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***Artistic Approaches to Ecological Literacy:  
Developing eco-art education in elementary classrooms***

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*“Armed with trowels, seeds, and vision, the idea is to garden everywhere. Anywhere.”*<sup>1</sup>

In recent years I have been on a professional and personal journey that has been exploring the role of art education in fostering ecological literacy. Based on a desire to find a more socially relevant role for art education, I have been investigating how the visual arts and art education can be used to raise awareness of and engagement with environmental concepts and issues. Through leading workshops, teaching courses and writing, I have come to think of my research in this area as a form of guerilla gardening.<sup>2</sup> Used as a means of planting seeds for the greening of art education, this type of activism has forced me out of the confines of my studio classroom to work the soil in a variety of fertile educational gardens. In these places I have been cultivating ideas with students, teachers, administrators and parents about the intersections of nature and culture, and promoting their roles in developing a more sustainable means of living on this planet.

This metaphorical form of gardening has proven to be rewarding work, allowing me to grow a rich set of images and texts that inspire my evolving sense of self as educator, researcher, environmentalist, and artist. It has been a generative place to explore, to play, to learn and to grow, both individually and with others. If at times I have felt that I was simply tending plants sowed in this garden by others, doctoral studies has forced me to dig deeper to prepare the soil for a new set of plantings that are more my own. Doctoral research now provides an opportunity to propagate one set of these ideas to see if they can help to change the landscape of art education.

This landscape has shifted significantly over the last few decades, with major changes in theory and pedagogy manifested through discipline-based art education, multicultural and cross-cultural art education, and more recently, visual culture art education and material culture studies. Echoing the philosophical developments of postmodernism, these approaches reflect a growing trend on the part of art educators to move beyond the insularity of modernism and engage art education more fully with the world around it. Proof of this growing engagement, while found in many of these contemporary approaches to art education, is also found in an emerging field known as eco-art education.

Also referred to as environmental art education, eco-art education integrates art education with environmental education as a means of developing awareness of and engagement with environmental concepts and issues, such as conservation, preservation, restoration and sustainability. In this, eco-art education promises an innovative approach to ecological literacy and environmental education, one that balances the traditional roots of these disciplines (found in the cognitive, positivist approaches of science education) with the more creative, affective and sensory approaches of art education.

It is in this area of the educational garden that I have been engrossed over the past five years. I have spent time planting ideas with teachers, students, artists, and parents, and have immersed myself in learning about what others have been doing in this field. But now it is time

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<sup>1</sup> Unattributed quote from the Primal Seeds website (2006).

<sup>2</sup> Guerilla gardening is a recent phenomena which has found urban gardeners adopting abandoned or ignored flower beds, planters, street corners and alleyways in order to grow plants, flowers, fruits or vegetables. Intended as a form of social activism, it is intended as a way to reintroduce nature into unexpected, untended urban areas for aesthetic and ideological reasons.

to grow an eco-art curriculum, to see how these ideas can sprout from seeds into full plants. I fully understand that growing new curricular initiatives, just like tending new plantings, is a complex undertaking requiring a balance of well-conceived curriculum, inspired pedagogy, and most importantly, engaged educators and learners. Educators are central to this process due to their integral role in the construction and delivery of curriculum in schools as well as in the successful engagement of learners. Teachers must be key players in the process if changes in attitude and behaviour towards the environment are to be more strongly rooted in the coming generations through education. Therefore I am most intrigued by what eco-art education looks like in practice in elementary school settings, and by the challenges faced by teachers who choose to implement this approach in their classrooms.

My research is grounded in the core belief that art education can be used to foster ecological literacy<sup>3</sup>, and that developing this form of literacy in children is considered by many educators to be essential to the continued existence of human life on this planet (Orr, 1992; Thomashow, 1993). In the past, ecological literacy has fallen under the guise of environmental education, which has been developed and promoted most typically by science educators. While environmental education has made significant headway in the past, researchers in this field freely admit that there has been more success in inducing learners' attitudinal shifts than in making behavioural ones (Leeming, Dwyer, Porter & Cobern, 1993).

Art education offers a dynamic way to increase the power and relevancy of environmental education by providing an alternate means for furthering learners' ecological literacy. This assertion has supporters from within the traditional factions of environmental education: for example, Orr (1992) argued that ecological literacy will not be instilled in children unless it is integrated into a wide variety of subject areas such as the arts. The need for more arts-based, affective approaches to environmental education has been echoed by many others (Graff, 1990; Adams, 1991; Lindholdt, 1999; Gurevitz, 2000). I share with these authors a belief that the values-based, subjective orientation of affective learning typically found in art education not only helps change learners' attitudes about ecological concerns but may also lead to shifts in their behaviour towards the environment. It is this ability, to feed learners' minds yet also touch their souls, that makes art education a powerful ally in fostering ecological literacy.

While a small body of literature exists which documents the experiences of individual educators with integrating the visual arts with environmental education, (Birt, Krug, & Sheridan, 1997; Anderson, 2000; Keifer-Boyd, 2001; Holmes, 2002) little substantial development has been done in creating and implementing eco-art curriculum and pedagogy for elementary classrooms. This research study has aimed to initiate just such an undertaking by bringing

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<sup>3</sup> Capra (1999) defines an ecologically literate person as one who understands the basic principles of ecology and is able to embody them in the daily life of human communities. Puk (2002) builds on this by stating that an "ecologically literate person is one who is a responsible, lifelong learner who strives to improve the human condition and the environment within the context of self, human groups, the biosphere and the ecosphere. This person will find purpose and meaning for life by continuously aspiring to higher levels of balanced growth, in his or her cognitive, affective, psychomotor, reflective, intuitive, aesthetic, social, creative and spiritual capabilities" (p. 4). The Toronto District School Board (2006) defines being ecologically literate as understanding the basic principles of ecology, which include learning about and understanding how nature works, how our society and economy ("human systems") depend on clean air water, and soil and other resources (products of "natural systems"), and how human interactions with the environment can have both positive and negative impacts on people and the natural world.

together a team of elementary teachers with a university-based educator to investigate the experience of developing a model (or models) of eco-art education. A collaborative action research methodology has provided the framework within which the team has worked, allowing for maximum flexibility and self-direction as the process has unfolded. It has also endeavoured to honour the central role teachers play in the design of innovative curriculum and pedagogy, and acknowledge the benefits inherent in school-university partnerships.

As so little comprehensive curriculum development has been done in the field of eco-art education, this research has provided a unique opportunity to learn about the content and structure of eco-art education, and the ways in which teachers frame this learning for their classes. In this I have been attempting to answer the following questions: how do teachers define eco-art education and apply it in their classrooms? How do they weave together art and environmental education in a cohesive way to learn about environmental issues and concepts? What curricular content and structure strikes a cord with teachers and students in elementary eco-art lessons? Is a specific pedagogy necessary to present eco-art content, and if so, what are its features? What can eco-art education look like in elementary classrooms?

There is no doubt that these questions emphasize the roles and experiences of teachers in the process of defining, developing and implementing eco-art education in elementary classrooms. This is not to deny the roles others play in the success of such a complex undertaking; undoubtedly students, parents, administrators, instructional leaders and community members will also make contributions to its successful implementation. However it is beyond the scope of this research to study all of these stakeholders simultaneously; aiming for depth rather than breadth, I have endeavoured instead to examine the experiences of teachers in this research project to better understand their perceptions of the benefits, challenges, and barriers of eco-art education in elementary curriculum development.

My own role has been to act as a catalyst by bringing together a team of elementary educators to lend their classroom expertise to the project. By providing a background in eco-art education history, readings and resources, I have facilitated the team's understanding of the term eco-art education, and helped them apply these definitions to the construction of appropriate lessons or strategies for an eco-art curriculum. While I have been fulfilling the duties of lead researcher and playing a consultative role, the elementary educators have ensured that the development of eco-art curricula is firmly grounded in the realities of classroom life. Their roles have involved planning eco-art curricula and implementing it in their own classrooms, and sharing these results with the research team.

As the framework that guides the study, collaborative action research provides an intriguing pathway into the development of eco-art education by challenging dominant paradigms of curriculum development. It provides the means for a team-based approach that aims for cooperation and co-learning in curriculum development, allowing for multiple voices to contribute to the creation of an innovative model(s) of art education. In this it runs counter to more traditional approaches to curriculum development, which typically privilege the formal and theoretical knowledge of academics over the tacit knowledge and pedagogical expertise of practicing teachers. Collaborative action research has offered a unique opportunity for the team to share and exchange practical and theoretical expertise in order to plan, implement, observe and reflect on eco-art curricula over the span of a school year.

### *Tracing My Roots*

Digging in the garden of eco-art education began over six years ago for me. I have long been intrigued by the environmentally-focused and site-specific art that appeared in the 1970s in response to a growing awareness of environmental concerns; works by Robert Smithson, Nancy Holt, Alan Sonfist, Walter de Maria and Richard Long captured my attention in my undergraduate years, and have frequently turned up in my course syllabi since then as I have shared their work with others. Over the past five years my familiarity with environmentally-focused artists working under the banner of eco-art has grown considerably, thanks in part to books by Beardsley (1998), Matilsky (1992) and Spaid (2002). I have come to learn that artists such as Joseph Beuys, Hans Haacke, Alan Sonfist, Agnes Denes, Mel Chin, Ana Mendieta, Newton Harrison and Helen Mayer Harrison, Lynne Hull, Mierle Laderman-Ukeles, Dominique Mazeaud, and Andy Goldsworthy, to name only a handful, have been responding to environmental issues and concerns in innovative ways for over three decades. These artists (and the next generation following in their footsteps) have touched countless viewers through their work, both in terms of their understanding of environmental concerns and their innovative means of communicating ideas and creating solutions for them, reaching people in ways that scientists and academics have been unable to do. In this I consider their work integral to the theoretical and pedagogical research being done in academic settings, and therefore feel it is important to cite this field as a source of inspiration of ‘related literature’. In my mind the work of environmental artists is of equal importance as a research-based mode of inquiry in eco-art education. As Lynne Hull has said: “It is the venue of artists, poets, and philosophers to create new myths, revise the stories, encourage the shifts in attitude we must have for all to survive in the long range,” (quoted in Kiefer-Boyd, 2002, p. 328).

And yet the legacy of their works is a rich resource that has often been neglected in both art and environmental education, and certainly in elementary curricula. This research study is aimed to help correct this situation by introducing elementary teachers and their classes to environmental artists through viewing their work, discussing their approaches and potentially inspiring similar types of art-making in these classrooms. In this I had hoped the team would discover new ways of introducing eco-artworks to students and using them to inform lessons in a variety of subject areas. By incorporating eco-artists and their work into a curricular model for eco-art education and then sharing this model (and the students’ resulting artworks) with others, this should help to fill an existing gap in the related literature of art education.

My notions of research into eco-art education have also been fueled by the work of a number of scholars working in this field. One of the books that has been greatly influential in the development of this study is *The Re-enchantment of Art*, by critic Suzi Gablik (1991). She articulated the need for a radical change in art-making to reflect the shift from modernist to postmodernist aesthetics by criticizing Modernism’s “nonrelational, noninteractive, nonparticipatory orientation” (Gablik, 1995, p. 80) as being too removed from any living social reality or moral imperative. Instead she offered an alternate vision of art-making based on her theory of “connective aesthetics” (1995, p. 84): by better connecting art to the realities of daily living, she argued that art can be used effectively as an agent of social change, one that would capture the public’s attention through its creative, innovative approaches to society’s problems.

In this, Gablik made an important contribution to the definition of eco-art education: she documented a growing trend in art-making that related art to environmental concerns, and created a new lens through which this work could be seen and appreciated. Art educators like myself who shared Gablik's interest were not only given an entrée to art focused on environmental issues, but were also provided with an aesthetic framework within which to present this art to students. This was the impetus I needed to more closely examine the role this art and framework might have in art education.

Other writers supported Gablik's ideas and began building a body of literature in eco-art education; Blandy and Hoffman's (1993) article is an excellent example of this. Echoing Gablik's notion of connective aesthetics, these two authors positioned art as "a means to engage individuals in social and political issues in ways that empower them, create alliances, and establish community" (p. 29). They also made clear their agenda of defining and promoting eco-art education, what they called "an art education of place," by focusing their attention specifically on environment concerns. They saw a direct correlation between increasing environmental degradation and the amount of ignorance about environmental issues, and therefore called on art educators to play a role in imagining "new relations among art, community and environment" (p. 23). As the basis for their approach, they turned to eco-theory and community-based art education and ultimately defined eco-art education as a means "to teach students about art in a way that promotes an understanding of the interdependence and interconnectedness of all things" (p. 28).

Following this lead, other art educators began building a rationale for linking the teaching of art with environmental issues in elementary and secondary schools. Lankford (1997) promoted art education's role in ecological stewardship, while Hollis (1997) highlighted the need for an art curriculum based on ecological issues; both authors provided examples of artists working from ecological perspectives to inspire educators to move in this direction. Ulbricht (1998) traced his own evolution of thinking in relation to environmental art education from a modern to a postmodern approach that positioned art in an active role in bringing about positive environmental change. From a more theoretical vantage point, Garoian (1998) convincingly argued that the roots of European art practice promoted exploitive attitudes and behaviours towards the environment, and proposed five metaphors of how the canon of western art taught in the schools continues to support an ideology of human domination of the earth.<sup>4</sup> This positioned eco-art education in opposition to traditional approaches to art education, and raised an interesting question: was it sufficient to raise awareness of the ideology of these metaphors in an art education program, or did their use have to be discontinued all together? Garoian provided no clear cut answers in this regard, choosing instead to leave readers to make their own decisions.

Many of these same educators took their arguments one step farther by proposing a variety of means through which eco-art education could be taught. Gablik (1995) promoted a transformative learning approach, based on empathetic listening, dialogue, and collaboration, which she saw as an act of empowerment that would lead to learners' increased ability to "make room for the Other" (p.82). Blandy and Hoffman (1993) advocated a bioregionalist perspective, one that took the needs of the community into consideration. In this art students would bring "a

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<sup>4</sup> These included concepts commonly found in art education programs: "pictorial space to circumscribe the land, perspective to survey the land, the sublime to valorize the land, mapping to simulate the land on paper, and the machine to construct a surrogate land" (Garoian, 1998, p. 254).

high degree of self-investment and reflection” (p. 28) to investigate issues of place and community, highlighting their region’s social and political concerns. Artworks with an ecological orientation and a respect for the environment could be used to invoke discussion on these issues. They also saw the possibility of enlarging the range of activities typically found in art class: “Exploring and conveying relationships with the Earth; performing acts that cleanse the land, air, and water; and empowering people to act for a healthier environment are important and credible tasks for the artist and important and credible acts to be studied as art” (p. 30).

Neperud (1995b) highlighted the importance of creating a contextually situated curriculum, one that was rooted “in the texture of each community” (p. 236). He stressed the development of learners’ understanding of the ideological meanings of environments, with particular emphasis on understanding their own environmental interpretations and values. Learning in this field he felt was best done in an experiential, interactive, creative and imaginative manner, as this would develop learners’ feelings of empowerment and interconnectivity. Garoian (1998) proposed a specific set of pedagogical principles for eco-art education; these included an introduction to environmental issues, critiques of the metaphors and values inherent in landscape art, discussions about the range of environmental perspectives from different cultures and an encouragement of students’ stewardship of the land

Given the commonalities of these authors’ definitions, it is no surprise that there are many similarities in their pedagogical approaches to eco-art education. Whether grounded on scientific or aesthetic footings, they recommended a pedagogy that was community-based, interdisciplinary, experiential, interactive, dialogic, ideologically-aware, and built on the values of empathy, sustainability and respect for the environment. In this, discussions of eco-art education have prefigured and integrated various trends in contemporary art education, and potentially provided a model on which more general art education programs could be based. These authors, therefore, have provided a valuable service by helping to further the development of eco-art education specifically, and by adding their voices to a critique of issues of art education more generally.

Since the late 1990s, however, there has been a surprising lack of critical attention to the issues and practices of eco-art education in refereed publications. Only a few articles or chapters have appeared (Anderson, 2000; Keifer-Boyd, 2001; Holmes, 2002) with anecdotal evidence of eco-art education initiatives, and one curriculum resource (Anderson & Millbrandt, 2004) that integrate these discussions. This sits in contrast to the growing awareness and interest in visual arts circles about environmental art (evidenced by websites such as Green Museum and the Community Arts Network.<sup>5</sup>) This may soon be rectified however, as *Studies in Art Education*, one of the leading art education research publications, is devoting a special issue to art and ecological issues in the coming year. This may help reinvigorate critical discussions in eco-art education, and inspire new research in this area.

As I became aware of the existing literature in eco-art education, I also began to pursue an introduction to the literature of environmental education, as I had little background in this area. While I would still position myself as a newcomer to this field, I have become more aware of its key theorists, practitioners and researchers. What has struck me most about environmental education and its related research are the strong ties it has in the physical sciences and science education. While not a negative feature in itself, environmental education has often worked to

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<sup>5</sup> These sites can be accessed at Green Museum: <http://greenmuseum.org/> and the Community Arts Network: <http://www.communityarts.net/archivefiles/environment/index.php>



the exclusion of other disciplines (especially the humanities) as a basis for its knowledge, pedagogy and research methodology. Chawla (1998) for example, acknowledges the widespread belief that science will be the source of solutions to environmental problems. Fortunately some writers in the field (Orr, 1992; Chawla, 1998; Lousley, 1999; Gurevitz, 2000) have begun to challenge this positivist approach and call for a wider variety of perspectives to be incorporated into environmental education. Orr (1992) is an articulate supporter of this notion, and has declared that environmental education “requires active engagement of the humanities in particular” (p. 84) if any positive ecological change is to happen in the future.

I have found similar constrictions of thinking to be true in terms of the pedagogical approaches most typically used in environmental education. As Weston (2004) pointed out, the implicit model of pedagogy has been “information-transmission; the teacher is the transmitter; talking is the primary mode – usually the only mode in fact” (p. 34). But some theorists and teachers (Thomashow, 1993; hooks, 1994; Russell, 1997; Weston, 2004) are advocating for environmental education to take a more transformative approach to learning, one that complements cognitive approaches to learning with more affective and embodied ones. Ecofeminism (Hicks & King, 1996; Hallen, 2000) and global education (Selby, 2000) have much to offer here, as does place-based education (Sanger, 1997; Smith, 2002; Sobel, 2004). It is the latter area that has the most resonance for my approach to eco-art education, as the concept of sense of place has a long history in the visual arts and is a natural basis for much art education.

What I hope to add to this literature is a strong voice and a rich set of data advocating for and evidencing the need for these theoretical and pedagogical changes. Art education’s long history with experiential, affective, and embodied approaches to learning can be used effectively to support the call for the incorporation of a wider variety of perspectives in environmental education. I also plan to help raise awareness of what environmental artists (and student artists) can bring to this arena; their creative solutions to ecological problems often offer innovative approaches that science has not yet considered.

Throughout the process of acquainting myself with the related literature, I have learned more about my own proclivities as an emerging researcher. I approach qualitative inquiry through a postmodern lens. I have learned about postmodern theory through exposure to contemporary art, and through this have internalized certain postmodern, post-structuralist sensibilities, including questioning Modernism’s faith in the grand narratives, its search for universalism and (one) truth, and its belief in the power of reason, rationality, and objectivity. Instead I have come to believe in the idea of multiple, socially-constructed realities, in the role of language in determining and understanding these realities, and in the power of individual subjectivity and interpretations to reflect the complexity of our lived experiences. In this I share Kemmis & McTaggart’s (2003) belief: “‘truth’ is always and only provisional...is always fallible...is always shaped by particular views and material-social-historical circumstances, and...it can be approached only intersubjectively” (p. 357-358).

These ideas have most certainly influenced my practice as an art educator. Despite a Modernist-infused undergraduate education, I have become alienated by formalism, and am more interested in the historical and cultural context of artworks and artists in the making and critiquing of art. I support a more holistic vision of art education, one that moves beyond the privileging of art production to include the interpretation of the visual arts and material culture as an integral part of the creative process. Yet I am uncomfortable with the authority society confers on art historians, critics or curators to dictate interpretative standards; instead I prefer to

promote the power of individual viewers to construct, deconstruct and/or interpret artworks from their own unique perspectives.

I am certainly not alone in rejecting a Modernist approach to art education; Neperud (1995a) discusses this shift in thinking at length, as have others before me (Efland, Stuhr & Freedman, 1996; Clark, 1996; and Haynes, 1995, to name only a few). Certainly one of the most influential writers in my own development in this regard has been Suzi Gablik (1991), whose distinction between *deconstructive* and *reconstructive* views of postmodernism has been instrumental in the integration of my environmental beliefs into my vision of the visual arts and art education. Rather than focusing on a postmodernist analysis of the shortcomings of Modernism, (what she calls a *deconstructive* approach) Gablik advocates a *reconstructive* view, “to make the transition from Eurocentric, patriarchal thinking and the ‘dominator’ model of culture toward an aesthetics of interconnectedness, social responsibility and ecological attunement” (p. 22). By better connecting art to the realities of daily living, she argues that art can be used effectively as an agent of social change, one that can capture the public’s attention through its creative, innovative approaches to society’s problems. Gablik’s (1991) book has been a pivotal text as it has given me the impetus to integrate my postmodern ideas about art and the nature of lived experience with my physical, emotional and spiritual connections to the environment.

My beliefs about environmentalism have also become more central to my ontology in recent years. Having developed a keen interest in both natural and built environments over time, I understand that we are connected inextricably to our environment, as we are to all aspects of our world.<sup>6</sup> Over time this has grown into a strong sense of responsibility and stewardship towards the environment, but for a long time I somehow saw my interest in environmental matters as separate from my professional artistic activities. But I have come to understand that there are many in the arts who share my environmental interests, and that there are valuable roles for artists and art educators to play in not only raising public awareness about these issues but also in devising creative solutions to environmental problems.

My assumptions about the processes of knowing are of equal importance in how I proceed as an educator and researcher. My approach to understanding an area of inquiry, like Neilson (1998), is not only “what is going here?” (p. 38), but also “what can I, as an individual or with others, begin to do about it?” (p. 147). This need, to not only explore through research, but also to act on research findings aligns me with a critical epistemological lens, as summarized by Schram (2003). I need to see the applicability of research in order to appreciate its value, moving beyond the tasks of description and analysis into the realm of transformation. As Schram writes, this lens “moves researchers beyond a concern for describing what is and pushes them and others toward the question of what could be” (p. 34). In this I put my values and biases as a researcher into play, attempting to more closely link theory with practice as a means to help advocate for and activate social change.

In acknowledging the engagement of my biases in my research, I have also found a resonance with the epistemological stance of philosophical hermeneutics, as described by Schwandt (2000). He presents this stance by positioning understanding as interpretation, which is “a basic structure of our life experience” (p. 194). In this, understanding is “participative, conversational, and dialogic,” (p. 195) and always bound up with language, therefore discussions between researchers and participants (or more accurately, co-researchers) create meaning and

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<sup>6</sup> I use the term environment in a broad sense to refer to the natural, built and cultural spaces and places that we exist in.

understanding, rather than simply attempt to reproduce it. My ideas about ways of knowing in the arts and research align well with this stance: Schwandt posits that there is never one ‘correct’ interpretation in philosophical hermeneutics, but instead “meaning is negotiated mutually in the act of interpretation; it not simply discovered” (p. 195). He notes that the biases we bring to the experience of interpreting do not need to be disregarded; instead understanding/ interpreting “requires the engagement of one’s biases” along with an awareness that we may need to “alter those [biases] that disable our efforts to understand others, and ourselves” (p. 195).

Both of these stances, the critical stance and that of philosophical hermeneutics, fit well with my beliefs about how people come to know, understand and relate to the environment. I believe that the nature of their relationships to the spaces, places and other forms of life on this planet are built on their values, assumptions, biases, and feelings, rather than on a rational, cognitive set of ideas and concepts (as much of the literature in environmental education research would lead us to believe). Heshusius & Ballard (1996) support my belief; they discuss the ways in which the roles of somatic and emotional knowing are too often disregarded in knowing ourselves and our world, (and perhaps are a factor in the separation many feel from the environment). These stances therefore lead me to an exploration of not only understanding how people perceive their relationships to the environment, but also to how to improve them.

Lawrence-Lightfoot and Davis’ (1997) analogy of research may prove useful in helping me to visualize these epistemological influences. She sees research less as a form of excavation and more as a “rich ecological mapping” (p. 139). I have conceived of research as excavation in the past, as a means of unearthing truths about the nature of knowing and learning. This latter metaphor, rife with destructive overtones, involves finding existing knowledge through invasive means. Instead I prefer the metaphor of mapping, one I have used in the past to conceptualize my own art-making, as it is more exploratory, less damaging, and always open to revisions as one’s knowledge of a territory deepens.

These ontological and epistemological influences have led me to understand that my doctoral research is firmly rooted in an exploratory means of inquiry, one with strong ties to qualitative research methods. Yet like the act of guerilla gardening, I want to move it outside the boundaries of a more traditional approach to gardening and make my research practice participatory, dialogic and transformative. I aspire to create a collaborative environment that encourages the contributions of practicing teachers to eco-art education, and makes space for us as a team to play with ideas, think critically about them, plant these ideas with students (and each other) and watch them grow.

### *Digging in the Garden*

Collaborative action research has the potential of providing just such an environment, and has much in common with guerilla gardening. As Kemmis and McTaggart (2003) describe it, collaborative action research is focused on the practical, the participatory, the critical and the recursive (defined as reflexive and dialectical). Guerilla gardening shares these characteristics, as well as its activist stance and emergent design. In this both undertakings often involve complex processes that are cyclical in nature, and rarely result in clear cut endings; instead they often lead to deepened understandings and more questions (Herr & Anderson, 2005).

It should be noted that action research is not one clearly delineated approach, but a family of research methodologies that pursue action and research simultaneously (Dick, 1999). As he writes, “It is thus an **emergent** process which takes shape as understanding increases; it is an

**iterative** process which converges towards a better understanding of what happens” (Dick, 1999, n.p.). As Herr and Anderson (2005) note, many different variants of action research exist, including participatory action research, practitioner research, action science, cooperative inquiry, teacher research, to name only a few. But given my desire for a non-hierarchical, participatory mode of inquiry that integrates theory and practice, collaborative action research is a suitable fit.

A number of texts have proved instrumental for me in better understanding this methodology. In the first, Schensul & Schensul (1992) define collaborative research as “building multisectoral networks that link researchers, program developers, and members of the community or group under study with the explicit purpose of utilizing research as a tool for joint problem-solving and positive social change” (p. 162). Its main objective is to include all parties in all phases of the research process in order to increase the likelihood of implementing the research results for the benefit of the population under study. The authors posit that this helps “blur the distinction between researchers and practitioners in the field” (p. 163), a highly desirable goal from my perspective as it acknowledges the expertise of practicing educators and makes them central to the research and design of innovative pedagogy. The central elements of collaborative action research, which include an empowerment of all stakeholders in the inquiry, information sharing, creative and co-operative problem-solving, and cultural transformation, all align with my ontological and epistemological stances. As the authors conclude, “critical thinking and participation in an investigatory process are crucial elements in enhancing the ability of individuals and groups to move toward satisfying community needs” (p. 198).

A closely related methodology is participatory action research, and its approach, described in detail by Kemmis and McTaggart (2003), shares many of these same attributes. Drawing from a combination of participatory research, critical action research, classroom action research and action learning, this methodology “emerges where people want to make changes thoughtfully - that is, after critical reflection” (p. 346). It utilizes a spiral of self-reflective cycles of planning for change, similar to much action research: implementing a change, observing and reflecting on the consequences of that change, and re-planning for subsequent change based on the first steps (refer to Appendix F for a diagram of this model). These authors support this collaborative approach as a way to recognize the inherent social nature of the processes and practices of education; they believe that changing these practices should be a social process in itself.

Taking on a collaborative action research project is not without its drawbacks. Herr and Anderson (2005) note an inherent tension between the dualities of practical/formal knowledge and the insider/outsider status of the research team. They also warn of a struggle “with the collaborative nature of the research and the individual nature of the dissertation” (p. 89). But an intensive study of the literature in the area and an adherence to Reason and Bradbury’s (2001) “primary rule in action research practice is to be aware of the choices one is making and their consequences”(p. 77) has helped the team to anticipate and successfully negotiate some of the bigger challenges of this methodology.

An example of one of these challenges centres on my role on the team. I recognize that I have been playing the role of ‘outsider’ on the team as I was the only team member who is not a practicing elementary teacher (though I do have a previous record as an itinerant art teacher in elementary schools). Yet I have since discovered that this is not an uncommon composition for a collaborative action research team; in fact Herr and Anderson (2005) refer to this as an ideal form of participatory action research, where an outsider collaborates with insiders for the purpose of inquiry. But as the initiator of the study, I have needed to be sensitive to establishing

an environment of reciprocity and equity within the team; I did not want to reinforce traditional hierarchies of university/school settings or theoretical/practical knowledge. This required the identification of the expectations of my collaborators from the beginning of the study, and involved an ongoing negotiation of roles and responsibilities within the research team throughout the study.

### ***Watching What Grows***

The team has been meeting for the past nine months to address the goals of the study. We aimed to record our experiences through a variety of types of qualitative data, including written data through questionnaires and individual journals; transcripts of group meetings; and field notes and photographs from eco-art classes. Preliminary data analysis has informed the research throughout the project, as team members were able to share and review data on an ongoing basis in order to inform their individual planning and implementation of eco-art lessons. As Herr and Anderson (2005) note that this is a complex undertaking in that “one’s task is to speak out of what one has discovered thus far while holding the awareness that the data and analysis have more to offer than what one has currently had the chance to thoroughly explore” (p. 81).

The breadth of lessons that has been developed to date has been impressive. Students have utilized a range of environmentally friendly materials, from ones found in nature to consumer products that are reusable and recyclable. They have experimented with a wide variety of techniques, including traditional ones such as drawing and painting, to more challenging ones such as papermaking, clay modeling, basket weaving and ice sculpting. Their creative products have been equally innovative: writing, plantings, scarecrows, murals, performance art, garden installations and a video have all been created over the course of the project. It has been inspiring and exhilarating to both observe and participate in the development of the lessons, as students so often demonstrated a level of engagement and innovation that we had not anticipated.

While analysis has been ongoing throughout the project, there is still much work to do. In addition to the initial meaning-making and member-checking, I will be revisiting the data through more traditional qualitative analysis techniques of coding, thematic analysis, and concept-mapping. Due to the multiple sources of data, I will work towards “crystallizing” the data (Richardson, 2000), the postmodern version of triangulation, in order to deepen my understandings of issues or themes that arise and reflect the complexity inherent in them. I will also be considering the possibility that the interpretation/implications of the data can be framed in a variety of ways, as imagery, as art project, and as text. This may open up the interpretation(s) to a wider set of audiences, and help ensure that the findings get disseminated beyond the walls of the academy.

As so little comprehensive curricular development has been done in the field of eco-art education, this research provides a unique opportunity to learn about the content and structure of eco-art education, and the ways in which teachers frame this learning for their classes. It should prove central in demonstrating what eco-art education can look like in elementary school settings, and in identifying the challenges faced by teachers who choose to implement this approach in their classrooms. Ultimately it is my goal that this research will contribute to the greening of the field of art education as well as stretch the boundaries of environmental

education, all in hopes of fostering ecological literacy in our students – and teachers – in the years to come.

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