city], when you can hear car horns and construction and all those things going on. . . .” Like Kalen, she saw the place as a special refuge.

Becoming one with nature. In the post responses, a few students discussed how they became one with nature. This phrase was not present in the pre responses, only in the post written responses and interviews. Samantha indirectly described the experience of becoming one with nature when she described how peace enters her body when she spends time at the outdoor sanctuary at her summer camp. Other students were more explicit. For instance, April described feeling at one with the sea. She wrote, “When I was out on the boat I felt a little apprehensive about the water but then I felt like the water had taken me in and I had become one with the sea.” Nora described being a bridesmaid in California at an outdoor wedding overlooking the California hills. She wrote, “I was a junior bridesmaid, and looking out and seeing some hills made me fill one with the earth.”

Samantha’s and Kalen’s interviews provide insight into how this “becoming one” with nature occurs. As they released stress and found peace through their experiences with nature, they found transcendence. This transcendence was not a vertical transcendence involving their rising above the human experience to connect with something higher, but rather a horizontal transcendence of connecting with the world around them (Johnson, 2007). Students described how this experience had similarities with a meditative state. Kalen explained how she was able to clear her mind while on the beach and enter into a meditative state. She said, “I just relax because it helps me clear my mind. It just brings me peace. . . .” Then she explained this clearing of her mind helps her achieve a sense of freedom. She said, “I don’t really have a feeling because I don’t really have anything going on. Everything on my mind is gone. . . . I just

feel like I'm free." Samantha discussed a similar experience of clearing her mind as she experienced nature. She explained, "It's kind of a time to listen and when you listen you clear your head and you just take it all in." As she experienced this open consciousness, her perception of time changed. She explained, "It's not as if time stops, but it's as if time is stilled for a minute" She compared the experience to that of a yoga class, an activity characterized by serenity and meditation.

During this time of meditation, both Kalen and Samantha described experiencing a horizontal transcendence that was temporarily transformative. Kalen said of her time at the beach, "When I go there it's just like none of it exists, and I'm just a whole nother peaceful version of me." Later, she reiterated the transformation, "I'm like a whole nother Kalen like my mind is at peace. I don't have nothing to worry about." While Kalen described feeling like another version of herself, Samantha described it as the freeing of her inner self. She explained the experience, "Your mind is emptied and you just feel a rush of just—like your inner self comes in and nature is all around you." As she connected with the world around her in a horizontal transcendence, a deeper part of herself emerged. Through this freeing of the self, she found fulfillment. She expressed it as, ". . . you are kind of in the place where you are supposed to be . . . ," and then clarified, ". . . you just find your place where you belong in nature." This feeling of finding one's place is one of deep appreciation of the world. She explained, ". . . we really shouldn't even belong there because it's just so incredible."

Discussion of students' general empathy with the environment. Cheng and Monroe (2012) found that one way children perceive a connection to nature is through a sense of oneness. In this study, students used metaphors of "becoming one" with nature to describe their transcendent experiences with nature. These metaphors were particularly poignant in that they

implied a joining with nature so that students and their environments were no longer two separate entities, but one unified whole. Herron (2009) saw feeling a part of a whole as an essential component of an empathetic experience. She stated, “The capacity to feel for the most distant and seemingly unrelated other arises when we can transpersonally conceptualize and feel ourselves a part of the whole” (p. 116). Such a characterization of the relationship between themselves and the natural world implies a high level of empathy with the natural world. Buber (1937/1947) used similar metaphors in his description of an *I-Thou* relationship—an all-encompassing empathetic relationship. In this relationship, boundaries between the *I* and the *Thou* dissolve as the *I* holistically embraces the other.

This relationship between humans and nature involves a horizontal spirituality. Johnson (2007) defined horizontal spirituality as the “capacity for horizontal (as opposed to vertical) transcendence, namely, our ability both to transform experience and to be transformed ourselves by something that transcends us: the whole ongoing, ever-developing natural process of which we are a part” (p. 14). Thus, through horizontal transcendence, we are able to gain an understanding of ourselves as part of a larger “human and more-than-human ongoing process” (p. 281). Change, creativity, and the growth of meaning are possible through these transcendent experiences. Student responses indicated their understanding of their own transformation, their changing identities, and their situated relationship to the world.

In addition, these horizontally transcendent experiences offered psychological renewal. Students described feelings of peace and relaxation as they connected with the natural world, particularly in their post responses. Students’ use of the environment for psychological restoration is significant given its positive correlation with a pro-environmental orientation, or ecological paradigm (Byrka, Hartig, & Kaiser, 2010). This finding is not surprising given that

the experience of realizing one's relationship among other living organisms is characteristic of an ecological paradigm, a paradigm defined by connections and relationships. Through students' experiences, connections were formed and arbitrary boundaries between humans and nature dissolved. Contrary to the dominant social paradigm, students no longer viewed themselves as separate from or above nature. They were an inextricable part of nature.

By using these metaphors in the post responses, over half of the students had at least temporarily moved toward an ecological paradigm. This improvement is consistent with the current body of research on the impact of environmental education initiatives on ecological attitudes and worldviews. For instance, Johnson and Manoli (2008) conducted a quasi-experimental study that found that 10-11 year old students who participated in the environmental education intervention, the Sunship Earth program, experienced statistically significant increases in their pro-ecological worldviews as opposed to those in the control group whose worldviews remained stable. Additionally, Manoli et al. (2007) found similar results with 10-12 year old participants. Though many of these studies are quantitative, they support these qualitative findings regarding students' development of empathy with the environment as they participated in this program.

Student Experiences of Empathy throughout the Curriculum

While drawing exercises and interviews provided an understanding of students' experiences of empathy with the environment in general and offered data for comparison to understand how the curriculum might have impacted student empathy, other methods aimed to discover how students' experienced empathy as they participated in the program. Specifically, two focus groups conducted toward the conclusion of the course, with students who exhibited high levels of empathy, and observations and visual/verbal journal reviews throughout the

semester provided this data. This data demonstrated that students exhibited empathy with the environment throughout the semester. While experiences of empathy occur internally, I looked for evidence of empathy in student behaviors and reflections. Student empathy was particularly evident in their care for nature, awareness of the environment, and acceptance of responsibility for it. Overall, students progressed in their empathy with the environment throughout the course as they moved toward greater ecological awareness and demonstrated a willingness to work for ecological change.

Caring for nature. Many students demonstrated care for nature, particularly as they cultivated plants. However, for many students, their care for nature was conditional and tied to the health of the plants. Thus as the plants grew, students demonstrated care, but as the plants languished students disengaged. Therefore, in this dimension of empathy, students' level of care increased and then decreased in response to the circumstances. Additionally, students' missed opportunity to exhibit care for nature in returning objects to their natural settings further demonstrates this inconsistency in care. However, students' overall level of care was high when they were engaged in cultivating radish plants. Observations and visual/verbal journal entries provided the strongest evidence of students' care since they were conducted throughout the semester. Focus groups provided minimal evidence since they occurred toward the end of the course once student interest in the plants had dwindled in conjunction with the death of many of the plants.

In cultivating plants, students demonstrated their interest and willingness to care for the plants. This desire to care was most evident in students' behaviors in the classroom as they frequently checked on their plants, watered their plants, and asked questions regarding the appropriate care of their plants. For instance, Malik came into class many mornings and asked to

check on his plant. Once, even after I asked him to wait, I saw him over in the plant area checking on it. Other students were also attentive and might have overwatered their plants in their zeal. Students frequently asked questions about the appropriateness of the soil container, the need to transplant the plants, and the appropriate amount of water for the plants. In addition, students' visual/verbal journal entries indicated their interest. Nora wrote, "I like to take care and water my plant." Similarly, Kristen wrote, "I've enjoyed taking care of my radish, and it's grown a lot." Students' interest was sustained throughout the majority of the cultivation process. In planting the seeds, students appeared eager, and no students expressed a reticence to care for the plants. This interest continued even when some students replanted their seeds.

However, students' lack of interest began to set in after several weeks, once students lost faith that their radish plants would grow healthfully. During this time, students' attentiveness to their plants slowly dwindled. Students indicated disappointment with the health of their plant and their perceived lack of efficacy in cultivating plants. Many students blamed their own actions for their plant's demise. Daniel said, "Maybe we tried too hard," and Malik said, "I overwatered it." He claimed the project was his least favorite because he found it frustrating that his plant died. Anthony's comment in his visual/verbal journal about his relationship with his plant suggests his confusion over the decline of the plant's health and suggests his feelings of powerlessness. He wrote, "My plant died. I could not tell it was leaning and the cup had plenty of water."

While many students were disappointed and frustrated after the death of their plants, a few students indicated they viewed it as a learning experience. Merideth indicated in a focus group that she had learned from her mistakes and would like to try again next year. Similarly, Emma expressed that she was not disheartened but rather challenged to improve in her ability to

care for plants. She said, “It makes me want to grow more plants and try to learn how to take care of them and learn what they need, where they have to grow.”

Throughout the cultivation process, students expressed concern for the health of the plant. As the plants were growing, students reflected on their relationships with their plants in their visual/verbal journals. Many students described the growth of their plant and their desire for it to grow more. For example, Emma wrote, “I keep waiting for my plant to grow. I hope it grows big and will fit in the pot I will make.” Students’ descriptions of their relationships with their plants were often tied to the health of their plant. Those whose plants were healthy typically described their relationship as “good.” For instance, Daniel wrote, “I have a good relationship, it’s growing tall and strong.” However, when the plant was not growing as strong, students indicated less positive feelings. Kalen wrote, “The relation with my plant is sad because it died twice!” These entries demonstrate students’ emotional investment in the growth of the plants. In addition, students’ willingness to take action to contribute to the health of the plant shows their concern. Students were willing to replant seeds when a plant did not sprout and were eager to transplant their plants to larger containers. When I warned them that they might be providing the soil with too much water, students scaled back the amount of water they provided and asked my advice on the appropriate amount of water. Through their writings and behaviors, students indicated their investment in the process.

During the period of plant growth, when many students’ plants were sprouting and growing fairly well, many students indicated a bond with their plant. A few of these students indicated a strong emotional connection with their plant as they used the analogy of a mother and child relationship to describe their relationship with their plant. For instance, Samantha wrote in her visual/verbal journal, “My plant and I are very close. Like a mother and a daughter. I just

keep waiting for her to bloom! Haha! I have had to be patient and my plant is gradually growing and becoming a lovely plant.” Morgan also employed this analogy as she described the tragic passing of her plant. She wrote, “My plant passed away 2 weeks ago. It was tragic. Nora accidentally snapped it off. It was like taking a baby from a mama, thank you. ☹️” Below the text, she included a drawing of a gravestone with a wilted flower in front of a row of blooming flowers. Despite her clear use of melodrama in her depiction of the death of the plant, the entry suggests an emotional bond between Morgan and her plant.

A common element among several students’ responses, including that of Samantha and Morgan, was the use of personification. For instance, Emily named her plant Bella, and Morgan called hers “daughter” in her visual/verbal journal. Often these entries, like Morgan’s, appeared melodramatic. Students’ use of melodrama, personification, and parenting metaphors might have emerged for a variety of reasons: the desire for comic effect, the influence of their classmates, the urge to enact gender roles, or the desire to understand the plant in human terms. While the metaphors of the plant as a person or child might reflect misplaced or romanticized notions of nature (Garoian, 2012), they might also be indicative of students’ emotional bond with the plant and a concern for its well being.

Despite students’ strong expressions of care for the plants as they were growing, this care for nature was not consistent. In addition to some students’ declining interest in their plants, many students also showed a lack of care in returning their natural objects back to the woods. As mentioned in the overview of the case, instead of returning the natural objects, many students used the objects to disturb an anthill. Students had the opportunity to exercise care for nature by returning objects to their original homes so that they could decompose, but instead they used them to damage the anthill. On the surface, students were exhibiting aggression, the opposite of

empathy, toward other living things as they inflicted harm on the ants. However, this situation is more complex when we consider that these living things were red imported fire ants—an invasive life form in our region as they are not indigenous to our area and are harmful to native species of plants and insects. While students might not have been consciously aware of the invasive nature of the ants, they would have known how pervasive they are in our region and would have considered them pests. They would have been familiar with the way that the large anthills resiliently spring up along the edges of grassy yards particularly after a good rain and with how their sharp bites sting their feet. While the students were not taking productive action to restrict the growth of an invasive species, they might have been indirectly expressing their frustration with its pervasiveness. Regardless, this incident shows an absence of empathy and care for the environment as students exhibited aggression rather than the respectful eradication of an invasive life form. In addition, the incident is representative of some of the inconsistencies in students' care for the environment.

Developing awareness for the environment. In discussing their experiences throughout the semester, students indicated they were developing ecological awareness. This awareness extended to their outlook on nature, their understanding of their relationship with the environment, their stance on the severity of the ecological crisis, and their perception of the need for change. Focus group responses most revealed these changes in awareness. Students often used the term “realized” and the phrase “eye-opening” and variations of this term, such as “eye-opener” and “opened my eyes,” to describe how different experiences throughout the semester changed their viewpoints. These terms and phrases often served as cues to identify moments when students saw the world and themselves in a new way.

A few students indicated that they became more aware of the properties of nature as they participated in the course. This awareness was most mentioned in relation to the nature walk and the subsequent nature drawings. Lindsay said, “Once I actually got into that unit where we actually got outside and picked up stuff, it really helped me to open my eyes to see what nature can look like.” She went on to explain how her close observation of a vine surprised her because she noticed things she had not seen before as she was drawing it. In a focus group, Adam described how he went to his grandparents’ house the day before and was amazed by the flowers sprouting through the old driveway. Students became more observant and awakened to the interesting properties of nature.

Some described how the class enlightened them to the positive things about the environment instead of focusing on the negative and their obligations. Merideth said, “Now that we have studied [the environment], my eyes have opened, and I have seen all the positive things about it.” She described how before the course, she did not pay attention to the environment, and when she did, she thought more about the negative things like pollution and our obligations to the environment. Similarly in the other focus group, Anna said, “I just thought that every place we went, every place we drew made me feel better about nature and that it really helped us to connect to the life we live, the things we do, and nature.” Later, she explained her response, “Well, because most of the earth is polluted, and it really made me feel that not every place is.” Daniel described how our field trip to the park reminded him that not every place is damaged and that the visit gave him hope for environmental change in other places. Similarly by painting a special place, a lake that he visits, he realized the importance of its preservation. Daniel said, “It just really helped show me how important it is to keep our lakes and our lands clean and stuff and to preserve them so we can have them”

While students described how the curriculum awakened them to the positive aspects of the environment, they also explained how they were awakened to the environmental crisis. Several students indicated in the focus groups that they were not concerned about the environment before the course. For instance, Lindsay said, “So I didn’t really care about the environment.” Adam expressed similar sentiments and explained that he saw it as “pretty clean and stuff” before. The class awakened him to our ecological plight. He said, “It made me think that a lot of stuff is messed up like with pollution and stuff. It made me realize more about it.” Similarly, Merideth described how the fieldtrip awakened her to the crisis. She said, “It just helped me to understand what situation our environment was. . . .” She explained how seeing “what all of our trash does and where it ends up” impacted her. In realizing the eco-crisis, students indicated they understood the urgency of the situation. Emma said, “[The eco-art project] really opened my eyes to how important [recycling] is and what you can do with it. And how important it is.”

The most significant area that students experienced an ecological awakening was in their relationship with waste. Students became more aware of waste, its impact on the earth, and the need for minimizing it. In addition, students began to see the potential value in waste materials. This change in awareness of waste began when they visited the landfill. Merideth concluded in her visual/verbal journal, “I think of waste differently b/c of what I saw.” She explained in the focus group, “[The fieldtrip to the landfill] was also an eye-opener because there was so much [waste] just in that little area that I realized that we need to do something about that.” By seeing the waste being buried in the ground and learning of its impact on the earth, students were awakened to its damaging presence and the need to find solutions. Adam described in his visual/verbal journal how he was affected by seeing the waste at the landfill. He wrote, “To me I

think its bad to have a landfill, burying all that trash doesn't seem right. I think in a way it could damage the environment in the future." His comment shows an awareness of the predicament of the environment because of the disposal of waste, and it frames the situation in moral terms when it labels the disposal and its impact on the earth as "bad" and not "right." Such comments suggest he is moving toward Leopold's (1937/1947) concept of a land ethic—the idea that there is a right and wrong way to treat the earth.

By gathering consumer waste and repurposing the items into an artwork, students developed an even greater awareness of waste and began to reframe their ideas about waste. Nora explained how repurposing materials into an artwork impacted her. She said, "You got to think differently." She explained how the project changed her established ways of relating to waste:

Well, usually I will just put a bottle in the recycling, and usually my dog will go in there and try to eat it, and I will have to stop it. But this time I actually got to turn it into something pretty. So we used a bunch of different things like buttons and stuff that people usually don't look at that way—like that could be a mouse' eye.

Others confirmed how they became more aware of waste and to afford it value. Merideth said:

[The eco-art project] opened my eyes because you can use materials that are so worthless and make them into art and something that is beautiful. . . . The most random object that you can think of into something really beautiful.

Daniel agreed, "Yeah, because if you do that you can give it value." Later, Daniel described it as "another man's trash is another man's treasure." He went on to describe how he saw his neighbors' mass of Sun Drop bottles in their trash/recycling bins and asked to use them in his artwork. They soon formed the limbs of his robot. In another focus group, Nora stated how she

felt respect for trash “because it’s not just trash—it’s art.” Lindsay explained how she enjoyed the project and how she found pleasure in transforming waste. She explained:

I loved that because it shows that you can take simple things like cardboard and trash and turn them into something beautiful and meaningful. . . . So taking something that is so decreased in value and turning it into something that can mean so much to someone. It really shows you how much things can change from one thing to another.

Accepting responsibility for the environment. Students’ descriptions of their changes in ecological awareness were often accompanied by professions of a need for change. For example, Merideth described the landfill field trip as an “eye-opener” and then said, “there was so much [trash] just in that little area that I realized that we need to do something about that.” Students acknowledged the need for change, expressed their desire to change, and worked to affect change. They were beginning to accept responsibility for the state of the environment. As students accepted responsibility, they often showed both an awareness of the severity of the situation and a hope for the possibility of change. For instance, Daniel said, “Like at Barnett Park, just the whole beauty of it showed that there was hope for us to clean up our areas.” Through this realization of the need for change and simultaneous belief in the possibility for change, students made strides toward more responsible lifestyles and producing ecologically-responsible art.

Responsible lifestyles. Throughout the program, students learned ways to adopt more responsible lifestyles and were awakened to the importance of changing their current ways of relating to the earth. Daniel described how the class was helpful in learning “what we can do in taking a step to make the earth greener.” Students explained how they learned practical steps throughout the course. For example, Emma described how the guest speakers introduced her to

new ways of helping the earth. She said, “I learned ways that you can help conserve energy and help take care of the environment like you can put solar panels up and you can groom trees and gardens and things.” She was particularly inspired by the guest speaker who spoke about how she operates a farm on solar power. She said, “It really opened my eyes to how people take advantage of doing solar panels and things like that.” She also discussed what she learned from a guest speaker on water quality, “Like what [the guest speaker] said today, pick up animal wastes and pesticides. But you can build a brush zone, like when it rains, it will catch all the wastes and let the good water go.” Students’ visual/verbal journal responses supported students’ focus group comments and indicated that students had learned a variety of ways to live more harmoniously with the earth.

As students considered ways to adapt ecologically-responsible lifestyles, recycling was the lifestyle change that students most emphasized. Through visiting the landfill, students began to understand the problems and issues surrounding the disposal of waste. In her visual/verbal journal, Samantha described how the trip affected her attitude. She wrote, “I now know how important it is to recycle and take care to conserve the land used building landfills.” She recognized the importance of conservation and how the disposal of waste can jeopardize these efforts. She emphasized recycling as a solution. Similarly, in a focus group, Emma said, “[the trip] opened my eyes to how important [recycling] is and what you can do with it.” She went on to describe the importance of recycling and picking up litter. Likewise, Merideth advocated for reducing waste. She said, “. . . we need to cut back on all of our waste so it doesn’t overpopulate the landfill.” Toward the end of the course, students strongly emphasized ways to reduce and recycle waste as their primary way to help the earth. Their comments indicated that they realized the severity of the situation and the need for drastic change. For instance, Daniel said, “If we

don't start recycling and helping our planet then we might not be here for much longer." In this statement, he made connections between human actions, such as recycling, and the global eco-crisis. By using the term "we," he included himself in needing to recycle and help the planet. He was accepting responsibility to initiate change.

Others accepted this same responsibility. They recognized the need for change, identified practical steps that were needed, and explained how they would adjust their lifestyles. Without prompting, a few students made a pledge to change. For instance, Nora wrote, "I will try to save energy, create peace, and live in harmony." Lindsay declared, "I will be greener and continue to recycle and clean up the community." In his visual/verbal journal, Adam wrote, "I will start to recycle more instead of throwing it away in the trash can." Through making changes and accepting responsibility for the earth, students demonstrated their sense of environmental agency.

Responsible art. In addition to showing a commitment to more responsible lifestyles, students showed a strong commitment to creating ecologically-responsible art. While students demonstrated a strong commitment to all of the projects, students showed the most commitment during the eco-art project, particularly in bringing in items from home. One group went to great lengths to obtain the necessary materials. They had the idea to create a cow from milk jugs and milk cartons. To obtain these materials, this group of girls used several of their lunch periods to collect used milk cartons from their peers. Anna described it: "Collecting the milk cartons was an experience that I will never forget because it was so embarrassing and disgusting, and it smelled like dirty laundry. Also, we had to clean them out." To realize their artistic vision, they were willing to endure the unpleasant task of emptying others' used milk cartons and washing them. Anna's teammate, Morgan, described how the situation was also socially awkward:

Well, we borrowed your yellow gloves and plastic bags, and we went out in the cafeteria during our lunch period. We asked people, “Can we have your milk carton if you are done drinking it?” And most of them, when we would ask, they were like, “what?” and said, “no” because they wanted to know why and everything. We just said it was for an art project, and they were like, “sure.”

Even though the experience might have involved a good deal of embarrassment for the average middle school student, Morgan responded that gathering the cartons “was fun too because even though you got laughed at it felt good. . . .” In addition to gathering milk cartons at lunch, the group also brought in gallon-size milk jugs. After they brought in all their jugs from home, one group member went so far as to ask a local café for their empty jugs. Anna eventually admitted that she went to the café with her father and asked him to ask one of the cooks for the jugs. However, her diligence in asking her father to help her secure the milk jugs at the café shows her commitment and resourcefulness. Overall, this group’s experience shows a willingness to embrace discomfort in order to achieve their artistic vision. Other groups brought in outside materials as well, such as glue, hot glue sticks, a hot glue gun, a bag of plastic bottles, and buttons.

Beyond showing a commitment to responsible art, students showed an awareness of the significance of their artistic acts. They were aware that they were working responsibly and were affecting change. Daniel explained, “It was pretty interesting, and it helped us see what we could do, to see how we could be green but also have fun doing it.” Anna described the project: “And it made me feel connected because we were recycling milk cartons and that kind of helps the earth because you don’t throw it out—well, we recycled it, but sometimes people throw them out.” Students’ responses in their visual/verbal journals also demonstrated this understanding.

Emma and Lindsay stated that using recycled materials helped the environment. Similarly, Paige wrote, “It is recyclable so it won’t hurt the environment.” In discussing his eco-artwork, which incorporated used bottles, Adam wrote, “Without the reuse of bottles, we would be polluting more.” Besides showing an awareness of how they were repurposing materials and thus eliminating additional waste in a landfill, students were also aware of how their works might impact others’ ecological attitudes. In her visual/verbal journal, Merideth wrote about how she expected people to respond to her eco-artwork, “I think people will realize that trash is not useless and you can turn it into anything.” Overall, students understood the significance of their actions. One student described the experience of creating art from waste, and then Anna responded, “You were saving the earth.”

This commitment to creating art in ecologically-friendly ways extended beyond the class. For instance, Emma’s mother shared a story with me that suggested her daughter’s commitment to repurposing materials in art. Emma’s mother said that she accidentally broke four decorative plates the night before and was sweeping them up to throw them away. However, Emma stopped her and told her to save the broken pieces because they could be used in a mosaic. Therefore, instead of sending the broken pieces to a landfill, they saved them with the intent of using them in future artworks. Emma’s recognition of the value of the broken plates and willingness to take action by saving the pieces shows a commitment to art and ecological action that might continue after the conclusion of the class.

Conclusion

Nel Noddings’ (1984) theory of care provides insight into students’ experiences of caring for plants. Noddings described the need for a reciprocal relationship between the *one-caring*, the students, and the *cared for*, the plants. The *one-caring* provides care and uses empathy to

apprehend the needs of the *cared for*. Commitment to care and engrossment in the process are necessary on the part of the *one-caring*. The *cared for* reciprocates by expressing delight or personal growth. In this case, the *cared for*, the radish plant, could have reciprocated and facilitated the caring relationship if it had continued to grow. However, the conditions were not ideal for the plants to thrive. Daniel expressed the difficulties he encountered in his caring relationship, "Well, the radishes. It could be joy when they would grow, but it could be a pain in the butt when they didn't so . . . it's a love/hate relationship there." While students expressed frustration, disappointment, and a loss of interest in caring, many also expressed guilt over their inability to effectively care for their plants. Noddings declared that conflict and guilt will always be risks of caring. However, these feelings were not productive in continuing the caring relationship and encouraging students to engage in similar caring relationships with plants, particularly since perceived self-efficacy is closely tied to pro-environmental behaviors (Cheng & Monroe, 2012; Meinhold & Malkus, 2005). This situation emphasizes the importance of facilitating successful caring relationships between students and plant life.

Though the activity of caring for plants was fraught with joy and disappointment, the actual activity of caring for the growing plants allowed students a chance to cultivate biophilia, a deep love for all living organisms, as they experienced a sense of wonder and awe for their plants' development. Creel (2005) found that her elementary art students experienced a similar bond as they cultivated plants as part of an environmental education unit. In this study, students' exclamations regarding the growth of their plants and their focus group comments regarding their development of an awareness for the positive aspects of the environment show they were beginning to develop this concept. They were gaining a new appreciation for their environment and were beginning to believe that change is possible. Orr (1994) declared that an emphasis on

biophilia rather than fear is necessary to help students move beyond paralysis to action.

Similarly, Berry (1993) declared that one must love the earth before being asked to protect it. As students began to appreciate the environment and emphasize the positive aspects, they were more willing to take action to protect it.

Students' developing relationship with the environment, in the form of an expanding awareness and acceptance of responsibility, is consistent with the body of research on the affective impacts of various environmental education programs. For instance, Creel (2005) found that at-risk elementary students demonstrated increased empathetic understandings and behaviors as a result of their participation in an environmental art education program. In addition, Conaway (2006) found that middle school students in a place-based education program showed improved environmental awareness and gained an understanding of personal responsibility and care for the environment. Similar to the students in this study, Conaway's students began to adopt ethical terms such as "care" and "protect" in relation to the environment. Therefore, this study supports the existing empirical literature to suggest the ability of place-based education, and specifically a critical place-based art education program, to allow students to exhibit empathy and develop a relationship with the environment.

CHAPTER 7

RESEARCH QUESTION 2

Since pro-environmental orientations or ecological paradigms are closely linked to empathy with the environment, these orientations were important to examine. In examining students' pro-environmental orientations, the primary purpose was to determine the possible impact of the program. Through this investigation, I hoped to learn how students might see our position as humans within the natural world and if the program was able to affect their ways of viewing the natural world. In addition to helping determine the effects of the program, understanding the nature of students' pro-environmental orientations can shed light on specific aspects of students' empathy with the environment. In order to determine how the program affected students' pro-environment orientations and to gain a better understanding of students' empathy with the environment, the New Ecological Paradigm (NEP) Scale for Children (Manoli et al., 2007) was administered to students both pre and post (Appendix E).

New Ecological Paradigm (NEP) Scale for Children

The NEP Scale for Children (Manoli et al., 2007) is a 10-item survey designed for children ages 10 to 12. Students responded by selecting strongly agree, agree, unsure, disagree, or strongly disagree. Responses were assigned a score from 1-5. For environmental statements, items 1, 2, 4, 5, 8, and 10, a 5 corresponded to strongly agree and 1 to strongly disagree; whereas anti-environmental statements, items 3, 6, 7, and 9, were reverse scored. The survey provides an overall score demonstrating students' place on a continuum between an anthropocentric paradigm, or dominant social paradigm (DSP), and an eco-centric paradigm, or new ecological paradigm (NEP). The total scale score ranges from a 10, indicating an endorsement of the DSP,

and a 50, indicating an endorsement of the NEP. A score of 30 indicates a neutral stance between the two opposing paradigms. In addition, the survey provides a score on three inter-related dimensions: the rights of nature, the eco-crisis, and human exemptionalism—the idea that humans are exempt from following the laws of nature.

Quantitative Analyses

Descriptive and inferential statistics were used to estimate the effects of the treatment, participation in the critical place-based art curriculum, on students' pro-environmental orientations ($n=18$). The outcome variables were students' pre and posttest scores on the NEP Scale for Children (Manoli et al., 2007). First, the frequency distribution for each item from the 10-item survey, both pre and post, was calculated. Table 3 below lists the frequency distributions of the responses by percentage. Student post responses for environmental statements were strongly in agreement at 61.11% for item 1, "Plants and animals have as much right as people to live;" item 4, "People must still obey the laws of nature;" and item 10, "If things don't change, we will have a big disaster in the environment soon."

Table 3

Frequency Distributions of the Responses to the 10-Item New Ecological Paradigm (NEP) Scale for Children (n = 18)

Scale item		Responses (% of students)				Strongly Disagree
		Strongly Agree	Agree	Unsure	Disagree	
1. Plants and animals have as much right as people to live.	pre	55.56	33.33		11.11	
	post	61.11	33.33	5.56		
2. There are too many (or almost too many) people on earth	pre		27.78	11.11	11.11	50
	post	11.11	27.78	38.89	11.11	11.11
3. People are clever enough to keep from ruining the earth.	pre	22.22	27.78	27.78	16.67	5.56
	post	27.78	33.33	22.22	11.11	5.56
4. People must still obey the laws of nature.	pre	61.11	16.67	16.67	5.56	
	post	61.11	33.33	5.56		
5. When people mess with nature it has bad results.	pre	50.00	22.22	11.11	16.67	
	post	50.00	27.78	22.22		
6. Nature is strong enough to handle the bad effects of our modern lifestyle.	pre	11.11	38.89	22.22	16.67	11.11
	post	5.56	16.67	33.33	27.78	16.67
7. People are supposed to rule over the rest of nature.	pre	16.67	22.22	16.67	16.67	27.78
	post		11.76	11.76	52.94	23.53
8. People are treating nature badly.	pre	22.22	50.00	11.11	5.56	11.11
	post	41.18	41.18	17.65		
9. People will someday know enough about how nature works to be able to control it.	pre	22.22	38.89	27.78	5.56	5.56
	post	16.67	33.33	33.33	11.11	5.56
10. If things don't change, we will have a big disaster in the environment soon.	pre	50.00	22.22	16.67	5.56	5.56
	post	61.11	27.78	5.56	5.56	

Note. Items 3, 6, 7, and 9 (anti-environmental) were reversed scored to obtain an overall NEP score.

In addition, the mean, standard deviation, and median for both administrations of the survey were found for each item and dimension, both pre and post (see Table 4). A comparison of the means for each item between the pretest and posttest results shows that in all but one item, students' scores increased. Additionally, a comparison of medians shows that in all but one item, the median increased or remained the same. Item 3, "People are clever enough to keep from ruining the earth," is the exception. For this item, which was designed to measure the dimension human exemptionalism, student scores decreased from a mean of 2.56 to 2.33. Student scores increased most for item 2, "There are too many (or almost too many) people on earth," from a mean of 2.17 to 3.17. In addition, item 8, "People are treating nature badly," and item 7, "People are supposed to rule over the rest of nature," saw strong gains. These three items with the strongest gains were part of the rights of nature dimension and eco-crisis dimension.

Student scores on all three dimensions increased, and, correspondingly, the overall scores on the survey. See Table 4 for a presentation of the means and standard deviations for the overall survey and for each dimension. For the rights of nature dimension, the mean item score increased from 3.94 to 4.35, with a mean difference of .41. For the eco-crisis dimension, the mean item score increased from 3.49 to 4.03. The mean difference was .54. Additionally, the human exemptionalism dimension mean item score increased from 2.56 to 2.74. The mean difference for this dimension was .19. Overall, the mean item score increased from 3.33 to 3.71 with a mean difference of .38 between the pre and posttests.

Table 4

Mean, Standard Deviation, and Median of the Responses to the 10-Item New Ecological Paradigm (NEP) Scale for Children (n = 18)

Scale item	Pretest			Posttest		
	<i>M</i>	<i>Sd</i>	<i>Median</i>	<i>M</i>	<i>Sd</i>	<i>Median</i>
1. Plants and animals have as much right as people to live.	4.33	.97	5.00	4.56	.61	5.00
2. There are too many (or almost too many) people on earth	2.17	1.34	1.50	3.17	1.15	3.00
3. People are clever enough to keep from ruining the earth.	2.56	1.20	2.50	2.33	1.19	2.00
4. People must still obey the laws of nature.	4.33	.97	5.00	4.56	.62	5.00
5. When people mess with nature it has bad results.	4.06	1.16	4.50	4.28	.83	4.50
6. Nature is strong enough to handle the bad effects of our modern lifestyle.	2.78	1.22	2.50	3.33	1.14	3.00
7. People are supposed to rule over the rest of nature.	3.17	1.50	3.00	3.88	.93	4.00
8. People are treating nature badly.	3.67	1.24	4.00	4.24	.75	4.00
9. People will someday know enough about how nature works to be able to control it.	2.33	1.08	2.00	2.56	1.10	2.50
10. If things don't change, we will have a big disaster in the environment soon.	4.06	1.21	4.50	4.44	.86	5.00

Note. The scores for items 3, 6, 7, and 9 (anti-environmental) have been reverse scored to facilitate comparison between the items.

The mean scores for the pretest demonstrate that, on the whole, students began the semester with a pro-ecological perspective. Students' pretest scores for the rights of nature and eco-crisis dimensions tended toward an eco-centric orientation, though scores for the human exemptionalism dimension reflected an anthropocentric orientation. Posttest means increased for the overall score as well as for each dimension so that students concluded the semester with stronger pro-ecological worldviews. However, in the human exemptionalism dimension, students scored a 2.74, which indicates they concluded the course still leaning more toward an anthropocentric orientation in this one dimension.

Treatment Effects

Since the distribution of scores was approximately normal for the survey and for each dimension, paired *t* tests were used to determine the significance of the increase in scores. The rights of nature dimension had a *p*-value of .0213, a statistically significant gain assuming the *p*-value is significant if $p < .05$. The eco-crisis dimension had a *p*-value of .0069, an even more statistically significant gain. However, the human exemptionalism dimension had a *p*-value of .4840, a gain that contrasts with the other dimensions in that it is statistically insignificant. Despite the disparate gains in the three dimensions, overall the increase in survey scores between the pre and posttest was statistically significant with a *p*-value of .0248. See Table 5 for the *t*-scores, degrees of freedom, and *p*-values for each dimension as well as for the overall survey.

Table 5

Comparison of Mean Pre and Posttest Scores on New Ecological Paradigm for Children (n = 18)

Factor	<i>Pretest</i>		<i>Posttest</i>		<i>t</i>	<i>df</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Rights of Nature	3.94	.83	4.35	.54	2.54	17	.0213*
Eco-Crisis	3.49	.84	4.03	.68	3.07	17	.0069*
Human Exemptionalism	2.56	.73	2.74	.82	0.72	17	.4840
Total Score for Scale	3.33	.53	3.71	.47	2.46	17	.0248*

*Statistically significant difference (<.05) between pre- and posttest scores

Discussion

To contribute to the validity of the survey results, the curriculum was not informed by the survey. Thus, the curriculum did not explicitly address the majority of the concepts on the survey. For instance, we did not discuss the importance of obeying the laws of nature, item 4, or the rights of plants and animals to live, item 1. However, students might have changed their ideas about these concepts during the class because of their meaningful interactions with nature or through considering the consequences of our actions on the environment. Similarly, we did not address how the human population has rapidly increased or how the number of humans on the earth contributes to the loss of natural resources. Therefore, any increase in scores on item 2, “There are too many (or almost too many) people on earth,” might be attributed to changing ecological paradigms rather than explicit instruction on a particular issue. The exception might be items 8 and 10: “People are treating nature badly” and “If things don’t change, we will have a big disaster in the environment soon.” Although I did not explicitly make these statements that

relate to an eco-crisis, they were inherent in the art of Alexis Rockman, which we studied as a class. Overall, the independence of the curriculum's development and implementation adds validity to the survey results so that they are more likely to demonstrate a change in paradigm rather than ideas about a few specific concepts.

Because this analysis included a significance test with a notably small sample size ($n = 18$), the relationship between sample size, treatment effect, and statistical significance is worth examining. Wilkerson and Olsen (1997) found a widespread misunderstanding regarding the use of the significance test and its interpretation in the literature (Bakan, 1966; Carver, 1978; Cohen, 1990; Morrison & Henkel, 1970) despite the test's widespread use and acceptance in the social sciences (Nelson, Rosenthal, & Rosnow, 1986). They claimed:

Evidence has suggested that researchers place more confidence in the statistical significance of studies in which large samples have been used than in studies employing small samples (Bandt & Boen, 1972; Rosenthal & Gaito, 1963; Stone & Bodner, 1969). An understanding of the mathematical procedures of the significance test demonstrates that such confidence is misplaced (Bakan, 1966). . . . Because small sample size (n) is in the denominator of the formula for deriving statistical significance, small samples demand a larger treatment effect than large samples to reach an equal level of statistical significance. This inverse relationship between treatment effect and sample size is often misunderstood (Bandt & Boen, 1972).

Thus, the small sample size of this study does not diminish the statistical significance of the increase in students' survey scores. Rather, it highlights the large treatment effect that was necessary to obtain statistical significance with such a small sample size (Mertens, 2010; Wilkerson & Olsen, 1997).

In addition, the qualitative data supported the conclusion that students made significant gains in their ecological paradigms, particularly in their views on the eco-crisis. On the survey, students' scores increased most on the eco-crisis dimension, with a mean item score increase of .54. Student responses during the focus groups support this data. Students often used the phrase "opened my eyes" or a variation of the phrase to depict how their attitudes changed during the course. In addition, they discussed how they became awakened to the degraded state of the earth and the need for change. For instance, Adam said of the class, "It made me think that a lot of stuff is messed up like with pollution and stuff. It made me realize more about it." Similarly, he later said, "If we don't start recycling and helping our planet then we might not be here for much longer." These responses indicate an awareness of the eco-crisis and how the class was influential in helping them form this realization.

Since the human exemptionalism was the only dimension in which students did not make statistically significant improvements, it is worth examining. This dimension was measured by three items, three anti-environmental statements that were reverse scored. Of these three, students' mean score only decreased on item 3, "People are clever enough to keep from ruining the earth." This statement has the potential to produce multiple readings. It was intended as an anti-environmental statement to measure human exemptionalism; however, it could also be read as a pro-environmental statement measuring students' belief in humans' capacity to produce environmental change. According to this second reading, students' agreements would indicate a positive outlook regarding our capability to live in harmony with the earth rather than a belief that humans are exempt from living in harmony with the earth because of human ingenuity. Thus, this item might have caused confusion. Similarly, item 9, "People will someday know enough about how nature works to be able to control it," might have been read as "People will

one day understand nature enough to be able to control the eco-crisis.” Since the qualitative data suggested that students experienced a hopefulness during the course about addressing the eco-crisis, this reading is a possibility. Therefore, both items 3 and item 9 might need to be reworded for clarity. In addition, the scores on this dimension varied greatly. Specifically, students made significant gains on item 6, “Nature is strong enough to handle the bad effects of our modern lifestyle,” from 2.78 to 3.33, but student scores decreased on item 3.

Manoli et al.’s (2007) findings in developing the survey instrument also provide some insight into the lower human exemptionalism scores. In refining the NEP Scale for Children, Manoli et al. (2007) administered the survey to students enrolled in Sunship Earth, an earth education program. They found that students scored lower in the human exemptionalism dimension than the other dimensions. Perhaps the items invite multiple readings or perhaps human exemptionalism is an entrenched mindset that is not easily changed.

Human exemptionalism is a mode of thinking that positions humans as separate from the natural world and exempt from natural limits (Williams, 2007). By following this line of thinking, people have felt free to transform and exploit the natural environment for their own benefit. Williams described how this mode of thinking has been prevalent since the Enlightenment. While the social science community has begun to critique the view of human society as separate from nature, Williams claimed there has been an “uneven rejection of the Enlightenment metanarrative” as we continue to view human consciousness as distinct from other natural phenomena. This view of human consciousness is founded on Cartesian metaphors of the mind and perpetuates the human exemptionalist ideology. Because these metaphors have shaped our society, and are still common even within the social science community, it is not surprising that students’ responses indicate the presence of this ideology.

Limitations

As this study represents a case study in an educational context, I was working with an intact group, an art class, with no control group. Therefore, neither random sampling nor random assignment were possible. In addition, they were not ideal since the focus of a case study is on obtaining rich data from a real world context. However, this lack of randomization in the sampling does impact the external validity of the quantitative results. A randomized experiment would better determine how these results could be generalized to the overall population. Mertens (2010) claimed that when working with an available population, the use of parametric statistics is questionable. Thus, we cannot surmise that these results are applicable to the larger population. However, they are beneficial in understanding this one case.

Several extraneous variables could have impacted the internal validity of the study. One threat is testing. Anytime students take a pre and posttest, this threat should be considered. By taking a pretest, students may have been sensitized to the information they should focus on during the course. Therefore, they may have remembered some of the statements and reflected on these concepts throughout the semester as they participated in the class. Maturation could be another possible threat to internal validity. However, since the time between pretest and posttest was less than four months, maturation is not a significant threat.

This study may also present possible threats to external validity. While this study was designed as a case study and was not intended to have strong external validity, the threats to external validity can be useful to examine. One possible factor to examine would be multiple-treatment interference. Four students were enrolled in an environmental awareness class at the same time that they participated in this introductory art class. Because both interventions were applied simultaneously for these students, it might not be possible to isolate the effects of each

program. However, we can examine the four students' scores to see if their improvements varied significantly from the overall class improvement. This examination shows that the mean difference in these four students' overall scores showed slightly less of a change than the rest of the class. Therefore, the interaction of the environmental awareness class might be minimal.

Another factor to consider is the novelty effect. Perhaps students were more attuned to learning because their experiences in the class were novel. Some of the activities were somewhat unconventional for an art class. These included nature walks, field trips, drawing outside, growing plants, using recycled materials, and working in groups. If this treatment were widely implemented and all students' art education experiences were more similar to the ones students experienced during the course, perhaps the gains would not have been as significant.

Another threat to validity is the experimenter effect, which I aimed to minimize. I administered the pretest and posttest following the tenets of the postpositivist paradigm. I strived to be as objective as possible and used the same instructions and procedures for both administrations. This uniformity contributed to treatment fidelity. However, I was not an aloof administrator. As their teacher, students knew me and were familiar with me. Therefore, my relationship with students might have influenced their responses, although I tried to minimize this effect by following uniform procedures.

In addition, the time that I administered the posttest might have influenced the results. I administered it in May, only a few weeks from the end of the school year. In their other classes, students were concluding major projects during this time and were preparing for standardized tests and final exams. Additionally, the students were becoming restless in class. They were becoming more and more talkative and spending less time on assignments than usual. Therefore, the time of measurement might have negatively influenced the posttest results.

Future Research

The survey results demonstrated that participation in a critical place-based art education program was effective in impacting a group of students' pro-environmental orientations. The results were statistically significant as well as practically significant. This intervention required relatively few additional resources, such as funding and time, yet it was able to produce a significant overall impact on these students' pro-environmental orientations. However, these results cannot be generalized beyond this group of students because of this study's design as a case study. More research is needed to determine how this intervention might affect a larger population. A larger, quasi-experimental study is recommended. A larger sample would be beneficial so that the results could be disaggregated by student characteristics. Data on student characteristics and the corresponding responses would provide information on whether particular groups show more significant gains than others. Characteristics such as gender, race, age, achievement level, and socio-economic status would be important to examine.

CHAPTER 8

RESEARCH QUESTION 3

To understand which aspects of the program were most effective in helping students to develop empathy with the environment, I recorded my observations throughout the semester, reviewed students' visual/verbal journal entries, and conducted two focus groups with students toward the end of the course. While the analysis of students' experiences of empathy in Chapter 6 identified specific points throughout the curriculum at which students experienced empathy with the environment, this analysis now turns to examining the contributors to these experiences. Focus groups provided students with the opportunity to discuss their experiences in the class—specifically their connections with the environment, when they experienced these connections and why they experienced these connections. In addition, observations and visual/verbal journal reviews also supplemented this data. In examining how the curriculum contributed to students' empathy with the environment I am conceiving of curriculum in a broad sense by including the social dynamics, physical environment, and teacher's role as part of the curricular experience. An analysis revealed that experiencing the world directly, providing opportunities to care and affect change, and allowing students the freedom of curricular choices contributed to students' empathy with nature during the class. Additionally, the social dynamics of the class and teacher's investment were able to facilitate these experiences.

Contributors to Empathy with the Environment

Experiencing the world directly. Students valued how the curriculum afforded them opportunities to experience the world directly. Through these opportunities of interacting directly with the environment and community, students were able to experience empathy with the environment. Experiencing the world directly often involved leaving the classroom and

seeing the outside world firsthand. Specifically, these opportunities included drawing in the courtyard, walking on the wooded nature trails and collecting natural objects, drawing plants and natural objects in the classroom, cultivating plants, visiting a landfill, and eating lunch in a city park. Through these firsthand interactions, students had the opportunity to observe, draw, learn, and form connections to the environment and the community.

The nature walk and corresponding search for natural objects allowed students to leave the confines of the classroom to interact directly with nature. Through this opportunity, students formed connections with nature that would not have been possible in the classroom. Anna explained, “Walking down the trail and seeing everything [helped me connect]. It’s visual. It’s not just like sitting in here and watching a video or something. We actually got to see it.” Later she said, “You can feel it. You don’t just see it.” Students described their interactions with nature as a significant part of the experience. They described walking through the woods and courtyard, jumping over logs, throwing sticks, pricking their fingers on a “porcupine thing,” and picking up objects to draw. Students demonstrated appreciation for interactions with nature throughout the semester as they often seemed reluctant to discontinue them, especially during the field trip, nature walk, and drawing in the courtyard.

In addition to interacting with nature while on the nature walk, students noted how the experience of picking up objects and studying them was important in helping them connect with nature. They appreciated that they were able to draw the objects from observation and emphasized the benefits of this approach. Emma said, “I think what really helped me with that connection was picking the objects up and then drawing them.” Then she described how drawing from real objects was much better than drawing from an image of an object. She said, “You don’t really get that much of an idea as having it right next to you. You can look at it up

close, at a distance, at different angles, and the color.” Nora agreed and explained how drawing from a real object allowed her to see the colors, shapes, and textures more clearly. In addition, she claimed that she learns best from hands-on activities. By emphasizing the importance of drawing from actual objects, students demonstrated the importance of direct interaction with nature. They appreciated their ability to move the object, to view it from other angles and positions, and to observe its colors under different lights. Through these interactions, students formed connections. For example, Lindsay marveled at the vine segment she selected. As she twisted the vines and viewed them from different angles, she was delighted to discover the different shapes that formed in the negative spaces between the vines. Direct interaction facilitated discovery and appreciation.

In addition to appreciating the nature walk, students also valued the fieldtrip to the landfill. Through this fieldtrip, students gained an understanding of waste management issues and developed a concern for the fate of waste. Morgan explained how visiting the landfill in person was important: “So instead of looking at a picture or watching a video of a landfill and what happens there, we got to go and feel the ground and feel how real it looks over with the trash under there.” She described how driving over the hills, seeing the oil containers, and watching the mulch being processed were important in helping her to “process everything that was going on.”

Besides interacting with the physical environment, students also interacted with the landfill staff. Students noted how this interaction enhanced their experience. Nora explained, “I felt that if we had just walked around the landfill without a guide it wouldn’t have been useful.” She explained how our group would have had difficulty understanding the workings of the landfill if we had not had a guide to provide information about what we were seeing. For

instance, she noted, “We wouldn’t have known that they have cookouts with the leftover propane and stuff and what they do with the refrigerators and how they have to get the chemicals out of that.” Through their interactions with the guide, students enhanced their understanding of the waste management system. However, students also formed connections with the staff as they learned of the staff’s personal experiences and stories related to waste management. Nora explained our interactions with the guide, “It’s kind of like they are also explaining their experiences.” Many of these experiences served as exemplars for how to responsibly handle and reduce waste. By learning of the staffs’ experiences, they were forming connections with others in the community who endeavor to reduce waste. Students formed similar connections with guest speakers who came to discuss ecological issues as they gained new understandings and formed relationships.

This theme of connecting with nature through direct interaction is directly supported by students’ drawing exercises and their corresponding interviews. In the experiences students selected, they referred to times they directly experienced nature. Similarly, in the focus groups, students referred to times they directly experienced nature during the class. In all of these experiences, including those that occurred outside of class and those that occurred before the class began, students described a direct interaction—a direct experience. Experiences of connecting with nature while watching a movie or looking at an image were absent, although a few students described times they were looking out airplane windows. Because of the importance of direct experiences in forming connections, students must be able to directly experience the environment and interact with it in order to develop empathy with it.

Opportunities to care for nature. During the class, students had the opportunity to exercise care for nature, primarily by cultivating plants but also by returning natural objects to

their outdoor homes. Through these arranged opportunities for students to exercise care for nature, students were able to demonstrate empathy with the natural world. For example, through cultivating plants, students exhibited concern for their plant and its well-being, interest in caring for it appropriately, and enthusiasm for its growth. Thus, students' exercises of caring for nature became a contributor to their empathy with the natural world. However, as mentioned in the Research Question 1 findings, complications in growing the plants and students' indisposition toward ants did not allow opportunities for care to fully develop in some cases. Therefore, while caring for nature provided a place for empathy, it also had its limitations. I will examine the cultivation of plants and will discuss the strengths and limitations of this activity.

As discussed in the Research Question 1 findings, students' cultivation of plants was initially infused with empathy and care. Students expressed their interest in caring for plants through their attentiveness in watering them and their frequent questions regarding the appropriate way to care for the plants. In addition, their visual/verbal journal entries indicated their interest in the well-being of the plant. Some students even used the metaphor of a parent/child relationship to describe their caring relationship with the plant. When we first planted the seeds, students came in eager to water their plants. As Malik entered the room almost every day he asked if he could water his plant. The girls expressed excitement when their plants sprouted. Students checked their plants often and asked about the necessary amount of water. However, as the plants' health began to diminish, students began to lose interest and expressed disappointment.

The strength of cultivating plants is that it allows students to care for nature directly as they interact with the soil, water, seeds, and plants. Through this interaction, students are encouraged to consider the needs of the plant and the appropriate way to meet those needs so that

the plant can flourish. Students are required to empathize with the plant and exhibit care if they desire for their plant to grow. In this case, students showed signs that they were experiencing this form of empathy as described in Chapter 5 and 6.

However, the weakness of this activity is that students are not always successful in cultivating plants, which may lead to disappointment and lack of interest in further endeavors to cultivate plants. In this case, the radish plants did not grow to maturity, which suggests that the death of the plants was not related to students' actions. However students blamed themselves for the lack of growth and expressed frustration and disappointment. Some even expressed a lack of efficacy in growing plants. Ashley, in particular expressed these feelings. She asked if she had to plant another plant to replace her dead one. She explained that if she planted something it would probably just die. Students' lack of desire to continue cultivating plants appears to be a direct result of their unsuccessful previous experiences with cultivating plants. This failure and students' subsequent disinterest and detachment suggests the importance of facilitating successful interactions between students and nature.

Opportunities to affect environmental change. Students had the opportunity to affect change during the course as they created ecologically-responsive artworks. As students created these works, they exhibited empathy for the environment, particularly as they began to accept responsibility for the welfare of the earth. The last two projects—the future of place drawing and the eco-artwork from waste materials—particularly encouraged students to act to affect environmental change. The future of place drawing represented an act for change as students visualized better ecological futures and communicated their visions to their community through their drawings and written statements that were displayed at the mall. Students' eco-artworks represented an act for change as students were acting to minimize waste but were also

communicating ecological ideas to their classmates as they displayed them throughout the school. I will examine these two projects and consider how each approach played a role in helping students develop empathy with the environment.

Future of place drawings. Students' drawings and writings clearly communicated their visions for better ecological realities. Students imagined vacant buildings and unused parking lots replaced by community gardens and parks; companies and community centers using renewable energy sources such as solar and wind power; restaurants and grocery stores serving locally-grown, organic produce; sidewalks, bike paths, nature trails, and bicycle stands reducing our reliance on automobiles; rooftop gardens on structures within the city; energy efficient light bulbs in street lights; local stores selling products made from recycled materials; trees planted to break up the monotony of asphalt parking lots; and recycling bins easily accessible across the city. Through these visions, they applied and extended the general, ecological improvements we discussed in class to envision better ecological futures for the significant places in their lives.

Student writings accompanying their drawings demonstrated that students moved beyond meeting the requirements of the assignment to demonstrating concern for the improvement of their community. In Samantha's description of a better ecological future for our city's cultural center, she not only described the vision but also explained her personal investment in the changes. She wrote:

. . . I added some new features that would make the center more environmentally friendly. I added solar panels to save energy and cut down on expenses. Also, I added windows that open so on nice breezy warm days the windows can be opened instead of using air conditioning. A garden was added as well for the catering kitchen in the theatre and science center to have nice fresh food literally outside their windows. There are also

many new trees to release oxygen and help the environment. To hopefully increase the pedestrians walking by I widened the sidewalk and added a nice grassy lawn to protect the passing pedestrians. I spend a lot of time at the center taking dance classes and attending performances. I want to make sure it helps the environment and continues to keep its great reputation. . . .

Through this statement, we can see how her own connection with the center lends relevance to her visions and encourages a holistic vision for a better state of affairs for the environment and community. Others expressed their personal investment in the realization of their visions.

Morgan wrote, “I drew [the] college because I support [the college] and we go to there football games. I want [the college] to continue on for many years and with solar panels we can keep [the college] an environmentally friendly place.” Merideth expressed her desire for change. She wrote:

In the future, I see Mellow Mushroom with solar panels, fresh veggies in the food, a more attractive appeal, and eco-friendly. I drew it eco-friendly because I feel like we are a big part of the future, and it is our job to make it clean and safe.

These expressions of change in students’ drawings and writings were displayed at the local mall’s student art gallery. This opportunity to communicate their ideas for ecological change beyond the classroom lent relevance to students’ endeavors and provided students with the opportunity to affect change in their community. Through working to affect change, they were beginning to assume responsibility for the ecological states of the community.

Eco-artworks. Students described the eco-artworks as the most important project in helping them connect with the environment. This project most exemplified working for ecological change as students were physically acting for change as well as communicating their

ideas for change to others. Anna identified the eco-art project as the best project and explained its importance. She said, “It made me feel connected because we were recycling milk cartons and that kind of helps the earth because you don’t throw it out.” Similarly, Daniel said, “It helped us to see what we could do, to see how we could be green and also have fun doing it.” Additionally, students were aware that their works, displayed around the school, had the potential to impact others as they addressed issues of waste. Daniel assumed the works had an inspiring potential. He wrote of the viewers, “I think they will be amazed and inspired to go green.” Merideth expressed how the works could affect people’s ideas about waste. She wrote, “I think people will realize that trash is not useless and you can turn it into anything.” Brandi explained how the sculptures could impact others’ environmental attitudes and ideas about repurposing waste. She wrote:

Because they would understand that if you recycle bottles the world would be cleaner and you wouldn’t see any bottles or trash on the ground. [It] also shows how you can make a lot of things out of recycling stuff.

By participating in this project, students’ desire to initiate environmental change increased. For instance, in the focus group, Emma described how the project impacted her. She said of the project, “That one really opened my eyes to how important [recycling] is and what you can do with it. And like how important it is.” In her visual/verbal journal, she wrote about how the project inspired her to make further changes. She wrote, “I responded to the project by wanting to help the environment more and more.” Adam reflected on the project in his visual/verbal journal and pledged, “I will start to recycle more instead of throwing it away in the trash can.”

Opportunities for curricular choices. Students in both focus groups described how they enjoyed having choices—choices of subject matter, ideas, styles, media, techniques, and processes. While certain components of the curriculum offered more choices than others, students appreciated these choices when they were available. For instance, students appreciated the choices they were given in the nature drawing. In describing the assignment, Nora said, “I felt that it was nice because we could walk through the woods and find an item of your choice. We weren’t forced to do one thing, and you could do whatever you wanted with it.” Later she explained further. She said, “Well, I said before that having a choice to choose something first. Instead of ‘draw a stick,’ you got to choose what you wanted it to look like and also it was like Anna said, more hands-on and stuff.”

The eco-art project represented the time that students most enjoyed the freedom to come up with their own ideas and to choose their own materials. Morgan explained the eco-art project: What was fun was that we didn’t get assigned a project, and we got to think of this all by ourselves. . . . And we connected by making it big and using our own ideas and everything and our own products too.

Nora claimed that having choices during the assignment allowed her to form a closer connection. She explained, “Because you weren’t assigned anything. You were assigned an eco-thing but you got to choose what materials you were going to use and how you were going to use them and why you were going to use them.” Students appeared most energized during this time as they often started working before class started and expressed reluctance to discontinue working at the end of the class period.

By having choices, students felt free to be creative and afterward experienced a sense of pride in their creative endeavors. Anna stated, “I just thought that it was creative that we could

choose our own topic and not get assigned one and that we could do anything we wanted. . . .”

Morgan explained how she enjoyed the freedom to select ideas and expressed her pride in the idea. She said, “It was fun to work with friends and to create something kind of with irony because we made a cow out of recycled milk cartons.” In her visual/verbal journal she expressed her sense of accomplishment. She wrote, “I love the results of the cow because we did a very odd project and it shows how creative we are.” Others felt similarly about their projects. Anna wrote, “People will love it! I think we did a fantastical job!”

Facilitators of Empathy with the Environment

Social dynamics. The social dynamics of the class facilitated learning and contributed to an atmosphere conducive to empathy. Many of the students were already close friends at the beginning of the course. They seemed to become even closer as the year progressed, especially once we started the group projects. They were extremely talkative after that. Students reported enjoying spending time with their friends during the projects and activities. Anna reported about the nature walk, “I just thought that it was fun because we got to hang out with our friends in the forest.” Similarly, Malik expressed how he enjoyed walking around the courtyard with Anthony as he drew. Students’ reports of enjoying interacting with their classmates demonstrate their close relationships and suggest how these relationships were supportive of students’ development as artists. For instance, Morgan identified her eco-art project group members as her friends and discussed how they enhanced her experience. She said, “It was fun to work with friends and to create something. . . .” Nora agreed. She said, “And I liked being in a group because you had a bunch of different ideas instead of just one. . . .”

In addition to students forming close relationships with others in the class, students exhibited a high level of respect for one another. Although there were a few exceptions, which

are detailed in the overview of the case in Chapter 5, students responded with respect and cooperation throughout the semester. For instance, during artmaking, students often volunteered to share personal art materials and helped each other reach their artworks on the shelves. In critiques, students provided positive feedback to their friends and those outside their close friendship circles. In addition, the class was able to compromise on the choice of music they would listen to in class. Even though the class included students from very different backgrounds, they did interact with respect and cooperation. This respectful behavior definitely minimized disruptions to teaching and learning. In addition, the culture of respect that permeated classroom interactions might have predisposed students to be more empathetic, towards each other and towards the environment.

Teacher investment. While students exhibited respect for each other, I aimed to demonstrate respect in my interactions with students. As a teacher researcher, I was highly invested in this process. Throughout the semester, I aimed to provide high-quality art instruction while promoting a culture of care and respect. To promote care and respect, I aimed to model them through my interactions with students as I established relationships with them. Typically, I greeted students at the door as they entered the class. I often addressed them by their first names, which I learned quickly since this was my first time teaching these students. I used time when I was not engaged in direct instruction to mingle throughout the room interacting with students whether by providing individual art instruction and feedback or by discussing non-instructional topics such as their interests and backgrounds. During these times, I purposefully moved from table to table as I aimed to divide my time equally amongst students.

As discussed in Chapter 5, students reacted positively to me throughout the course. For instance, they frequently greeted me at the door with a lively, “Hello, Mrs. Bertling!” In

addition, students' playfully suggested that they were going to show up at my house for a slumber party. At the end of the semester a few students shared that they would miss me and one student compared me to Mr. Shuster, a beloved teacher on the television show Glee. Some surrounding students agreed with this characterization.

This positive relationship with students might have increased students' willingness to participate in the course more fully. Students regularly participated in class discussions, and I rarely encountered expressions of reluctance toward an assignment. The exception would be Anthony's frustration with drawing plants and some students' excitement after hearing they were completing their final visual/verbal journal entry. Overall, students exhibited a high level of motivation toward their artistic endeavors. This commitment was evident from the second week of the semester when students requested to take home their visual/verbal journals to work on additional journal entries. Several students took home their visual/verbal journals and created collages in them. This motivation could be seen throughout the semester. For example, Daniel, Austin, and Adam chose to rework their special place paintings to improve them after they received their project grades. While I have always had the policy that students can rework assignments for a better grade, I rarely have students willing to take advantage of it. Additionally, the students' future of place drawings were so well-done that I felt comfortable displaying all of them at the mall. Students' participation during the eco-art project showed dedication as well as enthusiasm as many began working as soon as they entered the class, brought materials from home, and were interested in how the works would be displayed. Visual/verbal journal responses revealed students' pride in their work. For instance, Anna wrote, "I think we did a fantastical job!" Throughout the semester, the students in the class had very few missing assignments, and the students received high grades in the course.

In addition, Lindsay's comments suggest that the instruction was effective. At the end of an interview on her experiences with the environment, I asked Lindsay if she had anything else she would like to share. She volunteered:

You are a great teacher. You do. You are though. You are a great teacher. You actually explain stuff to where I understand it. Like last year I didn't understand anything last year because the teacher she would seriously just go straight into the lesson. And I don't understand. She would. . . . We did these little sketchpad things one time I remember. We had to use the coal and the chalk for something. And she just did it, and we watched her and she said, "Now go do it." She didn't explain. And you explain and that helps me a lot because I have to, it has to be shown or explained to me or I don't get it because I just think that way.

As I provided high quality art instruction, the curriculum was better able to affect students to develop an interest in the content, to actively participate, and to achieve a level of success. Additionally, the culture of respect that I aimed to cultivate further facilitated the curriculum. Through this safe environment, learning and empathy flourished—empathy with others as well as with the environment.

Conclusion

As students participated in the course, their direct interactions with the world contributed to their empathy with the environment. Students' descriptions of connecting with the environment as they interacted with it outside of class supported this finding. In the focus groups, students shared experiences, without being prompted, of connecting with nature as they interacted with it, such as through snorkeling and swimming. Adam shared his experience of

searching for sand dollars on the beach. Similarly, Daniel described his interactions with sea life in Hawaii when asked if there was anything else they would like to share. He said:

Well this wasn't from this class though, when I felt connected to nature. It was the summer of 2010. We had gone to Maui, Hawaii. I had gone swimming near the beach, but I swam about a hundred yards out. And there was like these little coral reefs and stuff and there were these sea urchins, I think they are called, and they are really spikey. And they would move by themselves, and they were really cool. And there was all these neon-colored fish, and the water was so cool.

Merideth shared a similar experience of snorkeling in the ocean in Florida. Then, she said:

I also think doing school-related activities is not the only key to being connected to the environment. Out of school, going on vacations, going to an environment where you are not used to like your house or school, maybe just getting away, going to the beach or the lake or something really helps with connecting.

She recognized the benefits of interacting with the environment and claimed that these interactions could occur at school or outside of school.

In addition, the drawing exercises supported the finding that direct interactions with nature can facilitate relationships. Almost all of the experiences that students depicted of connecting with the environment involved their direct interactions with nature. The few exceptions included the experiences of looking out a car window or airplane window at the view. However, the majority included direct interactions such as swimming in lakes, running on wooded trails, planting flowers, exploring a creek, canoeing on a lake, and climbing a tree. The consistency of this theme across the various data collection methods supports the finding that the

direct interactions with the environment that were part of the curriculum contributed to students' empathy with the environment.

Although direct interactions with the environment have this potential to contribute to empathy with the environment, unfortunately, many of these types of experiences are not traditionally offered as a part of the school day. These experiences often require additional resources as school campuses are typically not designed to facilitate these experiences and transportation of students to more natural areas can be costly. Therefore, many students are left to experience nature outside of the school day. Unfortunately, those who do not have access to natural environments or who have families who do not encourage these experiences are limited in their ability to experience the environment and form connections. Thus, while direct experiences with the environment may require that educators engage in additional planning or use additional resources, these experiences are a critical component in cultivating students' relationships with the natural world and should be included in the curriculum.

In addition to the importance of involving direct experiences with the outside world into the curriculum, a positive learning environment is essential to facilitating learning and empathy with the environment. In this case, the positive relationship between the teacher and students and amongst the students themselves created a positive emotional environment. Opportunities to work with others may have contributed to a positive atmosphere of cooperation and community that may have allowed for further learning and empathy. In addition, the curriculum itself may have contributed to a positive learning environment as it gave students the freedom to make choices and allowed students the agency to initiate change in their communities. Educators must work to cultivate positive spaces for learning. Through these spaces, empathy can flourish.

CHAPTER 9

INDIVIDUAL STUDENT ANALYSES

While an examination of the class as a whole provides an understanding of students' general trends in empathy with the environment, an investigation of select students offers a view of how individual students reacted to the curriculum and how they progressed or regressed in their empathy with the environment. This data on individual students is presented through individual student matrices. These matrices compile key data from both qualitative and quantitative sources to better examine the interaction between the two types of methods and to provide a comprehensive view of students' experiences and growth. In selecting students to examine in greater depth through these matrices, I aimed for students who represented cases of interest, whether in their level of empathy, the nature of their empathy, or their conflicting demonstrations of empathy. Through examining these four individual cases, we gain a more varied and complex picture of students' experiences of empathy with the environment.

Samantha

Samantha was a high-achieving, academically gifted and talented student. She had previous experiences connecting with nature and had many opportunities to do so through traveling, attending nature-oriented summer camps, and participating in her extended family's interests of gardening and farming. She represents a case of interest in that she exhibited high levels of empathy, with others and with the environment, throughout the course. The pre and post results of the drawing exercises and surveys demonstrate that even though she began the course with high levels of empathy with the environment and with an eco-centric orientation, she still made strong gains in both.

In the drawing exercises and corresponding interview, her description of her experiences connecting with the environment indicates a high level of empathy, particularly in her discussion of sitting in the outdoor sanctuary at her summer camp. In her description of connecting with the environment during this experience, she described the engrossing nature of the experience. She detailed how time seemed to slow, her mind was emptied, her inner self “comes in,” and she was filled with peace and serenity. Her inner state during this experience shares similarities with a meditative state, and she even compared it to the experience of a yoga class, an activity associated with peace, relaxation, and meditation. Through this empathetic, meditative experience, she experienced a strong appreciation for nature. She stated, “We really just shouldn’t even belong there because it’s just so incredible.” In addition, she claimed the experience allowed her to find her place in nature. This statement indicates a strong ecological paradigm as she was acknowledging her existence within a complex set of natural systems.

Her survey results also demonstrate her strong ecological paradigm. She began the course with a strong eco-centric orientation as she scored 36, a score 6 points closer to an eco-centric orientation than the neutral score of 30. Her score on the post-survey indicated that she had increased in her pro-environmental orientation. She increased most in her understanding of the significance of the eco-crisis as her mean score on this dimension increased from 1.75 to 4.5. Her visual/verbal journal entry on the landfill fieldtrip indicates her growing awareness of the eco-crisis as she described her realization of the significance of human’s actions toward the environment and the need for environmental action.

Throughout the semester, Samantha consistently exhibited empathy with others and empathy with the environment. Observations and visual/verbal journal entry reviews further support Samantha’s consistency as she helped her fellow classmates, interacted respectfully with

others, and cultivated her plant. While she began the course with already high levels of empathy with the environment and an eco-centric orientation, these levels grew during the class. She notably improved in her understanding of the eco-crisis and the need for action. Her case is somewhat representative of other students in the class including Lindsay and Kalen. These two students also exhibited high levels of empathy in their drawing exercises and interviews and exhibited empathy consistently throughout the semester.

Table 6

Samantha's Matrix

Data Collection Method	Data
Pre drawing written response	“My connection to nature was when I went on a hike at summer camp. We went on a beautiful hike high above the tree line and mountains. The views were magnificent and Kodiak moments. I felt like I was in ‘The Sound of Music.’ I felt completely connected to nature.”
Post drawing written response	“Every year I go to an ‘all girls’ summer camp. The camp is basically all outdoors for 3 weeks. We sleep in wooden cabins with screens and almost all of our activities are outdoors. For the three weeks I’m there being outside all the time really helps me get connected and feel close with my inner self and nature. All over the camp I feel that, but the one place where no one ever is and the peace really enters my body is the sanctuary. Which I’ve drawn on the other side. At the sanctuary the birds chirp and the wind blows and a little sunlight peaks through breaks in the leaves. Serenity fills my body and I feel the peacefulness and true stillness of nature. Which I have discovered is an amazing place humans are lucky to have surrounding them.”
Key interview responses	(recounting the experience of being at the outdoor sanctuary at summer camp): “I would probably start with the serene and calmness of it and how when you just go and sit there you completely—it’s almost like a yoga class. Your mind is emptied and you just feel a rush of just—like your inner self come in, and nature is just all around you. And you might see ants or grasshoppers or insects go by and you just kind of sit and you watch and you watch the wind blow the trees and you watch everything happen around you. And it’s not as if time stops, but it’s as if time is just stilled for a minute so you can really just kind of . . . It’s a really good place to think,

and you can go think about something that has really been on your mind a lot or you can go and think about anything or you can just go clear your head. It's just a really nice place to go, and nature and trees are all around you and it's really, really pretty."

(elaborating on her use of the word "connection"): "Connection as in you just really find your place where you belong in nature and how we really just shouldn't even belong there because it's just so incredible."

Pre survey

Total score: 36

Mean item score per dimension

Rights of nature: 4

Eco-crisis: 1.75

Human exemptionalism: 2.33

Post survey

Total score: 39

Mean item score per dimension

Rights of nature: 4

Eco-crisis: 4.5

Human exemptionalism: 3

Key observations

(when creating planters): Samantha helped Daniel reach his planter on the top shelf on two separate occasions without being asked.

(during a discussion with a guest speaker): Samantha shared that her family is involved in gardening and her grandparents have a farm.

(during individual discussions): Samantha's comments indicate that she has traveled extensively including trips to Paris and Hawaii.

Key visual/verbal journal responses

(plant relationship entry): "My plant and I are very close. Like a mother and daughter. I just keep waiting for her to bloom! haha! I have had to be patient and my plant is gradually growing and becoming a lovely plant."

(special place entry): "The place that I enjoy alone time is at my lake house down by the dock. The peaceful water in the cove just is nice and occasional buzz of a passing boat. It just calms my spirits."

(landfill field trip entry): "I now know how important it is to recycle and take care to conserve the land used building landfills."

Emma

Emma came from a White, middle-class household and made above average grades. She was part of the same friendship group as Samantha. Like Samantha, Emma also exhibited consistently high levels of empathy throughout the semester. However, Emma's case offers a new dimension to examine in the unique nature of her experiences of empathy. While students with high levels of empathy such as Samantha, Lindsay, and Kalen often described the experience of connecting with nature through a semi-meditative state, Emma described a very different experience of empathy. The experience she depicted in her drawing exercises best represents the nature of her experience.

In both her pre and post drawing exercises, Emma depicted a fieldtrip her class took the previous year to a barrier island off the coast of our state and claimed it was the closest she ever felt to the environment. She described in the interview how the trip was geared to instruct students about plant and animal life and to inform them about ways to help the plants and animals. The bulk of this instruction occurred outdoors while on nature walks on the beach and in the woods. She recounted experiencing empathy with the environment while on these walks as she learned more about the life forms and ways that she could care for them. She especially recalled how she learned that waste can find its way to the ocean and harm ocean life such as the soda can rings that strangle turtles. She emphasized how she is troubled by the suffering of other living things, and she does not want to be complicit in their suffering. She claimed, "I never like to see anything suffer," and, "by not recycling you don't want to put it where it can suffer." Thus, her empathy surrounded gaining knowledge of life forms and desiring to avoid harming them.

This experience of empathy differs in that it was not so much directed toward connecting with the natural environment surrounding her but rather toward the mostly unseen animals that inhabited the region. Her visual/verbal journal entry on her special place reflects her connection with animals. She described how she enjoys walking her dog and talking to it. Her relationship toward animals and all living things had a strong emphasis on care—care to avoid harm and unnecessary suffering and care to cultivate growth. During the semester she was very active in caring for her radish plant and indicated her investment in the process. She said, “I keep waiting for my plant to grow. I hope it grows big and will fit in the pot I will make.” She regularly checked on its growth and watered the soil. When the plant died, she replanted the seeds and expressed excitement when she saw a new shoot that had emerged from the soil. Even when this new plant eventually died, she said, “It makes me want to grow more plants and try to learn how to take care of them and learn what they need, where they have to grow.”

In keeping with her desire to care, she often expressed a desire to take environmental action. She particularly emphasized recycling. She brought in old buttons from home for the eco-art project and even encouraged her mom to let her use broken plate pieces for a mosaic instead of discarding them. She identified how the eco-art project repurposed materials and claimed, “I responded to the project by wanting to help the environment more and more.” She also expressed a desire for others to experience the same feelings of care. In the focus group, she said:

I think that it was good to learn about this, especially in art class rather than in—I mean, it’s good to learn about it in Environmental Awareness, but it was really good to learn about it in art because it probably influenced some people who don’t recycle or can’t

recycle. I think that it was good that we learned about it because hopefully it opened people's eyes and makes them want to help and, yeah, take care.

Thus, while Emma's experience of empathizing with the environment was very different from many of her classmates' in that it was less rooted in an all-encompassing, almost spiritual experience of a natural environment, instead, it was rooted in a deep desire to care. Unlike Samantha, who found serenity, fulfillment, and perhaps a new sense of identity through her experience with the environment, Emma experienced empathy for the suffering of other living creatures and in turn desired to initiate change to prevent their further suffering. Such an experience is less contemplative but equally demonstrative of empathy.

Table 7

Emma's Matrix

Data Collection Method	Data
Pre drawing written response	"My school went to [a barrier island] in February of 2011. We walked on beaches, we learned about sea animals, and we learned about the environment."
Post drawing written response	"The most I have ever felt close to nature was when we took a school trip to [a barrier island] in the 6 th grade. We walked along the beaches, took nature walks in the woods, and learned about many animals and there environment. This was the closest I have ever felt to nature."
Key interview responses	<p>(describing a previous fieldtrip to a barrier island): "I really enjoyed it because I learned a lot more, and I gained a lot more knowledge about the earth and the things that live on the earth and how to take care of it. . . . I feel like this trip was really important to me because I love to see ways—I never like to see anything suffer, and I feel like it was a trip that we went on that really put a new perspective on really how important it is to take care of the earth."</p> <p>(responding to a question about her statement on not wanting to see anything suffer): "It's kind of like life. I never like to see anything suffer"</p>

because you don't want to put it—by not recycling you don't want to put it where it can suffer. So like, I never want to see anything—it can be prevented, like an animal dying. It could be prevented. Like, you know the turtles, how they get their necks caught in those, I think it's like the soda cans, you know, you can buy like a pack.”

Pre survey	<p>Total score: 33</p> <p>Mean item score per dimension</p> <p>Rights of nature: 4</p> <p>Eco-crisis: 4.25</p> <p>Human exemptionalism: 1.33</p>
Post survey	<p>Total score of 39</p> <p>Mean item score per dimension</p> <p>Rights of nature: 4.67</p> <p>Eco-crisis: 4.25</p> <p>Human exemptionalism: 2.67</p>
Key observations	<p>(toward the end of the semester): I ran into Emma's mom in the hall. She said that she dropped four plates last night and was about to sweep them up and throw them away when Emma stopped her and told her not to throw them away. She said she could use them in art to make a mosaic.</p> <p>(during eco-art project): Emma brought in buttons to use on her eco-artwork. Her mom stopped by the room to drop off something from the office. I showed her one of the projects the students were working on, and she indicated that Emma had already told her about it.</p>
Key visual/verbal journal responses	<p>(relationship with plant entry): “I keep waiting for my plant to grow. I hope it grows big and will fit in the pot I will make.”</p> <p>(special place entry): “When I want to be alone, I go walk my dog. I like to walk my neighborhood, and I talk to my dog about what happened that day or about my personal problems.”</p> <p>(eco-art project entry): “Our sculpture relates to environmental concerns b/c it is made out of all recycled materials. It was designed to transform into a mouse using recycled materials. [People] might wanted to and understand the importance of the environment. I responded to the project by wanting to help the environment more and more.”</p>
Key focus group responses	<p>(on the discussion of the death of the plants): “It makes me want to grow more plants and try to learn how to take care of them and learn what they need, where they have to grow.”</p>

(when asked if anyone had additional comments): “I think that it was good to learn about this, especially in art class rather than in—I mean, it’s good to learn about it in Environmental Awareness [class], but it was really good to learn about it in art because it probably influenced some people who don’t recycle or can’t recycle. I think that it was good that we learned about it because hopefully it opened people’s eyes and makes them want to help and, yeah, take care.”

Ashley

Ashley came from a White, lower-income household and made above average grades in her other classes. She often interacted in Emma’s and Samantha’s friendship group, although she would occasionally sit by herself or with other students. Unlike Samantha and Emma, Ashley exhibited significantly less empathy with the environment and exhibited the most indifference to the environment out of all of the students in the class. She directly expressed this indifference periodically throughout the semester although this expressed indifference did not appear to negatively affect her motivation toward the activities and assignments. While her empathy with nature appeared to remain fairly low throughout the semester, the survey results indicate that she made a notable gain in her pro-environmental orientation.

Ashley’s indifference to the environment and environmental concerns was most apparent in her periodic, overt statements. It was first evident when she completed the pre drawing exercise. She was having difficulty identifying an experience to draw because she claimed that she had not had an experience of connecting with the natural world. In both pre and post drawing exercises, she chose to draw experiences that occurred in the outdoors but did not represent a real connection with nature. For instance, in the pre drawing she described hiking with friends at a church retreat. She emphasized how she enjoyed talking with her friends but did not enjoy the actual experience of hiking in the woods. In the post drawing, she depicted

floating in her pool while swimming with her family. While she explained that trees were nearby, she declared that she did not consider it an experience of connecting with nature. Rather, it was an experience that occurred in nature but without a connection.

While her visual/verbal journal entries and statements in class occasionally echoed her indifference, she was not reluctant to participate in class activities and assignments, except in replanting seeds. When her radish plant died, she had the option to plant basil seeds to replace the radish, but she declined. In her visual/verbal journal, she stated in relation to her dead plant, “I am not a big fan of plants.” In addition, after the landfill field trip, she wrote that the trip had not influenced her. She wrote, “I don’t really care about Reduce, Reuse, and Recycling things.” Even her depiction of her first memory of nature emphasizes her indifference as she expressed her disinterest in fishing with her father. Despite this disinterest, during the class, she was actively engaged and did not complain or exhibit hesitation in participating. In working on the eco-art project, she even voluntarily brought in materials from home to enhance her project.

While Ashley never identified her reasons for her lack of interest in nature, a few possible factors emerged. First, she lived an inactive lifestyle. She clearly expressed that she does not frequently spend time outdoors. Her lack of time spent in nature is significant given that time spent in nature is positively correlated with connectedness with nature (Karlegger & Cervinka, 2009). In addition, Ashley was open about her disinterest in hiking, and even in discussing swimming in her pool, she emphasized floating and relaxing. When one of our guest speakers briefly discussed obesity trends and their correlation with the rise in automobile-oriented communities, Ashley expressed her resentment of the topic of obesity because of her own struggles with the issue. At the end of the semester once the curriculum had been implemented, the class engaged in a physical activity of choreographing and performing a dance. Ashley

struggled in practicing the dance and often sat down although the rest of her peers did not show any difficulty participating. Her inactivity suggests that she might not have had as many experiences of interacting with nature since she rarely went outside and interacted with it. Therefore, she would have had fewer experiences to bond.

In addition to her inactivity, Ashley strongly emphasized her religious faith and strong participation in church activities much more than her classmates. Her planter was decorated with religious symbols and phrases; a couple of her visual/verbal journal entries were replete with similar symbols, scriptures, and phrases; and she expressed her preference for church activities in her visual/verbal journal and interview. Though her church attendance and religious fervor may not have a direct relationship to interest or disinterest in the environment, it is worth considering because of the negative correlation between religious fundamentalist thought and connectedness with nature (Vess, Arndt, & Cox, 2012).

The pre survey demonstrates that Ashley began the course with an anthropocentric orientation as she scored a 24, with 30 being a neutral orientation. However, when she completed the survey again toward the end of the course, she scored higher with a score of 29, which indicates a neutral orientation. She made the most gains in her belief in the rights of nature. Her mean item score in this dimension improved from 1.75 to 3.67. Thus, while Ashley purported her disinterest in nature and caring for the environment throughout the course, she did exhibit a change in her pro-environmental orientation from an anthropocentric orientation to a more neutral stance. Perhaps, her espoused disinterest in the environment was more out of habit, and did not accurately reflect the nuances in her possibly changing ecological views.

Table 8

Ashley's Matrix

Data Collection Method	Data
Pre drawing written response	<p>“How I have been connected to the natural world. When I felt connected to the world was when I went to the fall retreat with my church. I felt connected to the natural world because myself and three other girls went hiking through the woods. This made me feel connected to the natural world because I was walking through nature.”</p>
Post drawing written response	<p>“The time when I feel connected to nature is when I swim in my swimming pool. I feel connected to nature because I am out side around trees. I like to be out side only to swim in my pool. I don't like to be connected to nature very much. I am happy and excited when I get connected not nature in my pool. I feel relaxed in the nature of my pool.”</p>
Key interview responses	<p>(describing her pre drawing experience): “This is a picture of when I went to something called Fall Retreat with my church. Me and a few other girls went hiking through the woods. It was kind of fun but kind of not fun because I don't really like to hike in the woods. . . . It was fun because I was with my other friends at church, and we were just having fun talking and hiking through the woods during the day and at night. It wasn't that fun because I don't like to hike that much, and it was all gravel land and all hilly so it wasn't really smooth and not easy to walk on.”</p> <p>(describing her post drawing experience): “I swim with my brothers and my mom, and I like to be in the pool so I can relax and not be stressed. And I like to swim because it's really soothing in the summer. . . I feel relaxed because I lay on my float and swim around and get tan. . . . I don't really feel like it's nature when I'm in my pool, but there is nature around me. I don't just like to be outside just anytime, but when I get in my pool, I don't feel connected to nature, but it is nature. . . . I feel relaxed because I'm not doing anything in the pool, and it's just—it feels like you are just sleeping.”</p>
Pre survey	<p>Total score: 24</p> <p>Mean item score per dimension Rights of nature: 1.75 Eco-crisis: 2 Human exemptionalism: 3</p>
Post survey	<p>Total score: 29</p>

Mean item score per dimension

Rights of nature: 3.67

Eco-crisis: 2.25

Human exemptionalism: 3

Key observations (in completing the pre drawing): Ashley asked for clarification of the drawing exercise prompt. I explained that “the natural world” could refer to the environment, land, nature, or outdoors. She responded that she had never felt connected to “any of that.”

(when transplanting the radishes and planting basil seeds after her plant died): Ashley asked if she had to plant something. I told her she did not have to plant anything else. She said that if she planted something it would probably just die.

Key visual/verbal journal responses (first memory of nature entry): “My first memory of nature is when I went fishing with my family. When we went fishing I did not think I would like it. So I told my dad I am not going to fish. But he made me fish. I did not feel good about fishing. It smelt too fishy.”

(relationship with plant entry): “My plant has died but I am not sad because I am not a big fan of plants. I have not watered mine in about a week.”

(landfill fieldtrip entry): “The trip has not affected my attitude about waste. I don’t really care about Reduce, Reuse, and Recycling things.”

Malik

Malik came from an African-American, low-income household. He received failing grades in the majority of his core academic courses; however, he was successful in this course. He represents a case of interest because of the contradictory and inconsistent nature of his experiences of empathy with the environment. Unlike the other three cases, a clear narrative does not emerge. His case represents a more complex portrait of empathy and exhibits some of the difficulties with interpreting these various forms of data. These difficulties were compounded by his reticent demeanor during the interview and focus group and his concise written responses.

The drawing exercises and corresponding interview demonstrate some of the complexities of interpreting Malik's responses. In the drawing exercises, Malik chose to represent ways that he benefitted from the environment rather than a specific time that he formed a connection. For instance, he wrote, "The tree give you shade when it is hot outside. We used it for paper and other things like house and other thing etc." This statement emphasizes how nature can benefit humans and even how it can be exploited. While one could interpret this statement to indicate that Malik only viewed nature in terms of how it can be exploited for his personal benefit, his interview yielded data that problematized this simple interpretation. In his interview, he reiterated some of the benefits of nature but also identified pleasurable moments of experiencing nature firsthand. His description of the trees that provide shade near his house hinted at specific moments of connection. Additionally, he identified a time when he picked pecans with his mom and explained how they took them home to crack and eat. Because he was able to identify moments where he had pleasurable interactions with nature, we may assume that he misunderstood the prompt. However, without additional data, the interpretation is inconclusive.

During classroom activities, Malik was actively engaged and dedicated to his artistic endeavors. His classroom behaviors indicated high levels of empathy with the environment, particularly as he was involved in cultivating a plant. More than any other student, he frequently checked on his plant. He would often approach me as he entered the classroom and ask about his plant. He watered it regularly and was very attentive. While Malik exercised care for the radish plant, he displayed disappointment, along with the majority of the class, with the death of the radish plants. In the focus group toward the end of the course, he identified growing the plant and designing the planter as his least favorite projects because the plant died. His negative

emotions surrounding the experience are unfortunate given that they may predispose him to be less inclined to care for plants in the future. This incident illustrates the importance of facilitative successful interactions with nature so that students develop a sense of efficacy in cultivating plants.

Malik experienced a strong increase in his pro-environmental orientations. He began the course leaning more toward an eco-centric orientation as he scored a 34. However, his post-survey scores show that he increased dramatically in his eco-centric orientation. He scored a 42 toward the end of the course. This score was one of the highest in the class, along with Adam’s, April’s, and Anna’s scores, and indicates a strong ecological paradigm. However, these quantitative results do not easily align with some of the qualitative data. Unlike the survey results, the drawing exercises do not provide evidence of strong ecological attitudes or empathy with the environment. However, the classroom observations support these findings.

Table 9

Malik’s Matrix

Data Collection Method	Data
Pre drawing written response	“What I like about nature is the grass trees and roads. Because if the grass is long, you can hide it when someone is looking for you. The reason I like the trees some have fruit on them. I like roads because I like hearing cars or trucks.”
Post drawing written response	“The tree give you shade when it is hot outside. We used it for paper and other things like house and other thing etc.”
Key interview responses	(in response to questions about his post drawing): “Well, when I go outside, there be a lot of trees where I live so I drew a tree. . . . There’s one in front of my house and some at the park. . . . It gives shade when it’s hot outside. . . . I think the story about trees would be sitting under them and the way I be relaxing.”

(describing his pre drawing): “We were going to the store, and I kept seeing lots of trees and grass so that’s why I drew it.”

(in describing why he likes trees, grass, and roads): “Sometimes me and my mom are walking, and I look at the tree and it got pecans on it because it be farther down. . . . We be going down there to pick some and then go home and crack and eat them.”

Pre survey

Total score: 34

Mean item score per dimension

Rights of nature: 5

Eco-crisis: 4

Human exemptionalism: 3

Post survey

Total score: 42

Mean item score per dimension

Rights of nature: 5

Eco-crisis: 5

Human exemptionalism: 2.33

Key observations

(in cultivating the radish plant): Malik regularly asked to check on his plant and watered it when needed.

(during the nature drawing): Malik went outside a few times to find additional items to draw. He decided to draw dandelions.

Key visual/verbal journal responses

(special place entry): “My favorite place to go is to Florida to visit my uncle. It make me feel happy and the family is safe.”

(future of place entry): “It is quiet and have trees. Everyone love to eat there on their work break.”

Key focus group responses

(when asked about a time he felt connected to the environment): “I went to the landfill. . . . I learned that they use stuff over, they use left over stuff. . . . They had cookouts. . . . They kept on putting different stuff in different bins—the wood and stuff.”

(in response to a question about his least favorite project): “The plant. . . because mine wasn’t growing.”

Conclusion

These four students' experiences in the course exemplify some of the range of student responses to the curriculum and the diversity of students' demonstrations of empathy with the environment. Samantha and Emma both exhibited empathy with the environment consistently throughout the semester and often demonstrated high levels of empathy. However, they differed in the nature of their empathy as Samantha described a contemplative, almost spiritual experience with nature; whereas, Emma illustrated empathy rooted in care for the well-being of other living things. Ashley represents a contrasting narrative through her statements of indifference toward the natural world. Malik's data shows the occasional contradictions between different forms of data and the complexities regarding interpreting experiences of empathy. These four individual profiles complement the analysis of general class trends from the previous chapter as they offer a more complex, detailed portrait of student responses to the curriculum.

CHAPTER 10

CONCLUSIONS

As a mixed methods case study, this study employed both quantitative and qualitative methods to examine the two related phenomena, students' empathy with the environment and pro-environmental orientations. Both types of methods offered different perspectives into students' experiences throughout their participation in the curriculum. Although the different data collection methods often provided complex portraits of students' experiences, the overall data collection consistently demonstrated that the curriculum was effective. Students exhibited empathy with the environment as they participated in the class and showed increased levels of empathy with the environment and stronger pro-environmental orientations as a result of the curriculum. The findings regarding the effectiveness of the curriculum with this class offer insight into how education, and especially art education, can be responsive to ecological concerns.

The Research Questions

The last five chapters aimed to answer the following questions: How do middle school students demonstrate empathy with the environment throughout their participation in a critical place-based art education program? How does participation in a critical place-based art education program affect students' pro-environmental orientations (ecological paradigm)? Which aspects of a critical place-based art education program, if any, contribute to students' empathy with the environment? Why? Key findings included:

- Students' empathy with the environment increased, in the amount of students who displayed empathy and in the level of empathy students displayed, from the beginning of the program to the end.

- Students' experiences of empathy with the environment included the themes of engaging in leisure activities, sensing nature, appreciating the beauty of nature, changing emotions, and becoming one with nature. The theme that most indicated empathy with the environment, becoming one with nature, was only found in students' post responses. Its presence only in the post responses indicates students' growth in empathy with the environment.
- Students demonstrated empathy with the environment throughout the program as they cared for nature, developed awareness for the environment, and accepted responsibility for the environment through their lifestyles and artwork.
 - Students' care for nature was inconsistent and closely tied to their success in cultivating plants.
- Students' pro-environmental orientations increased from a slightly eco-centric orientation to a stronger eco-centric orientation. These gains were statistically significant.
 - Students showed strong gains in their understanding of the eco-crisis and their belief in the rights of nature. These gains were statistically significant.
 - Students only showed a slight increase in their belief in human exemptionalism. This increase was not statistically significant.
- The curriculum contributed to students' empathy with the environment as it provided opportunities to experience the world directly, to care for nature, to affect environmental change, and for curricular choices. Additionally, the social dynamics of the class and the teacher's investment helped facilitate this empathy.

- Students preferred the transformation unit, in which they visited a landfill and created eco-artworks, the most and reported experiencing the strongest connection with nature during this time.

Overall, these findings demonstrate that students were strongly impacted by the critical place-based art curriculum in their empathy with the environment and in their pro-environmental orientations. This conclusion is strongly supported by data from a variety of data collection methods including both quantitative and qualitative.

Implications

These findings have implications for education. First, students' experiences of connecting to the environment provide insight into the nature of their empathy. Students' descriptions of sensing nature, appreciating it, and allowing it to influence their emotions suggest the empathetic nature of their experiences with the environment. In addition, students' accounts of becoming one with nature reveal a strong empathetic connection between students and nature. These experiences demonstrate that middle school students are capable of deeply empathizing with the environment. Cheng and Monroe's (2012) study supports this conclusion. They found that a sense of oneness with nature is one way that children feel connected with the environment. This theme's presence only in the post responses suggests that the curriculum contributed to the depth of students' empathy and offers hope that educational interventions can facilitate these experiences.

In addition to the data on students' experiences of empathy, the data on students' pro-environmental orientations offers insight into the role that curricula can play in impacting students. The pre and post survey data revealed that students made a statistically significant increase in their pro-environmental orientations, from a slightly eco-centric orientation to a

stronger eco-centric orientation. Students moved more toward an ecological paradigm as a result of the course. This significant change in students' pro-environmental orientations demonstrates the potential power of educational curricula in impacting students' beliefs and paradigms. Students' change in pro-environmental orientation is especially significant when one considers that ecological attitudes are a strong predictor of environmental behavior (Kaiser, Wolfing, & Fuhrer, 2011). Perhaps, after experiencing a change in their pro-environmental orientations, students will be more likely to engage in ecological behaviors in the future.

This potential power of educational interventions, in particular a critical place-based art education curriculum, can provide encouragement to teachers in the potential value of their role as a teacher and their curricular choices. This knowledge can contribute to teacher efficacy, especially in helping students' cultivate ecological attitudes. Research shows that teacher efficacy is important for teachers to persist in interventions despite difficult challenges (Woolfolk Hoy, & Davis, 2006). Learning of students' increase in pro-environmental orientations is capable of boosting teacher efficacy as teachers embark on quests to cultivate ecological paradigms. As a teacher, my own motivation has been strengthened after analyzing these results.

As educators seek to develop and implement ecologically-responsive curricula, the components of the curriculum that contributed to students' empathy with the environment could be important to incorporate. These contributors include opportunities to experience the world directly, to care for nature, to affect change, and to make curricular choices. In addition, the teacher's investment and social dynamics of the class facilitated students' empathy with the environment. While the curriculum was designed for a particular group of students in a particular location and students' responses may differ according to the case, these aspects of the

curriculum in this case may be important in other contexts as well, particularly as many of these contributors are supported as best practices by the body of educational research.

In providing opportunities for students to exercise care, educators must endeavor to promote students' self-efficacy for caring. Unfortunately in this study, many students' interest in caring declined as the health of their plant declined. They expressed disappointment, frustration, and guilt in their inability to effectively care for their plant. Ashley's response in particular demonstrated her lack of self-efficacy as she expressed a disinterest in growing another plant because she assumed it would die like the others. Research shows that perceived self-efficacy predicts students' interest in environmentally-friendly practices (Cheng & Monroe, 2012; Meinhold & Malkus, 2005). Thus, if students feel that they are competent in caring for plants, they are more likely to choose to care for plants. Cheng and Monroe (2012) recommended that education provide students with opportunities to increase their environmental knowledge and skills in order to promote pro-environmental actions. Educators must endeavor to facilitate successful caring interactions in order to promote self-efficacy, which can contribute to further environmentally-friendly behaviors. This self-efficacy is also particularly important given that it is also a strong predictor of a connection to nature, which suggests that students' belief that they can help the environment influences their further development of a connection to nature (Cheng & Monroe, 2012). Therefore, through learning to care successfully for nature, students can increase their self-efficacy, which can lead to further exercises of care and further connection to nature.

The strong impact of the transformation unit offers implications for future curriculum design. Students experienced the most change in ecological attitudes during this unit and reported preferring this unit the most. In particular, students identified the field trip to the

landfill and the eco-art project as significant. This unit was designed as a culminating unit as it was the most explicitly ecological and built upon the concepts from the previous units. This unit, more so than the others, asked students to act to affect ecological change. Because this unit proved to be so valuable, one might consider that perhaps the entire curriculum should be more focused on ecological change. However, my own findings indicate that the previous units were beneficial in facilitating students' empathy with the environment, and theory suggests that students should form a relationship with the local environment first before being asked to protect it. Although these early units on establishing relationships were important, perhaps the time necessary to develop this relationship could have been shortened to allow more time for students to act for change, since this opportunity was so valuable to students.

The overall findings of this study suggest that a critical place-based art education curriculum can be effective with a wide range of students and populations. Since the study was designed as a case study, the participants were not intended to be representative of the general population. However, a range of students were represented. While the participants were all approximately the same age and from the same geographical area, they varied in terms of gender, race, achievement level, and socio-economic status. The intervention was effective across this range of students. The widespread success of the curriculum suggests that it could be effective with a range of populations. The body of research on place-based education supports this possibility as it demonstrates that a place-based curricular approach is effective in changing ecological attitudes in a variety of geographic locations and with a range of populations, regardless of race, achievement, or age.

Recommendations for Future Research

While this study offers implications for the field of education and art education, it also suggests places for future research. First, research should be conducted with other populations including students of other ages, races, and from other geographical areas. This study was conducted with middle school students, and Creel (2005) conducted a similar study with elementary school students. Research is needed with older students such as high school students. Additionally, the students in this case were White and African-American. More research is needed with classes of different racial compositions. Indigenous populations might be especially important to study within the field of art education since the body of research on place-based education demonstrates that place-based education can be especially effective with these populations (Takano, Higgins, & McLaughlin, 2009). Also, this study was conducted in a suburban school in the southeastern United States. Studies conducted with urban populations could provide an understanding of this educational approach's impact on students in urban areas as well as insight into the complexities of implementing this curricular approach in urban schools. In addition to studies focused on other populations, studies with larger samples could provide more transferability as well as provide data on the effectiveness of this curricular approach with various subgroups.

In addition, longitudinal studies are needed to determine the long-term impact of a critical place-based art education curriculum. A study with a similar design to this study could be conducted with a longitudinal component where the NEP scale could be administered again to students at six months and a year after the program. Also, another study could be conducted to determine if longer exposure to a critical place-based art education curriculum would contribute to stronger empathy with the environment and increased pro-environmental orientations. This

study could follow students who enroll in all three years of the program throughout their time in middle school and could even follow-up with the NEP scale throughout their time in high school to determine the long-term impact of the program. These studies could further explore the potential of a critical place-based art education curriculum.

Limitations

This study has limitations that should be considered in determining the validity and transferability of the results. Since this study was designed as a case study, the results are not intended to be representative of the general population. In particular, the class was atypical in its high representation of female students and academically gifted and talented students. Since girls have more pro-environmental worldviews than boys (Gifford et al., 1983; Schahn & Holzer, 1990; as cited in Boeve-de-Pauw, Donche, and Petegem (2000), this overrepresentation of girls is a significant factor to consider when determining the transferability of the results to other populations. Because of its case study design, the reader must study the characteristics of the case and determine its transferability to their own context.

In addition, its design as teacher research is a significant component of the case. As a teacher researcher, I was highly invested in the process. This investment could have translated into higher quality instruction, more individual attention, additional care for students, and attentive planning, which could have contributed to more positive results than might have occurred in a typical classroom. In addition, my role as teacher might have contributed to students' positive responses as they might have endeavored to provide the response they assumed I wanted. However, in many cases students provided responses that appeared very open and honest. For instance, Ashley was clear throughout the course that she had no interest in

plants, recycling, or nature. In addition, I endeavored to promote an accepting environment that encouraged honest responses.

The resources available in this case demonstrate both the limitations in implementing the curriculum as well as the possible limitations for generalizing the results to other context. This case occurred at a school with adequate resources for traditional art education activities and that was able to allocate some additional resources to implement the new curriculum. These additional financial resources included funds for the fieldtrip bus and for materials related to growing the radish plants. In addition, the school campus allowed for outdoor interactions because of its wooded trails, landscaped courtyards, and patio adjoining the art room. While these resources are not excessive, they did facilitate important curricular activities including the nature walk, drawing in the courtyard, growing plants, and the landfill fieldtrip. Without these resources, which allowed for these activities, the curriculum would not have been as effective. For schools with limited financial resources and outdoor natural spaces, educators might struggle to implement similar curricula, and, thus, struggle to obtain similar results. For those schools with more plentiful resources than those in this study, educators might be able to facilitate more interactions with the community and environment, which might further strengthen students' empathy with the environment.

Conclusion

At the conclusion of the focus group, Emma stated:

I think that it was good to learn about this, especially in art class rather than in—I mean, it's good to learn about it in Environmental Awareness, but it was really good to learn about it in art because it probably influenced some people who don't recycle or can't recycle. I think that it was good that we learned about it because hopefully it opened

people's eyes and makes them want to help and, yeah, take care.

Emma valued how the curriculum was capable of helping students to develop awareness, to care, and to take action. She realized the need for this curriculum in art classrooms in order for it reach not just those students who are already concerned for the environment, such as those who might choose to enroll in an environmental awareness class, but also to reach other populations. She might also have recognized how art education is particularly positioned to address these issues and to cultivate connections.

Art education is suited to cultivate empathy, first because of the link between aesthetic experience and empathy. While the term empathy has traditionally been linked to aesthetic experience (Franklin, 1990), recent neurological and psychological research can now explain the mechanics of how empathy initially occurs during an aesthetic encounter (Freedberg & Gallese, 2007). Through a process of physical and emotional mimicry, a viewer empathizes with a work of art. Though this embodied empathy during an aesthetic experience may be a quick, initial response to a work of art, it can become a springboard for further expansion and development.

Phillips (2003) described how empathy entails both identification and imagination. Identification involves using our perception to identify the inner state of another. Imagination allows us this perception of another to become our own inner reality. Then once we have experienced this state, we have the choice to act with or without care. The art classroom provides a range of opportunities to develop each of these stages of empathy. Through aesthetic encounters with works of art, through related dialogues, and through artmaking experiences, art education is capable of training perception, nurturing the imagination, and facilitating reflection on connections and relationships. Riddett-Moore (2009) explained, "When we teach students to

slow down, look, feel, think, and then act, we are assisting them in developing a sensitivity that helps them empathize and care” (p. 13).

As art education cultivates empathy, it can respond to the global ecological crisis. This study demonstrated that a critical place-based art education curriculum is capable of promoting empathy with the environment—an important capacity that allows for the dissolution of arbitrary boundaries between humans and other living things, an expansion of consciousness for other life forms, the development of care, and the tendency to act for ecological change. Herron (2009) offered insight into how art education is uniquely suited for helping students develop empathy with the environment. She claimed:

Whether we create art or are its audience, art carries us into deeper awareness and compassion. . . . Through art we feel our way toward an extended empathy that includes not only people but also the earth and other species. With the full extension of that larger identity, it becomes possible to imagine a sustainable world, one in which we see ourselves as interdependent in a nonhierarchical web of living systems, each essential for the survival of all. (p. 121)

Art educators should embrace this capacity of art to facilitate empathy, particularly empathy with the environment so that students have the opportunity to develop an extended empathy. Through this extended empathy, students are capable of pushing past dominant anthropocentric philosophies and paradigms to embrace an ecological paradigm—a necessary paradigm for sustained ecological change to occur. A critical place-based art curriculum offers fertile ground for empathy to grow.

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Appendix A: Drawing and Writing Prompt

Name _____ Date _____

In the space below, create a drawing of a time when you felt connected to the natural world. (See the back of this sheet for further instructions.)

Appendix B: Interview Guide

You have been invited to participate in a research project through the University of Georgia. The reason for the research is to investigate how middle school students within a place-based art education program experience a relationship with the environment.

The results of this participation will be confidential, and will not be released in any individually identifiable form without the prior consent of you and your parent/guardian, unless otherwise required by law. For example, I cannot keep information confidential if it indicates child abuse/neglect or plans to harm oneself or others. The interviews will be audiotaped. The tapes will be transcribed, and your words may be quoted. If so, a different name will be used to ensure that you cannot be identified in any way.

For this project, you will participate in an interview on your experiences with the environment, which will last approximately half an hour.

For this project, I will interview you on your experiences with the environment for approximately half an hour.

You are free to stop the interview and withdraw your participation at any time should you become uncomfortable with it. I hope you will enjoy this opportunity to share your experiences and viewpoints with us.

Do you have any questions?

Do you agree to participate in this study? _____

Okay. May I begin recording? _____

Building Rapport:

I appreciate your help with this interview. I know that we have gotten to know each other during this semester, and we may have talked about some of these things before. But during this interview feel free to tell me things that you might have mentioned before. Also, feel free to talk in as much detail as you can.

Primary Questions

1. For the drawing exercise, you were instructed to draw a time you felt connected to the natural world. This is your drawing (show the student the drawing). Tell me about this drawing in as much detail as you can.

2. If you were going to write a story about this experience, how would it go?

Recommended Format for Probing Questions

1. You mentioned _____. Tell me more about that.
2. You mentioned _____. What was that like for you?
3. You mentioned that you _____. Walk me through what that was like for you.

Appendix C: Focus Group Guide

You have been invited to participate in a research project through the University of Georgia. The reason for the research is to investigate how middle school students within a place-based art education program experience a relationship with the environment.

The results of this participation will be confidential, and will not be released in any individually identifiable form without the prior consent of you and your parent/guardian, unless otherwise required by law. For example, I cannot keep information confidential if it indicates child abuse/neglect or plans to harm oneself or others. The interviews will be audiotaped. The tapes will be transcribed, and your words may be quoted. If so, a different name will be used to ensure that you cannot be identified in any way.

For this project, you will participate in a group discussion, called a focus group, on your experiences with the environment, which will last approximately an hour. For this project, I will facilitate as you discuss your experiences with the environment for approximately an hour. You are free to stop discussing and withdraw your participation at any time should you become uncomfortable with it. I hope you will enjoy this opportunity to share your experiences and viewpoints with us.

Do you have any questions?

Do you agree to participate in this group discussion? _____

Okay. May I begin recording? _____

Building Rapport

I appreciate your help with this interview. Because this discussion will be audiotaped, I would appreciate it if we could try to talk one at a time. That will make things easier for me later when I listen to the tape.

Before we start, I would just like to say that I know that we have really gotten to know each other during this semester, and we may have talked about some of these topics before. But during this discussion feel free to tell me things that you might have mentioned before. Just remember that because this is a group setting, I cannot promise that someone else will not repeat the details of what you share in this discussion. Therefore, I recommend that you only share things that you would feel comfortable telling an acquaintance.

Introductions

1. Now I know that we all know each other, but just to break the ice, can everyone go around and tell us your name and one fun thing you did last weekend?

Primary Questions

3. Think of a time when you felt connected to the environment during this class. Tell me about that in as much detail as possible.
4. What helped you develop that connection with the environment?
5. If you had to choose one project that really helped you connect with the environment, which one would you choose? Why?
6. Which project was not as helpful in helping you connect with the environment? Why?

Clarifying Questions and Transition Statements

4. When you say _____, do you mean?
5. You talked about _____. Does anyone have an example of that?
6. Does anyone have any other stories about _____ that you would like to share?
7. We've heard _____, what are other views on that?

Summarizing Statements and Closing Questions

1. Now just to sum up what you've said. What I've heard is _____. Is there anything you'd like to add to that?
2. Are there any questions that I haven't asked that we should have talked about?

Appendix D: Visual/Verbal Journal Prompts

Harmony Unit

Experiment with different media focusing on the elements of design. Reflect on your learning in your journal.

How would you like to use your journal this semester? Which media do you plan to use?

What is harmony (in your own words)? What things can be in harmony with each other?

What is your first memory of nature? How did you feel?

Which ideas do you want to communicate about nature in your drawings? Which style will you use to help you communicate your ideas?

Experiment with different techniques with pastels as well as any other media you might want to use in your drawing.

How does your drawing exhibit harmony?

How does harmony relate to the life and art of Dave the Potter? Where is a lack of harmony?

Describe your relationship with the radish plant you planted a few weeks ago.

Write a few lines of poetry responding to your plant.

How does your planter exhibit harmony?

Place Unit

What is place?

Where is your favorite place to go to when you want to be alone? How do you feel when you are there?

Reflect on what you learned about painting today. Describe the style you plan to use in your painting of a special place.

Describe your chosen place. How do you feel about it?

How has your chosen place been treated? How do you see the future of your place? Why? How would you like to see the future of your place?

How can value enhance your drawing of a place?

Describe your relationship with place.

Transformation Unit

List what you learned on the field trip. Did the trip change your thinking about waste? If so, how?

How can art transform? How will you use art to transform? How can you use untraditional materials to help you with this?

Which materials did you find most promising for an eco-artwork? How might you use them?

How is your group's artwork designed to be transformative?

How do you think people will respond to your eco-art work? How do you respond to it?

Appendix E: Survey Instrument

Name _____

Period _____

Date _____

10-Item New Ecological Paradigm Scale for Children

Listed below are statements about the relationship between humans and the environment. For each one, please indicate whether you **STRONGLY AGREE**, **MILDLY AGREE**, are **UNSURE**, **MILDLY DISAGREE**, or **STRONGLY DISAGREE** with it.

DO YOU AGREE OR DISAGREE THAT:	SA	MA	UN	MD	SD
1. Plants and animals have as much right as people to live.					
2. There are too many (or almost too many) people on earth.					
3. People are clever enough to keep from ruining the earth.					
4. People must still obey the laws of nature.					
5. When people mess with nature it has bad results.					
6. Nature is strong enough to handle the bad effects of our modern lifestyle.					
7. People are supposed to rule over the rest of nature.					
8. People are treating nature badly.					
9. People will someday know enough about how nature works to be able to control it.					
10. If things don't change, we will have a big disaster in the environment soon.					

SA=Strongly Agree, MA=Mildly Agree, U=Unsure, MD=Mildly Disagree, and SD=Strongly Disagree

Appendix F: Curriculum Outline

Big Idea	Understandings	Essential Questions	SC State Standards (Grade 7)	Projects	Elements & Principles of Design	Techniques	Artists
Harmony	Art can communicate harmony	How can art communicate harmony?	1.1-1.4, 2.1-2.3 4.1-4.3 5.1-5.3 6.1	Nature drawings	Line Shape Space	Contour line drawing Gestural line drawing	William Bartram
	Elements & principles of design harmonize with ideas Artists empathize with their subjects Craftsmanship is care	How can elements & principles of design harmonize with ideas? How do artists empathize and care?		Planters	Form Proportion	Coil Method (scoring & using slip) Incising Applique Pulling handles	Dave the Potter
Place	Art can communicate ideas about place	How can art represent feelings for a place?	2.1-2.2 3.1-3.4 5.1, 5.3	Special place painting	Color Variety	Mixing color Painting techniques	Isabel Forbes
	Art can envision alternate realities	How can art envision alternate realities?		Futuristic landscape drawing	Space Value Emphasis	One-point linear perspective	Alexis Rockman

Transformation	<p>Art can respond to social and ecological issues</p> <p>Art has the power to transform materials, spaces, attitudes, and communities.</p> <p>Artists can be inventive with materials. Almost any material can be used to create art.</p>	<p>How can art respond to social and ecological issues?</p> <p>How can art be transformative?</p>	<p>1.1-1.3 2.1-2.2 5.1 6.2</p>	Eco-art	<p>Unity Balance</p>	Found object techniques	Steven Siegel
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Appendix G: Unit Plans

Unit/Lesson Plan Form for Art Education

Unit/Lesson Title/Theme: Harmony

Grade Level: 7

Teacher: Bertling

Unit/Lesson Overview

- I. To prepare students for this unit on harmony, students will review the elements of design, consider the possibilities for visual/verbal journals, and explore various media.
- II. In this unit, students will first learn about the life of William Bartram and will study his natural history illustrations. We will discuss the importance of observation in studying and drawing plant life both in science and in art. Then we will learn how to draw from observation using contour lines and gestural lines. Students will practice these two drawing methods while sketching plant life outside. In addition, a guest speaker from the local gardening club who teaches adult drawing classes in the community on drawing plants will come work with students to help them draw plants. Next, students will go on a nature walk and bring natural objects back to the classroom to draw. For this project students will be able to choose the natural object(s) they will draw, the type of drawing technique they will use, and the art media they will use. Last, students will critique their drawings as a class.
- III. For the next section of the unit, students will study the pottery and poetry of Dave the Potter, a slave potter from the Edgefield Pottery District of South Carolina. Students will cultivate radish plants from seeds and then design a ceramic planter specifically designed to house the radish plant they are growing. They will use the coil method to create the planter and then will glaze it after it is bisque fired. Last, students will transplant their radishes into the planters and critique their planters as a class.

Rationale: This unit includes natural history illustrations as well as cultural journalism, two components that Graham (2007) recommended for a critical place-based art pedagogy. Growing plants and drawing them, through natural history illustrations, is a way for students to become more closely acquainted with nature. Learning about a local art form, through cultural journalism, is a way for students to develop pride in their communities.

Place-Based Components: studying local artists, bringing in a guest speaker, studying a local art form (Edgefield pottery), studying and growing plant life, discovering connections

Established Goals

SC Visual Art Academic Standards (2010)

Standard 1: The student will demonstrate competence in the use of ideas, materials, techniques, and processes in the creation of works of visual art.

Indicators

VA7-1.1 Identify the materials, techniques, and processes used in a variety of artworks.

VA7-1.2 Describe the ways that different materials, techniques, and processes evoke different responses in one who is creating or viewing artworks.

VA7-1.3 Select and apply the most effective materials, techniques, and processes to communicate his or her experiences and ideas through the artworks.

VA7-1.4 Use art materials and tools in a safe and responsible manner.

Standard 2: The student will use composition and the elements and principles of design to communicate ideas.

Indicators

VA7-2.3 Select the elements and principles of design to create artworks with a personal meaning.

Standard 4: The student will understand the visual arts in relation to history and world cultures and the technologies, tools, and materials used by artists.

Indicators

VA7-4.1 Identify artworks from various cultures and recognize ways in which those works were influenced by man-made and natural factors.

VA7-4.2 Discuss and write about the ways that time, location, climate, resources, ideas, and technology give meaning and value to an artwork.

VA7-4.3 Demonstrate visual literacy by deconstructing works of visual art to identify and discuss the elements and principles of design that are used in them.

Standard 5: The student will analyze and assess the characteristics and qualities of his or her own works of visual art and those of others.

Indicators

VA7-5.1 Compare various purposes for the creation of works of visual art.

VA7-5.2 Describe, discuss, and evaluate, both orally and in writing, the different qualities and characteristics of his or her own artworks and those of others, including works by South Carolina artists.

VA7-5.3 Maintain a portfolio of his or her artworks.

Standard 6: The student will make connections between the visual arts and other arts disciplines, other content areas, and the world.

Indicators

VA7-6.1 Analyze the similarities and differences between the visual arts and other arts disciplines.

Understandings

Art can communicate harmony

Elements and principles of design harmonize with ideas

Artists empathize with their subjects

Craftsmanship is care

Essential Questions

How can art communicate harmony?

How can elements and principles of design harmonize with ideas?

How do various art techniques harmonize with ideas?

How do artists empathize and care?

What will students understand as a result of this unit/lesson?

Students will need to know . . .

Elements and principles of design

Coil method

Scoring and using slip

Incising

Applique

Modeling

Pulling a handle

Contour line

Gestural line

Characteristics of Bartram's and Dave the Potter's art

Journals can be a form of art

Science and art share some similarities

Elements and principles of design can express ideas

Art can be influenced by cultural and natural factors

People create art for various purposes

Students will be able to . . .

1. Identify the materials, techniques, and processes used in drawings and coil method pottery.
2. Describe the ways that different drawing techniques evoke different responses in the viewer.
3. Discuss how Bartram's use of elements and principles of design expresses his ideas.
4. Identify Edgefield pottery and recognize ways it was influenced by cultural and natural factors.
5. Compare various purposes for creating drawings of natural objects.
6. Select and apply different materials, techniques, and processes to create a drawing and a ceramic vessel.
7. Select and apply different elements and principles of design to create a drawing and a ceramic vessel.

	<ol style="list-style-type: none"> 8. Describe, discuss, and evaluate the different qualities and characteristics of his/her own artworks and those of other artists through a class critique. 9. Analyze similarities and differences between visual art and the natural sciences. 10. Maintain a portfolio and visual/verbal journal.
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Performance Tasks, Projects

<p>Visual/verbal journal</p> <p>Nature drawings</p> <p>Ceramic planter</p>
--

Other Evidence; observations, work samples, student self-assessment.

<p>Observations</p> <p>Student visual/verbal journal entries</p> <p>Student written self-assessment</p>

Performance Criteria

<p>Analytic rubrics (projects)</p> <p>Holistic rubric (visual/verbal journals)</p> <p>Checklist (critiques)</p>

Visual/Verbal Journal Prompts

<p>Experiment with different media focusing on the elements of design. Reflect on your learning in your journal.</p> <p>How would you like to use your journal this semester? Which media do you plan to use?</p> <p>What is harmony? What things can be in harmony with each other?</p>
--

What is your first memory of nature? How did you feel?

Which ideas do you want to communicate about nature in your drawings? Which style will you use to help you communicate your ideas?

Experiment with different techniques with pastels as well as any other media you might want to use in your drawing.

How does your drawing exhibit harmony?

How does harmony relate to the life and art of Dave the Potter? Where is a lack of harmony?

Describe your relationship with the radish plant you planted a few weeks ago.

Write a few lines of poetry responding to your plant.

How does your planter exhibit harmony?

Learning Activities

Section I

Lesson 1: Elements and Principles of Design (3 class periods)

1. Hook: “The elements of design are all around us. Today we are going to review what you already know about the elements of design and learn more about them.”
2. Assign students to groups to create a KWL about the elements of design. Have each element and principle listed on the board.
3. Ask groups to share a few points from their KWL with the class and use this to create a class KWL.
4. Present a PowerPoint presentation briefly reviewing the elements of design and ask students to take notes.
5. Ask each group to choose an element and principle of design, research the element and principle using textbooks and online resources, and create a poster.
6. Ask groups to present their posters to the class.
7. Review the group KWLs and discuss their learning.

Lesson 2: Experimenting with Media and Elements of Design (1 class period)

1. Hook: Tell students, “It’s experimental Friday! Today we are going to learn how artists experiment.”
2. Discuss experimentation in art.
3. Demonstrate different techniques with pastels, charcoal, and watercolors.
4. Visual/verbal journal assignment: “Experiment with different media focusing on the elements of design. Reflect on your learning in your journal.”
5. Ask for volunteers to share their visual/verbal journals with the class.

Lesson 3: Visual/Verbal Journals (1 class period)

1. Hook: "Today we are going to begin using our visual/verbal journals."
2. Introduce students to the idea of a visual/verbal journal.
3. Show students examples of visual/verbal journal entries.
4. As a class, brainstorm different techniques that could be used in journals.
5. Discuss how collage is one technique that can be used in journals.
6. Visual/verbal journal assignment: "How would you like to use your journal this semester? Which media do you plan to use?" Encourage students to experiment with collage.
7. Ask for volunteers to share their journal entries with the class.

Section II

Lesson 1: William Bartram and Nature Studies (2 class periods)

1. Hook: "Today we are going to learn about an artist who used art in his explorations."
2. Show an educational video segment on American naturalists.
3. Show a PowerPoint presentation on William Bartram. Lead a discussion on Bartram's life and purposes for his art, writings, and journeys.
4. Read the section on nature studies (p. 114) in the *Introducing Art* textbook.
5. Divide students into groups to complete a Venn diagram comparing and contrasting studying nature in art and studying nature in science. Ask groups to share in order to create one large class diagram. Emphasize how observation is important in both art and science.
6. Write several definitions for harmony on the board. Discuss the connection between Bartram's works and harmony.
7. Visual/verbal journal assignment: "What is harmony (in your own words)? What things can be in harmony with each other?"

Lesson 2: Plant Life (1 class period)

1. Hook: Share your first memory of nature and what the experience was like.
2. Visual/verbal journal assignment: "What is your first memory of nature? How did you feel?"
3. Explain that we will be growing radishes over the next few weeks. Have students come in groups to a planting station where they can add soil to a container, plant radish seeds in the soil, and water it. Place the containers near the window so that they plants will have enough sunlight to grow.
4. Invite students to share their journal entries with the class.

Lesson 3: Contour Line Drawings (2 class periods)

1. Hook: Show students a simple object, have them draw it in 30 seconds, and then discuss the different ways people drew it. "Today we are going to learn one way of drawing."
2. Review the PowerPoint presentation of William Bartram's drawings. Discuss his use of contour lines and show more modern examples as well.
3. Demonstrate how to draw an object using contour lines.
4. Provide each table with an object to draw using contour lines. Rotate the objects among the tables every 5-10 minutes.

5. Take the class outside with their visual/verbal journals and have them draw various natural objects using contour lines. Give advice and answer questions as students draw.

Lesson 4: Gestural Line Drawings (2 class periods)

1. Hook: Using the LCD projector, show students a photo changed by Photoshop filters. Ask students, “How does the filter changed how you see the world?” Discuss how artists use different ways to represent the world for different reasons.
2. Show a PowerPoint presentation on gestural line drawing. Discuss the characteristics of gestural line drawings.
3. Demonstrate how to draw an object using gestural lines.
4. Lead students in practicing drawing various objects with gestural lines.
5. Take the class outside with their visual/verbal journals and have them draw various natural objects using gestural lines. Also, ask them to bring in natural objects to draw for their upcoming project. Give students advice on their drawings and answer questions.

Lesson 5: Drawing Nature (1 class period)

1. Hook: “Today we have a visitor who is here to work with us on drawing plants.”
2. Allow the guest speaker to introduce himself and show examples of his drawings of nature.
3. Assist the guest speaker as he advises students on drawing plants. Provide native plants for students to draw.

Lesson 6: Nature Drawing Projects (8 class periods)

1. Hook: “Did you know that art can communicate ideas?”
2. Discuss how artists use elements and principles of design, how this constitutes their style, and how this can communicate meaning. Provide images of a variety of artists’ works.
3. Visual/verbal journal assignment: “Which ideas do you want to communicate in your drawing? Which style will you use to help you communicate these ideas?”
4. Ask students to create thumbnail sketches for a drawing or painting of natural objects.
5. Pair students to provide each other feedback on their thumbnail sketches. Conference with individual students about their sketches.
6. Demonstrate techniques for using oil and chalk pastels.
7. Visual/verbal journal assignment: “Experiment with different techniques with pastels as well as any other media you might want to use in your drawing.”
8. Invite students to share with the class how they intend to use art media to communicate meaning in their artwork.
9. Provide art materials and advice as students create their drawings and paintings.

Lesson 7: Critique (1 class period)

1. Hook: “Today you will have the opportunity to present your drawings to the class and receive feedback from your classmates.”
2. Facilitate a class critique of students’ drawing and paintings. Encourage students to describe, analyze, interpret, and evaluate each other’s drawings. Especially encourage students to discuss how the elements of design and the techniques they used align with

the ideas they were trying to communicate.

3. Visual/verbal journal assignment: "How does your artwork exhibit harmony?"

Section III

Lesson 1: Dave the Potter (1 class period)

1. Hook: "Today we are going to learn about an artist who found a way to express himself even in difficult circumstances."
2. Present a PowerPoint presentation on Dave the Potter's life and art (including his poetry).
3. Discuss Edgefield pottery and make connections with local groups of potters. Discuss ways that Edgefield pottery was influenced by cultural and natural factors.
4. Visual/verbal journal assignment: "How does harmony relate to the life and art of Dave the Potter? Where is there a lack of harmony?"

Lesson 2: Planters (6 class periods)

1. Visual/verbal journal assignment: "Describe your relationship with the radish plant you planted a few weeks ago."
2. Explain to students the essential components of a planter so that plants can grow healthfully. Ask students to create thumbnail sketches for a planter specifically designed for their developing plant. Conference with students on their sketches.
3. Remind students that in addition to the pottery wheel, Dave the Potter used the coil method for the upper part of his vessels. Demonstrate the coil method including using scoring and slip.
4. Assist students as they create planters with clay using the coil method.
5. Demonstrate additional techniques students may use in adding features and designs to the basic forms of their planters such as incising, applique, and pulling handles.
6. Assist students as they complete the planters.
7. Bisque fire planters once they are completed and are bone dry.

Lesson 3: Poetry (1 class period)

1. Hook: "Dave the Potter found ways to express himself through his poetry. Today you have that opportunity."
2. Review Dave the Potter's poetry. Discuss how his art and poetry were influenced by various social and historical factors.
3. Visual/verbal journal assignment: "Write a few lines of poetry responding to your plant."
4. Invite students to share their poetry with the class.

Lesson 4: Glazing (1 class period)

1. Hook: "The glaze on Edgefield Pottery is what set it apart from the other pottery of the time. They used an alkaline glaze which was safer than lead-based glazes. Today we are going to use alkaline glazes to glaze our planters."
2. Demonstrate appropriate glaze techniques and assist students as they glaze their planters.
3. Glaze fire the glazed planters.

Lesson 5: Critique (2 class periods)

1. Hook: “Today you will have the opportunity to present your planters and receive feedback from your peers as well as to reflect on how your two projects relate to harmony.”
2. Provide students with additional soil as they transfer their plants to the planters.
3. Facilitate a class critique of the planters. Have the lines of poetry displayed along with the planters. Especially encourage students to consider the relationship of harmony to their artwork.
4. Pass out a written summative assessment form for students to use to describe, analyze, interpret, evaluate, and reflect on their two projects for this unit.
5. Visual/verbal journal assignment: “How does your planter exhibit harmony?”
6. Invite students to share their journal entries with the class. Discuss as a class.

Important Vocabulary and Definitions

Line- a mark made by a tool on a surface. Lines can be thick, thin, wavy, straight, horizontal, vertical, diagonal, etc.

Shape- Two-dimensional figures that can be measured by length x height. Shapes can be geometric (precise and human-made) or organic (natural and irregular).

Color- Objects reflect light that the eyes see as color.

- Primary (red, yellow and blue)
- Secondary (green, purple and orange)
- Complementary (red + green, yellow + violet, blue + orange)
- Cool (blue, green, and violet)
- Warm (red, orange, and yellow)

Value- the lightness or darkness of a color or object. (ex. Pink is a lighter value of red.)

Form- Objects that can be measured by length, width, x depth. Like shapes, these can be geometric or organic.

Texture- how things feel, or look as if they might feel, if touched. Texture can be real/actual (as in a real feather) or visual/implied (as in a drawing of a feather).

Space- the distance between, around, above, below and within things.

- Positive space- the space an object occupies
- Negative space- the space surrounding an object

Harmony- the unity of all the visual elements of a composition by repetition of the same characteristics.

Contour lines- lines that define the ridges and edges of an object

Gestural lines- lines that define the essence of an object

Ceramics- describes the shaping, finishing, and firing of clay

Proportion- a principle of art that describes the size, location or amount of one element to another (or to the whole) in a work.

Parts of a ceramic vessel

- Mouth- opening of the vessel
- Lip- rim on the opening of the vessel
- Neck- below the lip where the vessel narrows before widening again for the body
- Shoulder- where the neck begins to widen for the body of the vessel
- Body- the widest part of a vessel designed to hold whatever the vessel contains
- Foot- below the body, a feature that raises the vessel above the surface on which it rests
- Base- the bottom of the vessel

Coil method- method of constructing a vessel involving rolling out “ropes” of clay and stacking them

Scoring- scratch marks on the surface of clay used to attach pieces of clay together

Slip- creamy clay that acts like glue when attaching pieces of clay together

Incising- carving lines with a tool into a clay surface

Applique- a piece of clay added to the surface of a vessel for the purpose of decoration

Kiln- a special oven used for firing clay objects

Resources

Visual/verbal journal examples

American naturalist video segment

William Bartram PowerPoint presentation

Introducing Art textbook

Contour line and gestural line images on a PowerPoint presentation

Guest speaker from a local garden club

Posters of artists' artworks with very distinct styles

Dave the Potter PowerPoint presentation

Materials

Posterboard, staples, stapler, markers, colored pencils, crayons, manila paper, white drawing paper, scissors, glue sticks, rulers, pencils, charcoal, watercolors, permanent markers, pastels, colored pencils, clay, clay tools, slip, wire cutter, canvas, clay boards

Clean-up Procedures

Toward the end of the class, students will place paintings and wet collages on the drying rack and their drawings in their portfolios. Students will place their clay vessels on the designated shelves. Students will clean paintbrushes and water containers and return them to their original locations. Students will return other materials to their specified locations. They will place extra clay back into the clay bag.

Unit/Lesson Plan Form for Art Education

Unit/Lesson Title/Theme: Place

Grade Level: 7

Teacher: Bertling

Unit/Lesson Overview

- I. In this unit, students will study the paintings of local landscape artist Isabel Forbes. They will consider her purposes for selecting her subject matter and style and will consider the ideas her paintings communicate about place. Students will reflect on their favorite place to be alone and represent that place through a painting. In order to do so, students will learn about color theory, and painting styles and techniques. Last, students will critique their paintings.

- II. Next, students will work in groups to map their communities. They will discuss the important places and select one. Then students will study the art of Alexis Rockman, who represents the possible future of various places. Students will consider the future of their chosen place. To assist them, they will research their place using the local newspaper's database. Then a variety of guest speakers from local organizations dedicated to green initiatives will inform students about current efforts related to land conservation, sustainable development, healthy building placement, community gardens, and local, organic food production. This information will help students identify possible ecological alternatives for our city. Then students will create a drawing representing one possible future of their chosen place. In order to do so, students will learn linear perspective and how to accurately shade geometric forms. This unit culminates in a critique, self assessment, and a journal entry.

Rationale: This unit is designed to help students learn about their place and to ask them to consider the future of their place. By painting the land and community, students may gain an appreciation for it. By considering the future of that place, students may begin to consider the effect of their actions on the local land and community.

Place-Based Components: Studying local places in the community, studying a local artist, developing a relationship with nature, inviting guest speakers, considering the ecological future of our place, displaying art in the community

Established Goals

SC Visual Art Academic Standards (2010)

Standard 1: The student will demonstrate competence in the use of ideas, materials, techniques, and processes in the creation of works of visual art.

Indicators

VA7-1.1 Identify the materials, techniques, and processes used in a variety of artworks.

Standard 2: The student will use composition and the elements and principles of design to communicate ideas.

Indicators

VA7-2.2 Compare and contrast several artists' use of the elements and principles of design and describe the ways in which these characteristics express the artists' ideas.

Standard 3: The student will examine the content of works of visual art and use elements from them in creating his or her own works.

Indicators

VA7-3.1 Compare and contrast the content in two works of visual art.

VA7-3.2 Select and use subject matter, symbols, ideas, and the elements and principles of design to communicate meaning through his or her art-making.

VA7-3.3 Discuss the ways that choices of subject matter, symbols, and ideas combine to communicate meaning in his or her works of visual art.

VA7-3.4 Compare and contrast his or her works of visual art with those of an established artist.

Standard 5: The student will analyze and assess the characteristics and qualities of his or her own works of visual art and those of others.

Indicators

VA7-5.1 Compare various purposes for the creation of works of visual art.

VA7-5.2 Describe, discuss, and evaluate, both orally and in writing, the different qualities and characteristics of his or her own artworks and those of others, including works by South Carolina artists.

VA7-5.3 Maintain a portfolio of his or her artworks.

Understandings

Art can communicate ideas about place

Art can envision alternate realities

Essential Questions

How can art represent feelings for a place?

How can art envision alternate realities?

What will students understand as a result of this unit/lesson?

<p>Students will need to know . . .</p> <p>The elements and principles of design</p> <p>Color theory</p> <p>Artists have various purposes for creating art</p> <p>Art can communicate ideas</p> <p>Elements and principles of design communicate ideas</p> <p>Painting techniques</p>	<p>Students will be able to . . .</p> <ol style="list-style-type: none"> 1. Identify the techniques used in a variety of artworks. 2. Compare and contrast several artists' use of elements and principles of design and describe the ways in which characteristics express the artists' ideas. 3. Compare and contrast the content in two of Isabel Forbes' paintings. 4. Select and use subject matter, symbols, ideas, and the elements and principles of design to communicate meaning through his or her art making. 5. Discuss the ways that choices of subject matter, symbols, and ideas combine to communicate meaning in his or her works of visual art. 6. Compare and contrast his or her works of art with those of Alexis Rockman. 7. Compare various purposes for creating a work of art. 8. Describe, discuss, and evaluate both orally and in writing, the different qualities and characteristics of his or her own artworks and those of his or her classmates. 9. Maintain a portfolio and visual/verbal journal.
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Performance Tasks, Projects

<p>Favorite place painting</p> <p>Futuristic landscape drawing</p>
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Other Evidence; observations, work samples, student self-assessment.

Observations

Visual/verbal journal entries

Artist Statement

Student Self-Assessment

Performance Criteria

Analytic rubric (projects)

Holistic rubric (visual/verbal journals)

Checklist (critique)

Visual/Verbal Journal Prompts

What is place?

Where is your favorite place to go to when you want to be alone? How do you feel when you are there?

Reflect on what you learned about painting today. Describe the style you plan to use in your painting of a special place.

Describe your chosen place. How do you feel about it?

How has your chosen place been treated? How do you see the future of your place? Why? How would you like to see the future of your place?

How can value enhance your drawing of a place?

Describe your relationship with place.

Learning Activities

Section I

Lesson 1: Place (1 class period)

1. Hook: "If you were going to paint a place in our city, which place would you paint?"
2. Present a PowerPoint presentation on Isabel Forbes' paintings of place. Discuss her possible purposes in selecting her subject matter and style. Discuss the ideas her works

communicate about place.

3. Ask students to compare and contrast the content in two of her paintings.
4. Visual/verbal journal assignment: "What is place?"
5. Ask for volunteers to share their visual/verbal journal entries. Discuss issues surrounding place such as boundaries, emotional connections, and community relationships.

Lesson 2: Relationships with Place (1 class period)

1. Hook: Show a Caspar David Freidrich painting. "Do you have a special place you like to go to be alone?"
2. Read a poem/prose excerpt about someone's encounter with a place.
3. Visual/verbal journal assignment: "What is your favorite place to go when you want to be alone? How do you feel when you are there?"
4. Invite students to share their journal responses with the class.

Lesson 3: Color Theory (1 class period)

1. Hook: "Have you ever wondered how to mix a color? Well, today we are going to learn how to mix colors."
2. Discuss color theory and ask students to copy the notes from a PowerPoint presentation on primary colors, secondary colors, tertiary colors, complementary colors, and neutral colors.
3. Assist students as they mix colors to create a color wheel.

Lesson 4: Painting Styles and Techniques (1 class period)

1. Hook: Show students one of Rembrandt's paintings of flowers and one of Van Gogh's paintings of flowers. "Look at how two artists painted the same thing so differently."
2. Explain how artists use different styles and techniques to portray the subject matter in different ways. Explain how techniques can communicate different ideas.
3. Show students a PowerPoint presentation with a variety of artists with distinctive styles including Vincent Van Gogh, Edvard Munch, Georges Seurat, Marc Chagall, Mary Cassat, Jonathan Green, and Frida Kahlo. Ask students to compare and contrast the artists' use of elements and principles of design.
4. Demonstrate various painting techniques with tempera paint.
5. Encourage students to experiment with painting in their journals.
6. Visual/verbal journal assignment: "Reflect on what you have learned about painting today. Describe the style you plan to use in your painting of a special place."

Lesson 5: Drawings of Special Places (6 class periods)

1. Hook: "You have decided the place you want to represent in your artwork. Now you need to consider how you will represent it."
2. Ask students to create thumbnail sketches of their special place.
3. Pair students to provide each other with peer feedback on their sketches. Conference with students individually on their sketches.
4. Assist students as they create a painting representing their special place. Encourage students to carefully consider the ideas they would like to communicate as they make decisions about subject matter, style, techniques, and color choices.

5. Invite the artist Isabel Forbes to share her inspiration for painting our city.
6. Ask students to share their inspiration for their painting of place.

Lesson 6: Critique (1 class period)

1. Hook: "Today you have the opportunity to present your painting to the class."
2. Facilitate a class critique on their artworks. Encourage students to communicate how their painting represents their relationship with the chosen place through the subject matter, techniques, style, and color choices.
3. Hang the paintings around the room and in the hallways.

Section II

Lesson 1: Places in the Community (1 class period)

1. Hook: "Have you ever seen a map of our community? Well today we are going to create a map of the important places in our community."
2. Divide students into groups of 3-4 and assist them as they draw maps of their communities. Encourage them to focus on including specific locations and not to concern themselves with drawing it to scale.
3. Invite groups to share their maps and discuss their reasons for including different places.
4. Ask students to choose one place that stands out most to them and represents an important place in the community.
5. Visual/verbal journal assignment: "Describe your chosen place. Why are you choosing it?"

Lesson 2: Alternatives for Place (2 class periods)

1. Hook: "Picture the place you selected. Now I want you to imagine what it will look like 100 years in the future. . . . Today we will be looking at how one artist imagined the future and will consider the future of our communities."
2. Present a PowerPoint presentation on Alexis Rockman. Discuss his representations of place and the implications for the future of place.
3. Provide students with a worksheet which asks them to use the local newspaper's database (goupstate.com) to learn more about their chosen place. Have students search the database for their chosen place and complete the related questions on the worksheet.

Lesson 3: Guest Speakers (3 class periods)

1. Hook: "Today we have a guest speaker here to share with us how his/her organization is improving our city. During this talk, try to envision our city with the improvements this organization is working towards."
2. Each day, host a different guest speaker from a local organization dedicated to a green initiative such as land conservation, sustainable development, healthy building placement, community gardens, and local organic food production. Ask them to discuss their organization's efforts to create a better social and ecological future.
3. Encourage students to ask questions.
4. If time permits, discuss how their organization is creating a better ecological future and ask students to jot in their visual/verbal journals how the organization's efforts might be able to improve their chosen place.
5. After all of the guest speakers have visited during the week, ask students to complete the

following visual/verbal journal assignment: “How has your chosen place been treated? How do you see the future of your place? Why? How would you like to see the future of your place?”

6. Invite students to share their responses with the class.

Lesson 4: Drawing Alternatives for Place (1 class period)

1. Hook: “Now that you have studied your chosen place, it is now time to represent a possible future for it.”
2. Ask students to create thumbnail sketches of an alternative future for their chosen place.
3. Pair students to provide each other with feedback on their sketches. Conference individually with students about their sketches.

Lesson 5: Linear Perspective (2 class periods)

1. Hook: Show Raphael’s *School of Athens* using the LCD projector. Ask students how the artist created the illusion of depth.
2. Discuss how linear perspective is one way to create the illusion of depth.
3. Introduce students to the basics of linear perspective including horizon line, vanishing point, and orthogonal lines. Ask students to take notes.
4. Demonstrate how to draw geometric forms such as cubes and rectangular prisms and assist students as they follow along.
5. Discuss how linear perspective could be useful in their drawings of the future of place.
6. Provide students with materials and assistance as they draw a future alternative for place.

Lesson 6: Value (5 class periods)

1. Hook: Show students a simple line drawing and then the same drawing shaded. Ask students the difference between the two. Discuss how value can create the illusion of depth.
2. Display geometric forms under a light source. Discuss the different values of the sphere including the highlight, cast shadow, and reflected light.
3. Show students a value scale. Demonstrate how to create one. Ask students to create two value scales: one with a graphite pencil and one with colored pencils.
4. Assist students as they practice drawing and shading one of the geometric forms under the light source with pencils and then colored pencils.
5. Assist students as they shade their future of place drawing.
6. Visual/verbal journal assignment: “How can value enhance your drawing?”

Lesson 7: Critiquing and Reflecting (2 class periods)

1. Hook: Read a quote about place and the meaning of place. “Today we will critique your representations of place and reflect on the meaning of place.”
2. Facilitate a class critique of their futuristic drawings. Ask students to compare and contrast their approach to the approach of Alexis Rockman.
3. Ask students to write an artist statement about their drawing that can accompany their artwork when it is displayed in the community.
4. Ask students to complete a summative self-assessment form about both place artworks.
5. Visual/verbal journal assignment: “Describe your relationship with place.”

6. Invite students to share their responses with the class. Discuss final thoughts about place.

Important Vocabulary and Definitions

Hue- a color's name

Primary colors- red, yellow, and blue

Secondary colors- green, orange, violet

Tertiary colors- red-violet, red-orange, blue-violet, blue-green, yellow-orange, yellow-green

Complementary colors- colors opposite each other on the color wheel (red and green, yellow and violet, blue and orange)

Variety- state of different forms or types; gives a design interest notably through contrast, emphasis, and differences in size and color

Linear perspective- the mathematical system for creating the illusion of three-dimensions on a two-dimensional surface

Horizon line- line where the sky meets the ground; eye level

Vanishing point- point on the horizon line where all the lines converge

Orthogonal lines- lines that recede to the vanishing point

Value- the lightness or darkness of a color or object

Center of interest- a section of a composition that stands out more than the rest

Symmetrical balance- a mirror image about a vertical axis; formal balance

Asymmetrical balance- without symmetry; informal balance

Unity- occurs when the elements of a composition combine to form a balanced, harmonious, and coherent whole

Resources

Isabel Forbes PowerPoint presentation
Alexis Rockman PowerPoint presentation
Goupstate.com and the corresponding worksheet

Color wheel in textbook
Guest speakers from local organizations

Materials

Tempera paint, paintbrushes, palettes, water containers, manila paper, white drawing paper, watercolor paper, pencils, rulers, paper towels

Clean-up Procedures

Toward the end of class, students will clean up by placing paintings on the drawing rack and drawings in their portfolios on the shelf. Students will wash paintbrushes and water containers in the sink and return them to their original location.

Unit/Lesson Plan Form for Art Education

Unit/Lesson Title/Theme: Transformation

Grade Level: 7

Teacher: Bertling

Unit/Lesson Overview

Students will take a field trip to a nearby landfill to tour the site and learn about the county's current efforts to reduce, reuse, and recycle. Once students return to school, we will compare and contrast our county's efforts to handle waste with the efforts of eco-artists. Next, we will study the art of Steven Siegel who creates large site-specific sculptures with consumer waste. Next, students will experiment with various waste materials to gain ideas for they could be used in an artwork. Students will work in groups to construct sculptures out of the consumer waste materials. These works will be displayed in the school. This unit will culminate in a critique, a summative self-assessment, and a journal entry.

Rationale: This unit asks students to move beyond knowledge, wonder, and respect to action. Hopefully, students have developed a relationship with the land and community, and now they will work to protect it. Through this action, they may further shape their own ecological attitudes and begin to develop the habit of working for change. By getting out of the school and visiting places in their community and learning from a guest speaker, students will have direct experiences with the land and the community.

Place-Based Components: going on a field trip, hosting a guest speaker, responding to local environmental issues, including interdisciplinary concerns

Established Goals

SC Visual Art Academic Standards (2010)

Standard 1: The student will demonstrate competence in the use of ideas, materials, techniques, and processes in the creation of works of visual art.

Indicators

VA7-1.1 Identify the materials, techniques, and processes used in a variety of artworks.

VA7-1.2 Describe the ways that different materials, techniques, and processes evoke different responses in one who is creating or viewing artworks.

VA7-1.3 Select and apply the most effective materials, techniques, and processes to communicate his or her experiences and ideas through the artworks.

Standard 2: The student will use composition and the elements and principles of design to communicate ideas.

Indicators

VA7-2.1 Discuss similarities and differences in the composition and in the use of the

elements and principles of design in two contrasting works of visual art.

Standard 5: The student will analyze and assess the characteristics and qualities of his or her own works of visual art and those of others.

Indicators

VA7-5.1 Compare various purposes for the creation of works of visual art.

Standard 6: The student will make connections between the visual arts and other arts disciplines, other content areas, and the world.

Indicators

VA7-6.1 Compare and contrast concepts, issues, and themes in the visual arts and other subjects in the school curriculum.

Understandings

Art can respond to social and ecological issues.

Art has the power to transform materials, spaces, attitudes, and communities.

Artists can be inventive with materials. Almost any material can be used to create art.

Essential Questions

How can art respond to social and ecological issues?

How can art be transformative?

What will students understand as a result of this unit/lesson?

Students will need to know . . .	Students will be able to . . .
Elements and principles of design	1. Identify materials, techniques, and processes used in eco-artworks.
Found object techniques	2. Describe the ways that different materials, techniques, and processes evoke different responses in one who is creating or viewing artwork.
Characteristics of Steven Siegel’s art	3. Select and apply the most effective materials, techniques, and processes to communicate his or her experiences and ideas through art.
Purposes for eco-art	4. Discuss similarities and differences in the

	<p>composition and in the use of the elements and principles of design in Siegel's stacked series and container series.</p> <ol style="list-style-type: none"> 5. Compare various purposes for the creation of a work of art. 6. Compare and contrast ecological concepts, themes, and issues in the visual arts and in science.
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Performance Tasks, Projects

<p>Eco-art group project</p> <p>Class performance</p>

Other Evidence; observations, work samples, student self-assessment.

<p>Observations</p> <p>Visual/verbal journal entries</p> <p>Student self-assessment</p>

Performance Criteria

<p>Analytic rubric (projects)</p> <p>Holistic rubric (visual/verbal journals)</p> <p>Checklist (critique)</p>

Visual/Verbal Journal Prompts

<p>List what you learned on the field trip. Did the trip change your thinking about waste? If so, how?</p> <p>How can art transform? How will you use art to transform? How can you use untraditional materials to help you with this?</p> <p>Which materials did you find most promising for an eco-artwork? How might you use them?</p> <p>How is your group's artwork designed to be transformative?</p>

How do you think people will respond to your eco-art work? How do you respond to it?

Learning Activities

Lesson 1: Field Trip (1/2 day)

1. Hook: "Today we are going on a field trip to a landfill to learn about how waste is handled in our county."
2. Tour segments of the landfill and related facilities.
3. Eat bag lunches at a local park.
4. Reflect on experiences of the field trip. Visual/verbal journal assignment: "List what you learned on the field trip. Did the trip change the way you think about waste? If so, how?"
5. View a PowerPoint presentation on eco-artists. Discuss their purposes for creating eco-artworks, and ask students to identify the materials and processes used in their works. Compare and contrast the efforts of the eco-artists with the efforts of the waste management programs in our county.

Lesson 2: Steven Siegel (1 class period)

1. Hook: Show a clip of Steven Siegel discussing his art.
2. Present a PowerPoint presentation on Steven Siegel. As a class, complete a Venn Diagram to compare and contrast the composition and use of elements and principles of design in Siegel's stacked series and container series.
3. Discuss Siegel's innovative use of consumer waste and his purposes in creating art.
4. Journal assignment: "How can art transform? How will you use art to transform? How can you use untraditional materials to help you with this?"

Lesson 3: Experimenting with Materials (1 class period)

1. Hook: Setup stations around the room with various materials. Point out the unusual art materials at each table. "Today we are going to experiment with some unusual found objects."
2. Demonstrate examples of creative ways to use found materials.
3. Supervise as groups move from station to station experimenting with materials.
4. Journal assignment: "Which materials did you find most promising for an eco-artwork? Describe how you might use them."
5. Invite students to share their responses with the class.

Lesson 4: Eco-Art (6 class periods)

1. Hook: "We've discussed the problems in our community, but today we have the opportunity to creatively respond and work toward change!"
2. Ask students to individually sketch ideas for an eco-artwork for their chosen location. Ask students to specify the materials they will use.
3. Group students into groups of three to four. Allow students to work individually if they request it.
4. Ask students to present their sketches to their group and work as a group to select or

develop a design. They may adopt one group member's design or fuse several designs to create a new design. Conference with groups as they develop these designs. Submit their final designs to the principal for approval since the sculptures will be displayed on school grounds.

5. Provide groups with materials as they create their eco-artworks.
6. Journal assignment: "How is your group's artwork designed to be transformative?"

Lesson 5: Critiquing and Reflecting (2 class periods)

1. Hook: Play a clip of Steven Siegel critiquing his sculptures. "Just like Siegel critiqued his sculptures, we are going to critique ours today."
2. Install each artwork in its specified location. Present images of the installed artworks to the students. Facilitate a class critique of their eco-artworks.
3. Journal assignment: "How do you think people will respond to your eco-artwork? How do you respond to it?"
4. Ask each student to complete a summative assessment form for their eco-artwork.

Important Vocabulary and Definitions

Balance- the arrangement of elements in a work of art so that they appear symmetrical or asymmetrical in design and proportion

Unity- occurs when all of the pieces come together to make a balanced, harmonious, complete whole

Found object- the use of an object not designed for an artistic purpose

Eco-art- art that responds to environmental concerns

Resources

Eco-Artists PowerPoint presentation
Steven Siegel PowerPoint presentation

Materials

Recycled and found materials: shredded paper, newspaper, water bottles, cans, bottle caps, paper towel rolls, cardboard, egg-cartons, fabric, buttons,

Wire, scissors, duct tape, packing tape, super glue, hot glue, Elmer's glue, yarn

Clean-up Procedures

Toward the end of each class, students will store the eco-art projects in the loft and return materials to their specified locations.

Appendix H: Institutional Review Board (IRB) Approval Letter



Office of The Vice President for Research
DHHS Assurance ID No. : FWA00003901

Institutional Review Board
Human Subjects Office
612 Boyd GSRC
Athens, Georgia 30602-7411
(706) 542-3199
Fax: (706) 542-3360
www.ovpr.uga.edu/hso

APPROVAL OF RENEWALS / CHANGES

Request Date: 2012-07-23

Project Number: 2012-10038-1

Name	Title	Dept/Phone	Address	Email
Dr. Tracie Costantino	PI	Art Lamar Dodd School of Art 270 River Road N323 Lamar Dodd 706-542-1640		tcost@uga.edu
Ms. Joy Bertling	CO	Art Education 205-3937	307 Rexford Drive Moore, SC 29369	joybert@uga.edu

Title of Study: Students' Relationships with the Environment in a Place-Based Art Education Class

45 CFR 46 Category: Continuing Review

Renew : Yes

Change(s) : None;

Parameters:
RENEWAL OF APPROVAL PERIOD WITH NO
CHANGES. Remaining research activities are
limited to data analysis;

Approved : 2012-08-05 **Begin date :** 2012-08-05 **Expiration date :** 2013-08-04

NOTE: Any research conducted before the approval date or after the end data collection date shown above is not covered by IRB approval, and cannot be retroactively approved.

Number Assigned by Sponsored Programs:

Funding Agency:

Your request for approval of renewal and/or changes has been approved.

You must report any adverse events or unanticipated risk to the IRB within 24 to 72 hours. Refer to the IRB Guidelines for additional information.

Use the attached Researcher Request Form for requesting renewals, changes, or closures.
Keep this original approval form for your records.

Chairperson or Designee,
Institutional Review Board